

THE AI REVOLUTION

The Future of Professions and Economic Sustainability



FUSION BOND EPOXY

ahqsons.com

WATE-KOTE



AL-QAHTANI
PIPE COATING INDUSTRIES

Tariq A.H. AL Qahtani & Bros.



شركة القحطاني
لصناعات تغليف الأنابيب

طارق عبد الهادي القحطاني وإخوانه

Kingdom of Saudi Arabia

P.O. Box 1980 Dammam 31441

Tel (013) 857 5400 | (013) 857 4150 Fax (013) 857 2255 info@aqpci.net

U.S.A. Office | Houston

Tel 001 713 781 0366 Fax 001 713 811 344 info@saosi.com



info@aqpci.net

info@saosi.com

المملكة العربية السعودية

ص ب ١٩٨٠ الدمام ٣١٤٤١

هاتف ٨٥٧ ٥٤٠٠ (٠١٣) ٨٥٧ ٤١٥٠ (٠١٣) فاكس ٨٥٧ ٢٢٥٥ (٠١٣)

مكتب الولايات المتحدة الأمريكية | هيوستن

هاتف ٧٨١ ٠٣٦٦ ٧١٣ ٠٠١ فاكس ٨١١ ٣٤٤ ٧١٣ ٠٠١



ISO 9001: 2015 | ISO 14001: 2015 | ISO 45001: 2018



GECC

One of the largest Piling & Ground improvements Company in Saudi Arabia.

ISO 9001:2008 certified piling entity in Saudi Arabia

Highly Qualified and experienced staff and modern equipments
Successfully planned and completed several large size projects
with environmental friendly techniques.

Our innovative approach on projects saves millions to client.

SERVICES OFFERED

Fundex Piling, Bored & Bentonite Piling, CFA Piling

Stone Columns & Dynamic Compaction.

Sheet Piling, Pipe / H-Piling & Shoring.

Dewatering System by Well Points & Deep Wells.

Pile Load Test, Prototype Footing Test PIT & DMs.

OFFICES

AL-KHOBAR

P. O. Box 1053 - Al-Khobar 31952
Tel. : +966 13 887 3577 / 808 5361
Fax : +966 13 887 3536
Email : gec-kho@gecsaudi.com

RIYADH

P. O. Box 15297 - Riyadh 11444
Tel. : +966 11 472 2616
Fax : +966 11 472 4617
Email : gec-ryd@gecsaudi.com

JEDDAH

P. O. Box 9182 - Jeddah 21413
Tel. : +966 12 671 7280
Fax : +966 12 671 7292
Email : gec-jed@gecsaudi.com

BRANCHES

JUBAIL

Tel. : +966 13 363 4513
Fax : +966 13 363 4515
Email : gec-jbl@gecsaudi.com

YANBU

Tel. : +966 14 325 7132
Fax : +966 14 325 7133
Email : gec-ynb@gecsaudi.com

JIZAN

Tel. : +966 17 322 0272
Fax : +966 17 322 0271
Email : gec-jez@gecsaudi.com

www.gecsaudi.com

OUR MAJOR CLIENTS

مرفاق
MARAFIQ

SIEMENS
Outotec SK E&G

سابك
SABIC



الهيئة العامة لسدنة المياه

حافلات الرياض
Riyadh Bus

كيان السعودية
Saudi Kaysin

الشركة السعودية للكهرباء
Saudi Electricity Company

أرامكو السعودية
Saudi Aramco



معدن
MAADEN



BUILDING FOUNDATION FOR BETTER FUTURE

We specialize in bored and CFA piling, foundation preparation, shoring systems, and water control solutions that form the backbone of safe and successful project execution.

AL-QIMAH FOR DRILLING EQUIPMENT



We're specialize in providing top-quality drilling machinery, tools, and solutions to meet the needs of construction, oil, and industrial sectors.



MAFAB
Convert BIG
ideas
Into BIGGER
products



Since 2004, we have been delivering reliable industrial solutions. We manufacture metal pipes, steel structures, drilling tools, and custom industrial equipment—engineered to meet local and international standards.

A SUPPLIER OF LOGISTICS OPERATIONS.



Professional logistics and transport services to ensure safe, timely, and efficient delivery of equipment and materials to project sites. We also deal with tricons, drilling teeth and drilling rig rental on short and long term basis.



OUR VALUE CLIENTS



In This Issue

CONTENTS

Message from The Chairman IEP-SAC	05
Message from The Ambassador of Pakistan	06
Message From The President IEP Pakistan	08
Message From The Secretary General IEP Pakistan	09
Annual Report By General Secretary IEP SAC	10
Award And Scholarship Committee Report	12
IEP-SAC Local Council	14
Scenes from IEP-SAC Activities (Central Region)	16
IEPSAC Standing Committees 2026	20
Message from Chairman IEP -SAC (Eastern Region)	24
IEP-SAC Local Council (Eastern Region)	26
Scenes from IEP-SAC Activities (Eastern Region)	28
EP-SAC Standing Committees 2026 (Eastern Region)	30
Recommendations For Preventing Disorders	34
Performance Evaluation of Concrete using Water	45
Evolution of Mission-Critical Communications	53
Balanced Leadership: A New Perspective on Leadership	64
AI-Based Energy Management Strategies for Renewable Energy	67
Governing Artificial Intelligence in Cybersecurity	72
Directory	90
Architects And Town Planners	91
Chemical Engineers	92
Civil Engineers	95
Computer Engineers	110
Electrical Engineers	113
Electronics Engineers	133
Mechanical Engineers	139
Metallurgy Engineers	154
Engineers from Other Discipline	156
Write for YOUR Journal	161
IEP Membership Form	163



Editorial Board & Printing Committee

Chief Editor & Convener

Engr. Masood Ul Hassn

Co- Convener

Engr. Syed Mujtaba Omer Junaidy

(Members)

Engr. Salman Rashid

Engr. Dr. Awais Mahmood

Engr. Waqar Ahmad Malik

IEP-SAC Journal is published yearly by the Institution of Engineers Pakistan, Saudi Arabian Center (IEP-SAC), Riyadh, and distributed to the engineering community in Saudi Arabia. To promote discussion of issues in the field of engineering and ensure coverage of all responsible points of view, conflicting opinions and views may appear, however, IEP-SAC cannot accept any liability for such views nor for any errors or omissions.

You may get copy of Journal at



Designed By: Najam ul Majeed
(Cell: 0500253948)
najam_majeed@yahoo.com



insight

TRAVEL & TOURISM

Your Trusted Partner for Umrah & Travel Services

OUR SERVICES



Complete Umrah Packages

Economy to VIP Packages
with Full Guidance



Hotels Booking

Standard | 3★ | 4★ | 5★
Luxury Hotels



Transportation Services

Bus | Private Cars | VVIP
Transport (All Types Available)



Air Tickets

Any Airline | Any Destination Worldwide



Catering Services

Packages | Buffet
Group Arrangements



Tourism Across the Kingdom

Explore Saudi Arabia
with Comfort & Ease

CONTACT US



Contact Medinah



+966 50 0861820, +96654266932



E- mail a@iicc.sa



Lahore Pakistan



+92 301 8490804



WWW.IICC.SA

NEW MAVERICKS

New Mavericks is one of the leading system integrator and technology management company in Saudi Arabia. Providing a range of Infrastructure services for commercial, private, public, and residential sectors throughout KSA.

New Mavericks Saudi Arabia is currently lead by Dr. Mohammad Ali Alothri as the CEO beside with Mr. Faisal Asif who is serving as the CTO along with Mr. Affan Nadeem as the COO.



NEW MAVERICKS

CONNECT TODAY

info@newmavericks.sa

www.newmavericks.sa



KING ABDULLAH IBN ABDULAZIZ RD - KING FAISAL DIST.
RIYADH, KINGDOM OF SAUDI ARABIA

Services in a Nutshell:

- Software Engineering
- Cyber Security & GRC
- Cloud Services
- Data Engineering
- Professional Services

Message from the Chairman IEP-SAC

The AI Revolution and Sustainability



The Institution of Engineers Pakistan-Saudi Arabia Center (IEP-SAC) is a professional platform dedicated to supporting Pakistani engineers in the Kingdom of Saudi Arabia (KSA). IEP-SAC fosters professional development, knowledge sharing, and networking. Through seminars, technical papers, and social engagements, we help engineers stay updated with the latest advancements of engineering in the industry. Additionally, we extend support to deserving engineering students in Pakistan, reinforcing our commitment to the profession.

We are preparing for our Annual Engineers' Convention, featuring a seminar on "The AI Revolution: The Future of Professions and Economic Sustainability", to be delivered by Dr. Naveed Sherwani, Chairman, National Semiconductor Hub, and CEO, Epic Semi, KSA. This seminar will explore evolving role of artificial intelligence in shaping professions and its implications for economic sustainability. It highlights AI's impact on sectors such as engineering, healthcare, finance, and education, and emphasizes the need for new skills, ethical frameworks, and effective policies to ensure responsible use and sustainable growth.

I am also pleased to present the IEP-SAC Journal 2025-2026, which compiles technical papers and key activities organized by IEP-SAC to enhance engineering knowledge and professional growth. I encourage all Pakistani engineers to actively participate, become members of IEP-SAC, and contribute to building a better future for your profession.

IEP-SAC extends its heartfelt appreciation to fellow engineers for their dedication, professionalism, and invaluable contributions to Saudi Arabia's development. On behalf of IEP-SAC, I express gratitude to the Custodian of the Two Holy Mosques, King Salman bin Abdul Aziz Al-Saud, and Crown Prince His Royal Highness Muhammad bin Salman bin Abdul Aziz for their unwavering hospitality and support for the Pakistani community and engineers. May Allah (SWT) protect Kingdom of Saudi Arabia and sustain safety, security and prosperity for all.

We extend our sincere thanks to H.E. the Ambassador of the Islamic Republic of Pakistan for his continuous patronage of IEP-SAC. We acknowledge the generous contributions of our sponsors and fellow engineers, whose support is vital to the success of IEP-SAC activities. I extend my sincere appreciation to IEP-SAC Council Members for their dedication and commitment to our shared goals.

Finally, we express our gratitude to Allah (SWT) for granting IEP-SAC the resources, energy, and opportunities to serve the engineering community. Wishing you all happiness, success, and a prosperous future.

A handwritten signature in blue ink that reads "Rafiq M. Choudhry". The signature is fluid and cursive, with a large 'R' and 'M'.

Prof. Rafiq Muhammad Choudhry, Ph.D., PE, FIE(Pak)
Chairman, IEP-SAC, KSA, Friday 27 March 2026 (8 Shawwal, 1447)



Message from H.E. Ahmad Farooq, Ambassador of Pakistan to the Kingdom of Saudi Arabia

It is a profound honour to reach out to the vibrant community of Pakistani engineering professionals in the Kingdom of Saudi Arabia through the pages of this journal. I convey my heartfelt greetings and warm wishes to all the members of Institute of Engineers, Pakistan, Saudi Arabia Chapter (IEP-SAC) on publication of the annual journal. This journal is surely a significant milestone in the journey of professional excellence and represents not only the technical insights but the records of shared intellectual progress and evolution.

The professional landscape of Saudi Arabia is vividly marked by dedication, commitment and brilliance of Pakistani engineers. Saudi Arabia is currently undergoing historic transformation under its Vision 2030 and it is a matter of immense pride for us to witness Pakistani engineers at the very heart of this transformation and playing a pivotal role in the Kingdom's journey. They are dedicated partners in the progress and development of Saudi Arabia, working with tireless resolve to turn ambitious visions into reality.

Besides the professional endeavors, the IEP-SAC's dedication to the causes of their fellow nationals in the Kingdom and commitment for supporting education through scholarships in Pakistan is highly commendable. I appreciate the leadership and all the members of IEP-SAC and would encourage you to keep the spirits high, continue striving for excellence and inspire our younger generations. The knowledge and expertise you gain during your professional careers are the most valuable assets and I would encourage the chapter to continue finding ways of channeling this knowledge and expertise back into Pakistan's educational, research and industrial sectors.

In closing, I congratulate the editorial team and the contributors of this journal for their untiring efforts, devotion and hard work. I wish IEP-SAC every success in their future endeavors and pray for their continued prosperity.

Ahmad Farooq

Ambassador of Pakistan April 14, 2026

Embassy of the Islamic Republic of Pakistan

Riyadh, Kingdom of Saudi Arabia

www.iep-sa.org





مجموعة عبدالله الخريف ABDULLAH KHURAIF GROUP



Healthcare, Agriculture, Industry, Trading & Engineering Contracting

A private enterprise located in Riyadh City under the Ministry of commerce & Industry
Commercial Registration CR No. 1010213518 and VAT#311140491900003.

Our Market: • Engineering & Architectural Firms • Constructions & Contracting Firms • Government / Public & Private Projects Owners
• Developers in Various Fields such as Healthcare, Agriculture, Industry, Trading & Engineering Contracting

Rehabilitation & Waterproofing Trade Special Division

Introduction:

- Khuraif Group Rehabilitation & Waterproofing Division is working as approved Trade Special Contractor in all kind of Waterproofing Works, Structural Strengthening & Concrete Repairs Works. The purpose of establishing this division is to provide total solutions to the ever-growing Construction Sector in the Kingdom of Saudi Arabia.
- Khuraif Group is supported by a team of well experienced Management, Engineers, Supervisors and skilled Technicians for the accomplishment of every project with full dedication.
- Khuraif Group is offering a good quality of workmanship at every job.

Services:

Khuraif Group Rehabilitation & Waterproofing Division offers a wide & diversified range of high-quality services in different types of Rehabilitations & Waterproofing works such as:

- All kind of concrete repairs & Structural Strengthening works.
- Architectural Finishes, Masonries & Painting works.
- All kind of Waterproofing Systems which include Modified Bituminous membranes, SIK/INSUWRAP PVC Compartment and/or General Application Systems & EPDM membranes, etc.
- Thermal Insulation by using Polystyrene, Rigid Polyurethane & Sprayed Polyurethane systems.
- Cementitious Waterproofing Systems.
- Liquid Applied Waterproofing Systems.
- All kind of Painting works.
- Epoxy Works, wide range of industrial flooring with epoxy & different kinds of surface hardeners & Screed Grouting.
- Light Weight Cement Foaming.
- General Electro-mechanical & Plumbing works

For any query, contact: Mirza Munir Baig General Manager Rehabilitation & Waterproofing Division

Office: Abdullah Bin Zubair Road, Khuraif Medical Complex Building-Uraijah (Exit-30), Riyadh

PO.Box: 20616, Riyadh-12965, KSA PHONE +966114301600 / CELL +966507254505

www.khuraifgroup.com / info@khuraifgroup.com / KhuraifGroup@gmail.com / MunirBaigMirza@khuraifgroup.com

MunirBaigMirza@hotmail.com / MunirBaigMirza@aol.com / MunirBaigMirza@gmail.com



شركة مصادر الدولية للمقاولات International Contracting Resources Co.



البناء المدنية والصناعي (P.E.B.) تركيب H.V.A.C المباني المعدنية مسبقة الصنع
الصناعية والخدمات التقنية UPS الطاقة الشمسية وأنظمة

Key Areas of Engagement

- Civil Construction, including Multi-Story Buildings, Pre-Engineered Steel Buildings, Fire Alarm and Fire Protection Systems.
- Steel Fabrication
- Technical Resources and Services.
- Emergency Power and UPS Installation.
- HVAC Works.
- Electrical and Mechanical Services and Construction.
- MV and Industrial Electrification
- Architectural finishes and furnishing.



Mob: +966(50) 3879053
+966(50) 3847053
+966(50) 3893042



Cross# 24, Prince Bandar Street, North,
Al Khobar 31952, Kingdom of Saudi Arabia
Tel: +966(13) 8816466



MESSAGE FROM ENGR. SOHAIL BASHIR FIE (PAK) PRESIDENT



INSTITUTION OF ENGINEERS PAKISTAN

It is my pleasure to extend warm greetings and congratulations to The Institution of Engineers, Saudi Arabian Center (IEP SAC) on the occasion of the 68th IEP SAC Technical Seminar, being held on April 23, 2026 in Riyadh, Kingdom of Saudi Arabia.

The chosen topic, "The AI Revolution - The Future of Professions and Economic Sustainability," is timely and of critical importance. Artificial intelligence is rapidly reshaping industries, redefining professional roles, and creating new pathways for sustainable economic growth. This seminar will provide a vital forum for engineers, academics, industry leaders, and policymakers to exchange insights, confront challenges, and explore collaborative opportunities that will shape the future of our professions and economies.

I am honored to know that my NEDUET classmate, Dr. Naveed Sherwani will deliver the keynote address. He as Chairman of the National Semiconductor Hub and CEO of Epic Semi, KSA is a globally recognized semiconductor leader, entrepreneur, and ecosystem architect with over four decades of experience across academia, start-ups, and the global semiconductor industry. His deep technical knowledge and proven leadership in building semiconductor ecosystems make him exceptionally well suited to lead discussion on how AI-driven hardware and systems will influence professional practice and economic resilience.

On behalf of the Central Council of the Institution of Engineers, Pakistan (IEP), and my own behalf, I wholeheartedly congratulate the office bearers of IEP-SAC, for organizing regular technical seminars, publishing the journal, containing important articles on current engineering issues to facilitate the exchange of knowledge and information for the benefit of engineers. IEP-SAC by awarding scholarships to 12 engineering universities students of Pakistan annually on need cum merit basis for the last 29 years regularly is carrying out a great noble cause for patronization the engineering students of Pakistan.

IEP applauds IEP SAC's continued commitment to fostering knowledge exchange and professional development among engineers across borders. I encourage all participants to engage actively, challenge assumptions, and seek constructive collaboration that advances both technological innovation and societal benefit.

Wishing the organizers and attendees a highly successful and thought-provoking seminar.

Engr. Sohail Bashir, P.E, FIE (Pak)

President, The Institution of Engineers, Pakistan



Message From The Secretary General



INSTITUTION OF ENGINEERS PAKISTAN

It is both an honor and a privilege to extend my heartfelt congratulations to the Institution of Engineers, Pakistan - Saudi Arabia, IEP Overseas Centre (IEP-SAC), for successfully hosting the Annual Technical Seminar in Riyadh on the theme "The AI Revolution - The Future of Professions and Economic Sustainability." A particularly noteworthy aspect of this occasion is the publication of the Technical Annual Journal, which features research-driven technical papers designed to benefit the engineering community, advance the profession, and address pressing contemporary engineering challenges.

The significance of this event is further underscored by the participation of distinguished engineers from diverse disciplines, who are presenting their valuable contributions. The keynote address will be delivered by the renowned expert, Engr. Dr. Naveed Sherwani. It is also a matter of great satisfaction that IEP-SAC has successfully organized the midterm seminar on the theme "Engineering the Invisible: How Foundations Shape Our World," with Engr. Parvez Naushahi, General Manager of Ground Engineering Contractors, KSA, as the keynote speaker, and Mr. Sayid Aziz, Welfare Attache of the Embassy of Pakistan in Saudi Arabia, as the Chief Guest.

IEP rightly takes pride in the IEP-SAC Awards and Scholarship Committee for sustaining the scholarship program for engineering students on the basis of need and merit for the past 29 years. This initiative is a noble cause and a commendable service to the engineering profession and community in Pakistan.

I am proud to affirm that engineers, whether from developed or developing nations, play a vital role in the prosperity of their countries. Nations depend on engineers to maintain their competitive edge in a rapidly evolving global economy. Engineers are indispensable in advancing manufacturing processes, developing efficient communication technologies, building transportation infrastructure, and strengthening strategic defense systems.

I extend my sincere congratulations to the Chairman, Vice Chairmen, Secretary, and Local Council Members of IEP-SAC for their dedicated efforts in organizing the Annual Seminar and publishing the Technical Annual Journal. I wish the seminar continued success and look forward to its future endeavors



Engr. Amir Zamir Ahmed Khan

Secretary General, The Institution of Engineers, Pakistan

IEP-SAC CENTRAL REGION

ANNUAL REPORT 2025-26



الحمد لله رب العالمين، والصلاة والسلام على سيد الأنبياء والمرسلين، نبينا محمد، وعلى آله وصحبه أجمعين

A Year of Advancement and Engagement

The past year has been marked by meaningful progress and renewed momentum for the Institution of Engineers Pakistan – Saudi Arabian Center (IEP-SAC). With a continued focus on professional excellence, knowledge sharing, and community engagement, the organization strengthened its role as a dynamic platform for Pakistani engineers in the Kingdom.

Rather than merely continuing established traditions, this year reflected a deliberate shift towards future-oriented engineering themes, deeper engagement, and stronger collaboration among members. Each initiative contributed not only to professional development but also to reinforcing the collective identity of our engineering community.

Flagship Technical Engagements

Annual IEP-SAC Technical Seminar – May 8, 2025

The 66th Technical Seminar was held at the King Salman Social Center, Riyadh, bringing together professionals from diverse engineering disciplines. The seminar focused on “Construction 4.0 and Beyond: Next Generation Construction Technologies.”

The keynote address by Prof. Dr. Salman Azhar provided a forward-looking perspective on the transformation of the construction industry through digitalization and emerging technologies. The session explored advancements such as Building Information Modeling (BIM), digital twins, construction robotics, reality capture, and 3D concrete printing.

The seminar emphasized how evolving technological ecosystems are reshaping engineering practices—enhancing efficiency, improving safety, and redefining project delivery. Participants gained valuable insights into how these innovations are addressing modern construction challenges and paving the way toward the concept of Construction 5.0.

The event also served as a strong networking platform, fostering professional dialogue and collaboration among attendees.

Mid-term Technical Seminar – November 28, 2025

Continuing its tradition of high-impact knowledge sessions, IEP-SAC organized the 67th Technical Seminar under the theme “Engineering the Invisible: How Foundations Shape Our World.”

The session highlighted the critical yet often overlooked role of foundation engineering in modern infrastructure. The keynote speaker, Engr. Parvez Naushahi, shared extensive practical insights drawn from decades of experience in geotechnical engineering and large-scale infrastructure projects.

The seminar explored advanced foundation techniques including sub-surface analysis, groundwater modeling, ground improvement strategies, and super pile design. Emphasis was placed on ensuring safety, sustainability, and long-term structural performance in complex engineering environments.

Through real-world case studies, including major infrastructure developments, the session provided participants with a deeper understanding of the planning and execution challenges associated with foundation engineering.

Community & Social Engagement

Annual Family Picnic – February 6, 2026

Strengthening community bonds remained a key priority throughout the year. The annual family picnic, held on February 6, 2026, provided an opportunity for members and their families to connect in a relaxed and informal setting.

The event featured a range of recreational activities including sports, games, and children's competitions, creating an inclusive environment for participants of all ages. Beyond recreation, the gathering reinforced a sense of belonging and camaraderie within the IEP-SAC community.

Organizational Development

IEP-SAC continued to evolve through the addition of new talent and perspectives within its leadership structure.

During the year, Engr. Tariq Aziz joined the Central Region Council, bringing valuable experience and fresh insights to the organization. His inclusion reflects IEP-SAC's ongoing commitment to strengthening its institutional capacity and fostering leadership diversity.

The organization continues to benefit from the collective contributions of its council members, whose dedication drives both continuity and innovation.

Reflections and Forward Outlook

This year reaffirmed IEP-SAC's commitment to staying aligned with emerging engineering trends while maintaining a strong sense of community. The focus on advanced technologies, combined with consistent member engagement, has positioned the organization for sustained growth.

Looking ahead, IEP-SAC aims to:

- Expand the scope of technical engagements
- Foster stronger industry-academia linkages
- Enhance member participation and outreach
- Continue contributing to the professional development of engineers

Acknowledgment

We extend our sincere appreciation to all council members, volunteers, and participants whose efforts made this year successful. Their commitment remains the foundation of IEP-SAC's continued progress.

We also express our gratitude to the leadership of the Kingdom of Saudi Arabia for their continued support of the expatriate community, enabling organizations like IEP-SAC to thrive.

Conclusion

As IEP-SAC moves forward, it does so with renewed purpose—building on its strengths while embracing innovation and collaboration. The journey ahead promises further opportunities to grow, connect, and contribute meaningfully to the engineering profession.

Warm regards,

Mohammad Asim Siddiqui

General Secretary, IEP-SAC Central Region



IEP-SAC AWARDS AND SCHOLARSHIPS COMMITTEE REPORT

لَيْسَ الْبِرُّ أَنْ تُولُؤُوا وَجُوهَكُمْ قَبْلَ الشَّرِّقِ وَالْمَغْرِبِ وَلَكِنَّ الْبِرَّ مَنْ آمَنَ بِاللَّهِ وَالْيَوْمِ الْآخِرِ وَالْمَلَائِكَةِ وَالْكِتَابِ وَالنَّبِيِّينَ وَآتَى الْمَالَ عَلَى حُبِّهِ ذَوِي الْقُرْبَى وَالْيَتَامَى وَالسُّكَّانَ وَابْنَ السَّبِيلِ وَالسَّائِلِينَ وَفِي الرِّقَابِ ۖ.... ۞
إِنْ تُبْدُوا الصَّدَقَاتِ فَنِعِمَّا هِيَ ۚ وَإِنْ تُخْفُوهَا وَتُؤْتُوهَا الْفُقَرَاءَ فَهُوَ خَيْرٌ لَكُمْ ۚ وَيُكَفِّرُ عَنْكُمْ مِنْ سَيِّئَاتِكُمْ ۗ وَاللَّهُ بِمَا تَعْمَلُونَ خَبِيرٌ ۞

"But Al-Birr (righteousness, piety) is the quality of one who believes in Allah, and the Last Day, and the Angels, and the Book, and the Prophets and distributes his wealth, in spite of love for it, to the kinsfolk, and to the orphans, and to the needy, and to the wayfarer, and to those who ask, and to the ransom of prisoners."
(Al-Baqarah-177)

"If you disclose your (acts of) charity, it is well, but if you conceal it, and give it those (really) in need, that is better for you; it will remove from you some of your (stains of) sins and Allah is well acquainted with what you do."
(Al-Baqarah-271)

The Engineer plays an important role in the development of any country and build a better world. IEP-SAC, Saudi Arabian chapter of The Institute of Engineers Pakistan under the patronage of the Embassy of Islamic Republic of Pakistan in Saudi Arabia along with other technical and social activities is also playing its role in supporting Engineering education in Pakistan.

By the grace of Allah, the Almighty, the IEP-SAC scholarship program for needy and academically sound students in the Engineering Universities and Colleges of Pakistan was launched 29 years ago in the year 1996. With the joint efforts of IEP-SAC, Local Council members, and others, it has been expanding ever since and presently 96 students from the below listed 12 public-sector universities and colleges are benefiting from this program.



1. University of Engineering and Technology, Lahore
2. University of Engineering and Technology, Taxila
3. University College of Engineering and Technology (Bahauddin Zakariya University), Multan
4. Institute of Chemical Engineering and Technology (University of the Punjab), Lahore
5. Dawood University of Engineering and Technology, Karachi
6. NED University of Engineering and Technology, Karachi

7. Mehran University of Engineering and Technology, Jamshoro
8. Quaid-e-Awam University of Engineering Sciences and Technology, Nawabshah
9. NWFP University of Engineering and Technology, Peshawar
10. Baluchistan University of Engineering and Technology, Khuzdar
11. Mirpur University of Science and Technology, Mirpur (AJ&K)
12. Khawaja Fareed University of Engineering and Information Technology, Rahim Yar Khan

As can be noted from the list, this scholarship program serves all the four provinces of the Islamic Republic of Pakistan and the State of Azad Jammu and Kashmir. The rules and regulations, selection criteria and application forms can be accessed and printed from IEP-SAC website. By the blessings of Allah Almighty, 26 batches of the scholarships have been completed so far and 27th batch was launched in January 2026, benefiting meritorious and needy students from this scholarship program who will serve humanity and our homeland after graduation.

The continuity of IEP-SAC scholarship program has not only been maintained during last 29 years, but it has also been expanding gradually with the help of financial contributions from various philanthropists, individuals, and organizations in Saudi Arabia. I take the opportunity to offer the readers of these lines in general and the Pakistani community and engineers in particular to join hands with us in this noble and just cause. It is a great service to the Engineering community in Pakistan. It is my humble request to all to put our maximum efforts in contributing and expanding the scholarship program to the needy and deserving engineering students in Pakistan.

Your suggestions to improve this noble cause further will be most welcomed. Please do not hesitate to contact any of the members of IEP-SAC Awards and Scholarships Committee or Local Council for any suggestion or information.

Arch. Farooq Iqbal, Convener

IEP-SAC Awards and Scholarships Committee





Engr. Prof. Dr. Rafiq M. Choudhry
Chairman & Professor
Imam Mohammad Ibn Saud Islamic University
Mobile: 054-3946548 Email: Choudhry03@gmail.com



**Engr. Mian Abdul Hamid Vice
Chairman**
IS & Governance Consultant
Saudi Electricity Co.
Ph (Off): (011) 461-9368 Mobile:
050-185-8073
Email: hamid1947@hotmail.com



Engr. Mohammad Asim Siddiqui
Secretary
Technical Architect Nokia
Networks
Ph (Off): (011) 440-6154 Mobile:
055-523-6107
Email: siddiquiyusuf@yahoo.com



Engr. Dr. Awais Mahmood
Associate Professor King Saud
University, Riyadh
Mobile: 054-579-8315
Email: mawais@ksu.edu.sa



Engr. Muhammad Fahim Uddin
Project Manager
Hill International
Mobile: 00966 565143133
Fahimmuhammad@hillintl.com



Prof. Dr. Farrukh Aslam Khan
Professor
King Saud University, Riyadh.
Mobile: 056-690-9397
Email: fakhn@ksu.edu.sa



Engr. Farhan Sohail Yezdani
Business Development Manager
HITACHI ENERGY LTD
Ph (Off): (011) 4845600x5204
Mobile: 054-232-3578
Email: fsohail42@yahoo.com



Engr. Arch. Farooq Iqbal
Principal Architect Saudi
Consulting Services (Saudconsult)
Ph (Off): (011) 465-9975 x 1620,
Mobile: 050-712-9256
Email: fiqbal@saudconsult.com



Engr. Dr. Hafiz Muhammad
Imran
CEO TeleNoc
Mobile: 056-9202510
Email: imran@telenoc.org



Engr. Dr. Fakhir Hasani
Associate Professor:
Imam Mohammad Ibn Saud
Islamic University
Mobile: 053 147 2272
Email: smfhasani@hotmail.com



Engr. Masood Ul Hassan
Project Manager
AECOM
Mobile: 0550436830
Email: Civil.masood@gmail.com



Engr. Muhammed Yousaf Ismail
Co-Founder & CEO Tele GIS
Email: yousaf@tele-gis.com
Mobile: +966 569779314



Engr. Muhammad Bilal Yousaf
Senior Project Manager
Comatec Saudi Arabia Company Limited,
Mobile: 055-205-2017,
Email: Bilalyousafg@gmail.com



Engr. Riaz Ahmed
Remote Support Engineer Philips
Healthcare Saudi Arabia Ltd
Mobile: 050-316-4358
Email: riazahmed111@gmail.com



Engr. Syed Mujtaba Omer Junaidy
Senior Technical Architect
Specialized by stc
Mobile: 0507648586
Email: mujtaba.junaidy@gmail.com



Engr. S M Jaleel Hasan
Chief Executive Officer
AB Contracting
Mobile: 050-448-7027
Email: jaleel.hasan@gmail.com



Engr. Rana Sarfraz Ahmad
Head of Telecom Section
Mabran Al Arabia Contracting Co.
Mobile: 050-0048075
Email: ror13502@gmail.com



Engr. Tariq Aziz
SPU Manager
ABSAR Arabian Building Support
Mobile: 055-8390357
Email: engrsalman315@gmail.com



Engr. Salman Rashid
Quality Assurance and Regulatory
affairs Manager
Saudi Mais Co For medical Products
Mobile: 0558390357
Email: engrsalman315@gmail.com



Engr. Wasil Hussain Syed
Sr Telecommunication Engineer
Saudi Electricity Company
Mobile: 0544888742
Email: s.wasil@gmail.com



Engr. Waqar Ahmad Malik
Manager Quality Assurance
Alafanar
Mobile: +966 59 2987120
Email: Engr.malikwaqar@gmail.com



Engr. Ijaz Akhrar
Project Manager
Saudi Telecom Company, Riyadh
Mobile: 055-910-1539
Email: ijazak@hotmail.com

**Want to be part of the engineering
community in KSA?**

Connect with IEP-SAC to collaborate with like-minded professionals and contribute to meaningful impact. Get in touch if you're interested.

www.IEP-Sa.org

SCENES FROM IEP-SAC Activities

CENTRAL REGION

Annual Seminar 8TH May 2025



SCENES FROM IEP-SAC Activities

Annual Family Picnic 6th February 2026

CENTRAL REGION



SCENES FROM IEP-SAC Activities

Annual Family Picnic 6th February 2026

CENTRAL REGION



SCENES FROM IEP-SAC Activities

CENTRAL REGION

Midterm Seminar 28th November 2025



IEP-SAC Organization and Standing Committees

Riyadh, Saudi Arabia, 2026

Organization	
Name of local council member	Role
Engr. Prof. Dr. Rafiq Muhammad Choudhary	Chairman
Engr. Mian Abdul Hamid	Vice Chairman
Engr. Muhammad Asim Siddiqi	Secretary
Advisors	
Engr. Syed Jaleel Hassan	Ex-Chairman IEP-SAC
Technical Seminar Committee	
Name of LC member	Role
Engr. Dr. Fakhir Hasani	Convener
Engr. Muhammad Bilal Yousaf	Co-Convener
Engr. Dr. Hafiz Muhammad Imran	Member
Engr. Waqar Ahmad Malik	Member
Engr. Muhammad Fahim Uddin	Member
Scholarships Committee	
Name of LC member	Role
Arch. Farooq Iqbal	Convener
Engr. Muhammad Bilal Yousaf	Co-Convener
Engr. Dr. Fakhir Hasani	Member
Engr. Tariq Aziz	Member
Engr. Salman Rashid	Member
Sponsorship & Advertisement Committee	
Name of LC member	Role
Engr. Waqar Ahmad Malik	Convener
Engr. Dr. Hafiz Muhammad Imran	Co-Convener
Engr. Muhammad Yousuf Ismail	Member
Engr. Rana Sarfraz Ahmad	Member
Engr. Tariq Aziz	Member
Engr. Salman Rashid	Member
Engr. Abdul Qadir Akbani	Eastern Province
Publications Committee	
Name of LC member	Role
Engr. Masood Ul Hassan	Convener

IEP-SAC Organization and Standing Committees

Riyadh, Saudi Arabia, 2026

Engr. Syed Mujtaba Omer Junaidy	Co-Convener
Engr. Salman Rashid	Member
Engr. Dr. Awais Mahmood	Member
Engr. Waqar Ahmad Malik	Member

Liaison Committee

Name of LC Member	Role
Engr. Dr. Farrukh Aslam Khan	Convener
Engr. Rana Sarfraz Ahmad	Co-Convener
Engr. Dr. Hafiz Muhammad Imran	Member
Engr. Muhammad Bilal Yousaf	Member

IT & Media Committee

Name of LC member	Role
Engr. Muhammad Yousuf Ismail	Convener
Engr. Waqar Ahmad Malik	Co-Convener
Engr. Dr. Fakhir Hasani	Member
Engr. Rana Sarfraz Ahmad	Member
Engr. Syed Mujtaba Omer Junaidy	Member

Events Committee

Name of LC member	Role
Engr. Riaz Ahmed	Convener
Engr. Dr. Awais Mahmood	Co-Convener
Engr. Farhan Sohail Yazdani	Member
Engr. Wasil Hussain Syed	Member
Arch. Farooq Iqbal	Member
Engr. Muhammad Bilal Yousaf	Member

Finance Committee

Name of LC member	Role
Engr. Farhan Sohail Yazdani	Convener
Engr. Muhammad Bilal Yousaf	Co-Convener
Engr. Ijaz Akhtar	Member
Engr. Riaz Ahmed	Member

Message from Chairman IEP -SAC (Eastern Region)



It is an honor and a source of pleasure and satisfaction to present the IEP-SAC-EP annual report about the activities and the events that were organized during 2025/2026.

Being a non-profitable organization, we are always striving to make advancements in pursuing the main objectives of IEP-SAC.

We say, "If you want to walk faster, walk alone, but if you want to walk far walk together."

To organize our activities, we have formulated standing committees with specific responsibilities. We have 9 committees with different goals and objectives.

Our advertisement Committee is playing a vital role who have generated funds to support IEP.

All our activities are possible only by continuous efforts, commitments and dedication of all our council members.

We provide a forum for Pakistani Engineers working in the Kingdom of Saudi Arabia to update their professional knowledge through conducting seminars.

Generally, our technical seminars are organized to enhance the professional knowledge and awareness of Pakistani engineers about the new advancements in the technology.

We have conducted following technical seminars in 2025-2026 to share knowledge with our fellow engineers.

1. Annual Seminar on May 20, 2025, titled "Revolutionizing Engineering & Construction with AI," Presented by Ahmed Mamdouh, Project Manager at DAR International for Engineering & Consultancy.

This seminar explored the transformative role of Artificial Intelligence in reshaping architecture and project management in Saudi Arabia. Speaker also highlighted how mega project like NEOM, the Red Sea Project and King Salman Park are integrating AI technologies to enhance sustainability, real time urban planning and cost efficiency.

2. Mid-Term seminar on Nov 18, 2025, titled: "The GFRP Rebar Revolution: An Attractive Alternative to Steel for a Sustainable World" Presented by Engr. Eid Bader, Deputy General Manager & Engr. Ehtisham Habib, Sales & Specification Consultant at IKK Mateenbar

The speaker explained the advantages of Glass Fiber Reinforced Polymer (GFRP) over traditional steel. Key benefits included its non-corrosive nature, its weight profile which is four times lighter than steel, and an ultimate strength twice that of conventional steel rebars, making it a superior choice for sustainable construction.

3. A Webinar was arranged on February 10, 2026, titled "Intelligent Workflow: How AI Automates

Business Processes” presented by Muhammad Jawad Ali, Co-Founder of JFF Consultant & also the Board member of Disrupt Lab.

Speaker focused on how AI utilizes data patterns to drive real-time automation across Engineering, Quality, HR, and Sales & Marketing. A significant portion of the presentation was dedicated to computer vision, specifically its ability to transform visual inputs from work Sites and facilities into structured data that can trigger automated workflows and real-time corrective alerts.

The display of various engineering products and services were organized by suppliers and manufacturers before the start of seminar. The events reporting was covered by press and media channels in Pakistan.

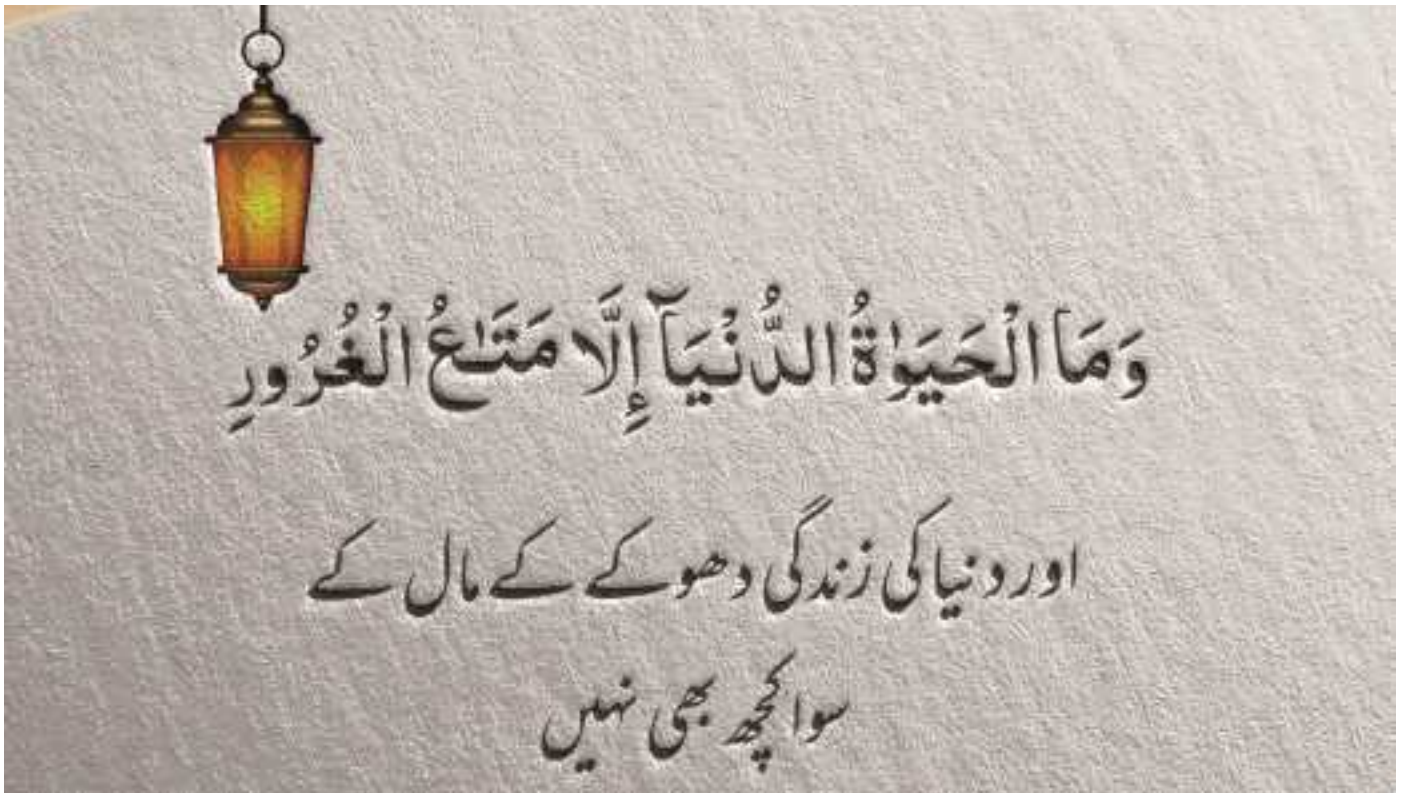
We appreciate support of our sponsors, fellow engineers and the Jordanian Engineers Association for their valuable contributions in our success.

IEP- SAC-EP is pleased to express its gratitude to the Kingdom of Saudi Arabia for its continued hospitality to the Pakistani engineering community. We are also thankful to his Excellency Mr. Ahmad Farooq, Pakistan Ambassador for his support and Patronage. We appreciate our Valued sponsors for helping us to achieve our goals.

Finally, we thank our IEP senior members, advisers and all our Council members for their dedicated volunteer work which they have been carrying out with enthusiasm and commitment.

Engr. Abdul Qadir Akbani

Chairman. IEP-SAC-EP, KSA





Engr. Abdul Qadir Akbani

Chairman

Eng'g. & Facility Development Mgr.
Al Qahtani Pipe Coating Industries
013 857 4150
050 385 2602
abdul.qadir@aqpci.net



Engr. Mohammad Abrar Shami
Vice Chairman

Project Manager - Smart Grid Projects
Saudi Electricity Co. (EOA)
013 858 6869
053 024 8100
mshami65@gmail.com



Engr. Nabeel Pervaiz Malik
General Secretary

Sector Manager
Aljomaih & Shell Lubricating Oil Co.
013 834 6421
050 054 3360
npmalik@hotmail.com



Engr. Ismet Amin Khawaja

Ex-Chairman
General Manager
Foundation Buildings Cont. Co. Ltd.
Tel: 013 864 6593 - 050 588 0792
iakhawaja@gmail.com



Engr. Akhtar Jawaaid Niazi

Executive Technical Manager
Intl. Contracting Resources Co.
Tel: 013 881 6466 - 050 389 3042
ajniazi_sa@yahoo.com



Engr. Ahmed Raza

Repair Technology Engineer
GE Vernova
GEMTEC - Dammam
Mob: 054 421 4861
engraraza@yahoo.com



Engr. Allah Bakhsh Nizami

Service Director - Saudi, Gulf & Pakistan
GE Vernova
GEMTEC - Dammam
Mob: 059 427 0786
engrnizami@gmail.com



Engr. Asad Zuberi
Operations Manager

Engie Solutions
Tel: 013 865 9765 - 0505 829 186
zuberiasad@gmail.com



Engr. Farooq Saeed, Dr.

Associate Prof. & Wind Energy Consultant
Imam Abdulrahman Bin Faisal
University
Mob: 050 798 4878
fsaeed@iau.edu.sa



Engr. Itlaque Ahmed Khan
Senior Mechanical Inspector
Technical Support Experts
Mob: 056 933 8154
itlaque@gmail.com



Engr. Khalid Hussain
General Manager
Intl. Contracting Resources Co.
Mob: 013 881 6466 - 050 384 7053
khalidmdqest@yahoo.com



Engr. Mohammad Azam Randhawa
General Manager
KMM Dammam
Mob: 050 686 7084
azam32925@gmail.com



Engr. Muhammad Anwar
Lead Bridge Engineer
Assystem Radicon Gulf Consult - Kentz
Mob: 054 619 2669
anwar_mce@hotmail.com



Engr. Mohammad Dawood Rattu
Manager (Business Development)
Powerzone Trading
Mob: 050 606 1255
drattu@yahoo.com



Engr. Mohammad Jawaad
Lead Structural Engineer
DAR Engineering International
Mob: 056 433 4637
jawaadhere@hotmail.com



Engr. Muhammad Munawar uz Zaman
General Manager
Jeddah Piles Company
Mob: -056 077 2962
munawarzaman2000@gmail.com



Engr. Pervez A. Naushahi
General Manager
Ground Engineering Contractors
Mob: 013 887 3577 - 050 580 9867
gec-kho@gecsaudi.com



Engr. Salman Zafar Tech. Support
Lead Engineer Al-Qahtani Pipe
Coating Industries Mob: 053-068-2807
mech.engr4221@gmail.com



Engr. Waleed Khan Sr. Elect.
Engineer Dhahran Aramco Mob: 050-
831-0455 waleekhan@gmail.com

SCENES FROM IEP-SAC Activities

EASTERN REGION

EP-Annual Seminar 18th November 2025



SCENES FROM IEP-SAC Activities

EASTERN REGION

EP-Annual Seminar 18th November 2025



SCENES FROM IEP-SAC Activities

EASTERN REGION

EP-Annual Seminar 18th November 2025



SCENES FROM IEP-SAC Activities

Webinar & Annual Family Picnic 10th February

EASTERN REGION



IEP-SAC Standing Committees 2025-26: Eastern Region

Organization	
Name of local council member	Role
Engr. Abdul Qadir Akbani	Chairman
Engr. Muhammad Abrar Shami	Vice Chairman
Engr. Nabeel Pervaiz Malik	General Secretary
Advisors	
Engr. Ismat Ameen Khawaja	Ex-Chairman & LC Member
Engr. Rizwan Ahmad	Ex-Chairman
Technical Seminar Committee	
Name of LC member	Role
Engr. Allah Baksh Nizami	Convenor
.Engr. Farooq Saeed, Dr	Co-Convenor
Engr. Mohammad Munawar Uz Zaman	Member
Engr. Muhammad Abrar Shami	Member
Engr. Dawood Rattu	Member
Engr. Waleed Khan	Member
Sponsorship & Advertisement Committee	
Name of LC member	Role
Engr. Mohammad Munawar Uz Zaman	Convener
Engr. Pervez A. Naushahi	Co-convener
Engr. Allah Baksh Nizami	Member
Engr. Akhtar Jawaaid Niazi	Member
Engr. Ahmad Raza	Member
Engr. Mohammad Azam Randhawa	Member
Reception & Event Management Committee	
Name of LC member	Role
Engr. Itlaque Ahmad Khan	Convener
Engr. Mohammad Jawaad	Co-convener

IEP-SAC Standing Committees 2025-26: Eastern Region

Engr. Akhtar Jawaaid Niazi	Member
Engr. Dawood Rattu	Member
Engr. Khalid Hussain	Member

IT & Media Committee

Name of LC member	Role
Engr. Mohammad Jawaad	Convener
Engr. Salman Zafar	Co-convener
Engr. Nabeel Pervaiz Malik	Member

Finance Committee

Name of LC Member	Role
Engr. Khalid Hussain	Convener
Engr. Itlaque Ahmad Khan	Co-convener
Engr. Abdul Qadir Akbani	Member

Publication Support Committee

Name of LC member	Role
Engr. Ahmad Raza	Convener
Engr. Mohammad Munawar Uz Zaman	Co-convener
.Engr. Farooq Saeed, Dr	Member
Engr. Mohammad Jawaad	Member

Membership Committee

Name of LC member	Role
Engr. Ahmad Raza	Convener
Engr. Khalid Hussain	Co-convener
Engr. Mohammad Jawaad	Member
Engr. Salman Zafar	Member
Engr. Mohammad Munawar Uz Zaman	Member
Engr. Waleed Khan	Member



AURCO ATTIQ UR REHMAN CONTRACTING CO

"Your Partner in Construction"

OUR SERVICE:

- Temporary Site Camps and Offices
- Fencing Solutions
- Warehouses
- Early Civil Works and Site Preparation
- Prefabricated Buildings
- Equipment Rental
- Facilities Management
- Road works



CONTACT US:

Tel: +966 13 894 4304
Fax: +966 13 896 1712
Email: info@aurcontracting.com
P.O. Box 585, Al-Khobar 34427-Jarir Plaza - K.S. A

AMONG THE WORLD'S LARGEST MANUFACTURERS OF PEB STEEL BUILDINGS

Jeddah Plant, KSA
Tel: (966) 12 6370036



KSA Sales Office

DAMMAM - Tel: (966) 13 8331678
Email: kirbysaudi.dam@alghanim.com
RIYADH - Tel: (966) 11 2531898
Email: kirbysaudi.riy@alghanim.com
JEDDAH - Tel: (966) 12 6370036
Email: kirbysaudi.jed@alghanim.com

Middle East & Africa Corporate Office & Kuwait Plant

Kirby Building Systems - Kuwait
P.O.Box 23933, Safat 13100 Kuwait,
Tel: (965) 23262800
(965) 23261213



Kirby
BUILDING SYSTEMS
COMMITTED TO EXCELLENCE

A MEMBER OF
Alghanim
INDUSTRIES

www.kirbyinternational.com



OVERSEAS INTERIOR

Our Servicing Works

- Curtain walls
- Handrail
- Glass works
- WPC doors
- Steel Doors
- Aluminum windows

Contact Us:

Mr. Umail Abdul Rauf

☎ +966 56 433 3537

✉ umair@overseasinterior.com

Mr. Kamal Sabil

☎ +966 56 851 9999



Riyadh, Kingdom of Saudi Arabia





RECOMMENDATIONS FOR PREVENTING DISORDERS DUE TO “DELAYED ETTRINGITE FORMATION”. A CASE STUDY IN K.S.A

(By: Engr. S.M.H.Kirmani, Former Chairman of IEP-SAC, Former Vice-President in Saudi Technical Ltd. Riyadh)

ABSTRACT:

This paper describes the causes of “Delayed Ettringite Formation” (DEF), its effects and safety precautions in design and execution of reinforced concrete structures involving mass concrete. The paper also presents a case study in the Kingdom of Saudi Arabia and results are discussed which could be a guideline, for many civil & structural engineers, in design and execution of important projects.

INTRODUCTION:

The Delayed Ettringite Formation (DEF) is a cause of disorders capable of damaging concrete

structures quite severely. The phenomenon of Delayed Ettringite Formation (DEF) actually stems from the delayed formation of a mineral called “ettringite”. Its chemical formation is $3\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot 3\text{CaSO}_4 \cdot 32\text{H}_2\text{O}$. [1]

- The time - delayed formation of ettringite is capable of causing an expansion. DEF pertains solely to concrete that is exposed during the early age to heating in excess of 65°C . Beyond this temperature, the primary ettringite does not form during cement hydration reactions and/or becomes decomposed. The source of sulphate ions would therefore be internal, which means that these ions are generated due to the absence or decomposition of primary ettringite. After

returning to ambient temperature and in presence of humidity, ettringite is able to form or reform, at which point it is capable of generating swelling under certain conditions. Such a phenomenon can arise for two types of concrete: [3, 4]

- Heat-treated concrete and
- Cast-in-place concrete in critical structural elements, i.e. "concrete elements whose heat release is only marginally discharged to the exterior, which leads to a sizable rise in concrete temperature".

Precautions are adopted corresponding to the levels of prevention. The prevention principle basically relies on limiting concrete heating, as characterized by the maximum temperature. Tmaximum capable of being reached inside the structure and, if applicable, by the length of time a high temperature can be maintained. [8]

For the category of structures like nuclear power plant, dams, tunnels, railroad, exceptional bridges, viaducts and V.V.I.P buildings, the level of prevention is recommended as following:

1) The maximum temperature reached within the concrete must remain below 65°C.

2) If the maximum temperature reached within the concrete cannot be kept below 65°C, then it must never exceed 75°C and the following conditions must be satisfied:

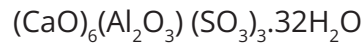
- Use of low exothermic cement, Type V ASTM or type CEM-I and CEM- II/A in compliance with NFP15-319 (ES).
- Validation of the concrete mix design by an independent laboratory with expert credentials in DEF.

This paper identifies the causes of "Delayed Ettringite Formation" (DEF), its effects and safety precautions to significantly mitigate the bad effects. A report of the case study is also included in this paper which provides some useful information

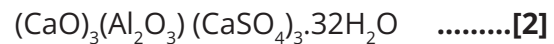
for the interested structural designers and builders.

Ettringite:

Ettringite is a hexacalcium aluminate tri-sulphate, of general formula:



Or



Ettringite is found in hydrated Portland cement system as a result of the reaction of calcium aluminate with calcium sulphate, both present in Portland cement [1]. Ettringite is named after Ettringen, Germany, the place where it was discovered in concrete in 1987.

In the cement system, the presence of ettringite depends on the ratio of calcium sulphate to tri-calcium aluminate (Ca_3A). When this ratio is low, ettringite forms during early hydration and then converts to the calcium aluminate mono-sulphate, AFm phase or ($\text{Al}_2\text{O}_3 - \text{Fe}_2\text{O}_3$ - mono). When the ratio is intermediate, only a portion of the ettringite converts to AFm and both can coexist, while ettringite is unlikely to convert to AFm at high ratios. AFm stands for "Alumina, Ferrite, Mono-substitution" (relative to AFt - Alumina, Ferrite, tri-substitution/ettringite).

Briefly the principal parameters herein are water, temperature and its duration of application, the sulphate and aluminate contents of cement, and lastly the alkali content of concrete.

- Water and humidity:

One long standing observation, both in laboratory and on actual structures, involves the fundamental role played by water as reaction develops. Water is a reactive medium essential to producing the reaction, it is as much involved in the transfer process as the actual formation of reaction products. DEF primarily affects the parts of the structures either in contact with

water (submerged zone, tidal zone) or subjected to water inflow (water proofing defects, absence of drainage etc.) or perhaps exposed to a high moisture rate.

- Temperature and its duration of application:

The maximum temperature reached as well as the amount of time a high temperature is maintained both influence the risk of DEF. Laboratory experiments have revealed that if temperature exceeds 65 °C and if the either key parameters were present, a situation would be encountered in which DEF is typically able to develop.

- Sulphate and aluminate contents of the cement:

Sulphate and aluminates are directly involved in the reactive mechanism that serves to form ettringite, which is composed of a hydrated calcium tri- sulfoaluminate. Consequently, DEF can only arise if the cement used contains a high quantity of both tri-calcium aluminates ($3\text{CaOAl}_2\text{O}_3$, or Ca_3A) and sulphates (SO_3).

- Alkali content of the concrete:

The role of this content on ettringite solubility is well documented. Ettringite is more highly soluble at higher alkalities. As a result of ettringite solubility variation with temperature, a strong interaction exists between these two parameters during the DEF process. With all other parameters being the same, a drop in alkali-content serves to increase the critical temperature values.

Various Forms of Ettringite:

At present three types of ettringite capable of coexisting in a given concrete sample can be identified as following. The names assigned are those proposed by the France Association of Civil Engineering (AFGC), [2]

- Primary formation of ettringite, which does not cause any expansion.

- Secondary formation of ettringite, which might cause expansion.

- Delayed formation of ettringite, subsequent to a temperature rise to about 70° C imposed on the concrete at an early age, or from internal temperature rise due to the heat evolved during hydration, which in turn can cause expansion in concrete. The DEF can occur because the high temperature decomposes any initial ettringite formed and holds the sulphate and alumina tightly in the calcium silicate hydrate (C-S-H) gel of the cement paste. The normal formation of the ettringite is thus impeded. [1, 7]

In the presence of moisture, sulphate and alumina desorb from the confines of the C-H-S to form ettringite in cooled and hydrant concrete. After months and or years of desorption, ettringite forms in confined locations within the paste. Since the concrete is rigid and if there are insufficient voids to accommodate the increases in ettringite volume, expansion and cracks can occur. In addition, some of the initial ettringite formed before heating may be converted to monosulfoaluminate at high temperature and upon cooling, revert back to ettringite. Because ettringite takes up more space than monosulfoduminate from which it forms, the transformation is an expansive reaction. It is evident that DEF is due to internal sulphate attack. An external source of sulphur is not required for this type of early Portland cement concrete (PCC) deterioration to occur.

Diagnosis:

The type of ettringite formed can appear to be crystalline, but when analyzed by quantitative X-ray diffraction (QXRD) it is amorphous. In some cases, crystalline ettringite can also form. Extreme care must be exercised when quantifying and qualifying ettringite in concrete when using the X-ray diffractometer. Some experts claim that, if it cannot be identified by QXRD, then it is not ettringite. But what if this ettringite is a gel (or proto-crystalline), similar to the relationship of

silica gel to quartz.

At Iowa State University (ISU) in Ames, Iowa, the X-ray diffractometer was used in an attempt to identify this material (ettringite gel) that was accumulating in the air voids of early deteriorated Portland cement concrete pavements (PCCP). The ettringite gel material (fibrous and like a thick paste) was removed from the air voids and put on a quartz sample holder. A one hour run, concentrating on the zone where the ettringite peaks should occur, showed only a halo associated with amorphous material.

Later a PCCP researcher from Minnesota used a Scanning Electron Microscope (SEM) and diffractometer to analyze a 20 years old severely deteriorated PCC. From the fractured surface of the concrete, hard balls of ettringite were removed. These hard balls of ettringite were from air voids over 100 microns in diameter, some of the ettringite balls were clear and some were opaque. The clear as well as opaque ettringite balls were pulverized and analyzed by XRD. Both tests showed the material to be amorphous. [3, 4]

Briefly DEF is diagnosed primarily by four main features:

- Presence of gaps completely encircling aggregates.
Wider gaps around large aggregates than a round small aggregate.
- Absence of external sulphate source.
- High temperature heat curing history or high exothermic temperature around 70°C due to hydration of mass concrete.

Prevention: The purpose of these recommendations is to provide precautionary measures for the placement and design of a concrete, so as to resist adequately the risks arising due to delayed ettringite formation (DEF) throughout the lifetime of the structure. The level of prevention depends on two parameters: [1, 5]

1. Category of the structure or structural part, and
2. Exposure class of the structure part.

Category of structure or structural part:

Category classification#	Limit of effects, acceptable
Category #1	Small or acceptable consequences.
Category #2	Rather severe consequences
Category # 3	Unacceptable or nearly unacceptable consequences

Exposure classes for a structure with respect to DEF:

Exposure class designation	Environmental description
XH1	Dry or moderate humidity.
XH2	Alternate humidity and dryness. High rate of humidity.
XH3	In long lasting contact with water: state of permanent immersion, water stagnation at the surface, tidal zone.

Category of Structure or it's part.



1. Level of prevention:

Four levels of prevention are recommended, as designated respectively by the letter codes As, Bs, Cs and Ds. A level of prevention is determined on the basis of both the structure category and XH

exposure class applicable to the particular part of the structure. Responsibility for selecting these different levels of prevention lies with the project owner or the design consultant.

Exposure class of the structural part\ Structure category	XH1	XH2	XH3
Category #1	As	As	As
Category #2	As	Bs	Cs
Category # 3	As	Cs	Ds

Exposure class of the Structure

Precautions:

Each of the four levels of prevention As, Bs, Cs and Ds correspond with the type of precaution to be implemented. The prevention principle basically relies on limiting concrete heating, as characterized by the maximum temperature T_{max} capable of being reached inside the structure and, if applicable, by the length of time a high temperature can be maintained. [1, 6, 7]

- Level of prevention: As
 - T_{max} must remain less than 85°C.
 - In case of controlled heat treatment, T_{max} . Less than or equal to 90°C provided that duration during which the temperature remains above 85°C is limited to 4 hours.
- Level of prevention: Bs
 - The max. temperature reached within the concrete must remain below 75°C.
 - In case T_{max} , within the concrete > 75°C. It must never exceed 85°C, and duration above 75°C must not exceed 4 hours and heat treatment is controlled.
- Level of prevention: Cs
 - T_{max} with the concrete must remain below 70°C.
 - If T_{max} within the concrete is unable to remain below 70°C, then it must never exceed 80°C and heat treatment is controlled.

- Level of prevention Ds
 - T_{max} within the concrete must remain below 65°C.
 - If the max. temperature within the concrete is unable to remain below 65°C. Then it must never exceed 75°C and the two following conditions must be satisfied:
 - Use low exothermic cement, like CEMI or CEMII/A complying to NF P15-319 (ES) or type V ASTM cement.
 - Validation of the concrete mix design by an independent laboratory credential in DEF.

Provisions related to concrete mix design:

The choice of type of cement and eventual addition by the prescriber must incorporate the influence of these materials on concrete heating. The selected binder must in fact be the least exothermic possible, while remaining compatible both with specifications for exposure class and with the early age concrete strength requirements. Similarly binder concentration may be minimized while still meeting the requirements of workability, strength and durability.

Provision related to concrete mixing and



transportation:

It would be worthwhile to review a key parameter involved to limit the concrete heating temperature called "concrete heat, capacity" or "specific heat". The specific heat is defined as the quantity of heat needed to be input to a unit mass

of concrete to raise its temperature by 1°C. This capacity depends on the actual heat capacity of each of the individual concrete components. The following table provides the order of magnitude of heat capacities experienced when producing one cubic meter of concrete.

Components	Mass (kg.)	Mass Heat Capacity: kJ/kg.K	Component Heat Capacity (kJ/K)
Coarse limestone aggregate (dry)	1,050	0.84	882
Siliceous limestone sand (dry)	750	0.80	600
Cement	400	0.75	300
Total water	200	4.18	836
Total			2,618

Level of prevention. Hopefully it meets your needs Best Regards

This table shows that due to the presence of large quantities of aggregates (coarse + fine), they exert considerable influence on mix in terms of heat capacity. This finding signifies that a change in aggregate temperature will cause the most significant temperature change at the level of the entire mix. The above table also demonstrates that mixing water plays a major role in the ultimate mix temperature and that substituting this water by ice could trigger a sizeable decrease in heat content of the mix. Concrete temperature upon setting must be controlled and can be lowered by several methods such as:

- Use of cold or refrigerated water.
- Aggregate cooling (spraying water on the coarse aggregates).
- Protection of aggregate stocks from exposure to the sun.
- Substitution of ice for a portion of mixing water.

The technique of injecting liquid nitrogen into

the concrete mixing plant or mobile mixer may prove advantageous; however it is not normally used due to its relatively high cost and technical sophistication.

A CASE STUDY:

The case under study was a Raft foundation (in fact a combined pile cap), 2.5 meter thick and plan area equal to 3800 square meters, the second largest Raft foundation in the history of KSA. The total volume of concrete involved was 9500 cubic meters.

WHAT WE DID:

Prior to actual execution of the referred Raft foundation, a trial was carried out on a smaller size Raft; 2.5 meter thick foundation with a volume of 250 cubic meters. This pour was well insulated and temperature build-up was monitored with thermocouples. The main goals of this trial can be summarized as follows:

- I. To understand the underlying mechanism behind ASR (Alkali-silica reaction) and DEF.
- II. Review available test methods for aggregate reactivity and for preventive measures and recommended test method(s) to prevent ASR and/or DEF in new concrete.
- III. Develop specification and guidelines to prevent ASR and DEF in new concrete.
- IV. Identify and implement strategies for preventing ASR and/or DEF, with emphasis on prudent use of supplementary cementing materials (SCMs).
- V. Develop protocol for evaluating the cause, extent, and future potential or damage caused by ASR and/or DEF in existing concrete structures.
- VI. Transfer knowledge and experience gained from this project to others.

RESULTS EVALUATED:

This project evaluated the parameters that have the most profound impact on DEF induced expansion and the means available for preventing such distress in new concrete. Some of the key findings are summarized as follows:

- Preventing internal concrete temperature from exceeding 70°C is effective in preventing DEF. No Mixture suffered from excessive expansion or cracking when temperatures were kept below this threshold value.
- When concrete mixtures were subjected to temperatures in excess of 70°C, the incorporation of various SCMs (supplementary cementing materials) was found to be effective in preventing subsequent DEF induced expansion.
- By adopting a pre-cooling system (using crushed ice in mixing concrete in lieu of water and by spraying chilled water on gravel), the temperature of mixed concrete at placement was maintained between 15 to 30°C.
- A super plasticizer (Like CONPLAS 423) was used to delay the setting time of the cement.
- Max. differential temperature between the surface

- and the core of the Raft remained below 20°C.
- Insulation was provided to reduce the cooling rate of the top surface and the outer faces. Insulation was periodically removed according to a strategy designed to reduce heat from the system without introducing too large a temperature gradient. The thickness of the insulation was 5 cm.
 - Uninterrupted continuous supply of mixed concrete was ensured.
 - An effective control and command system was provided.

CASE SUMMARY REPORT:

1. Total quantity of concrete poured = 9500 cubic meters.
 - ii) Total ice used for pre-cooling = 376 Tons.
 - iii) Mix design for strength = 40 MPa;
For one cubic meters concrete:
 - Gravel $\frac{3}{4}$ " = 579 kg.
 - Gravel $\frac{1}{2}$ " = 347 kg.
 - Gravel $\frac{3}{8}$ " = 232 kg.
 - Sand = 658 kg.
 - Cement type V = 425 kg.
 - Micro silica 10% = 45 kg.
 - Free water = 132 l.
 - Ice = 40 kg.
 - Water cement ratio = 0.377
 - Super plasticiser = 2 l.
 - Other additives = 7 l.

iv) Equipment used:

- 110 concrete transit trucks ensuring uninterrupted supply.
- Concrete pumps = 9 Nos. (2 standby)
- Tower cranes = 3 Nos
- Thermo couples: One set of five nos. (at depth 0.1m, 0.5m, 1.0m, 1.5m & 2.0m) for every 500 square meters. The total area was divided into five zones.
- No. Of batching plants: 3 Nos. at different locations.
- 608 concrete cylinders were made for testing.

v) Control and command:

A very effective control and command system was provided to monitor the quality of concrete, continuous pumping without providing any cold joints and above all monitoring and control of temperature.

vi) Traffic control:

Traffic control management was designed to ensure the reliability of mobilization of about 50 trucks per hour.

Result:

Temperature graphs and their analysis confirm the estimated Δt (Temperature difference between the surface and core of the Raft) remained $\leq 20^{\circ}\text{C}$. All safety parameters were achieved and the result was within the designed parameters. See Figures 1 to 4 at the end.

CONCLUSIONS:

Delayed Ettringite Formation (DEF), which is due to internal sulphate attack of the cement, is the major source of damaging concrete structure during its early age if exposed to heating in excess of 65°C or if exothermic temperature due to hydration of mass concrete is more than 70°C . Based on the category and importance of the structure, various parameters are recommended for prevention of DEF. A case study in KSA is presented with the analysis of the results obtained at site. The evaluated parameters, which have the most profound impact on DEF induced damage in mass concrete and steps to mitigate the damage in concrete at early age are described.

ABBREVIATIONS:

1. Aft for Alumina Ferric oxide tri-sulphate ($\text{Al}_2\text{O}_3\text{-Fe}_2\text{O}_3\text{-tri}$).
2. AFm: for "Alumina, Ferric oxide , mono-sulphate" ($\text{Al}_2\text{O}_3\text{-Fe}_2\text{O}_3\text{-mono}$).

3. PCC: Portland Cement Concrete.
4. QXRD: Qualitative X-ray diffraction.
5. TGA: Thermogravimetric analysis.
6. Ca3A: Tri-calcium aluminate.

REFERENCES:

[1] Recommendations for preventing disorders due to Delayed Ettringite Formation, May 2009. "Laboratoire Central Des Ponts et Chaussées, 58 bd Lefebvre, F75732, Paris Cedex 15".

[2] Ettringite – Encyclopaedia, Wikipedia.

[3] Delayed Ettringite Reaction (DEF): Observations and comments by: Wendell Dubberke Edition 04/06/1999. Hosted by www.anglefire.com.

[4] Concrete Experts/International Gongehusvej 242, DK-2950, Vedback, Denmark.

[5] Internal sulphate Attack and Delayed Ettringite Formation by K. Scrivener and J. Skalny (page 316).

[6] Lerch, William, Effect of SO_3 content of cement on durability of concrete, R & D serial no. 0285 Portland Cement Association, 1945.

[7] Day, Robert L, The effect of secondary Ettringite Formation on the durability of concrete – A literature analysis, RD 108, Portland Cement Association 1992.

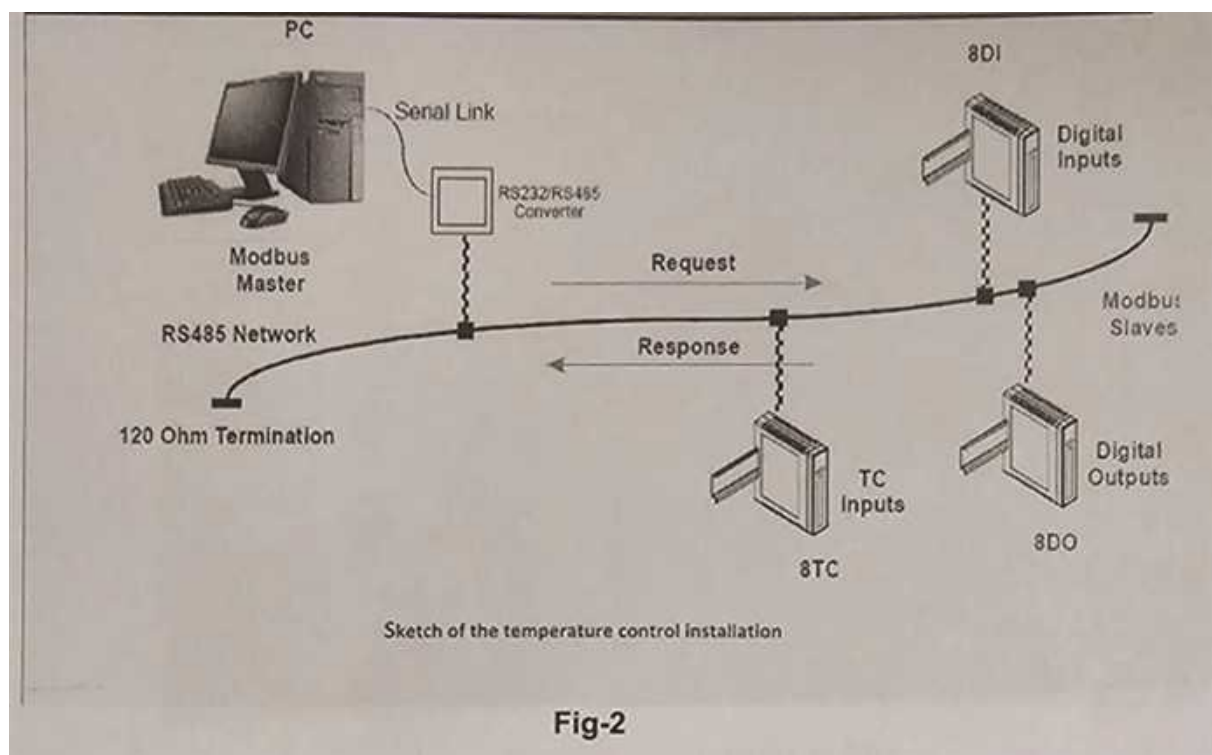
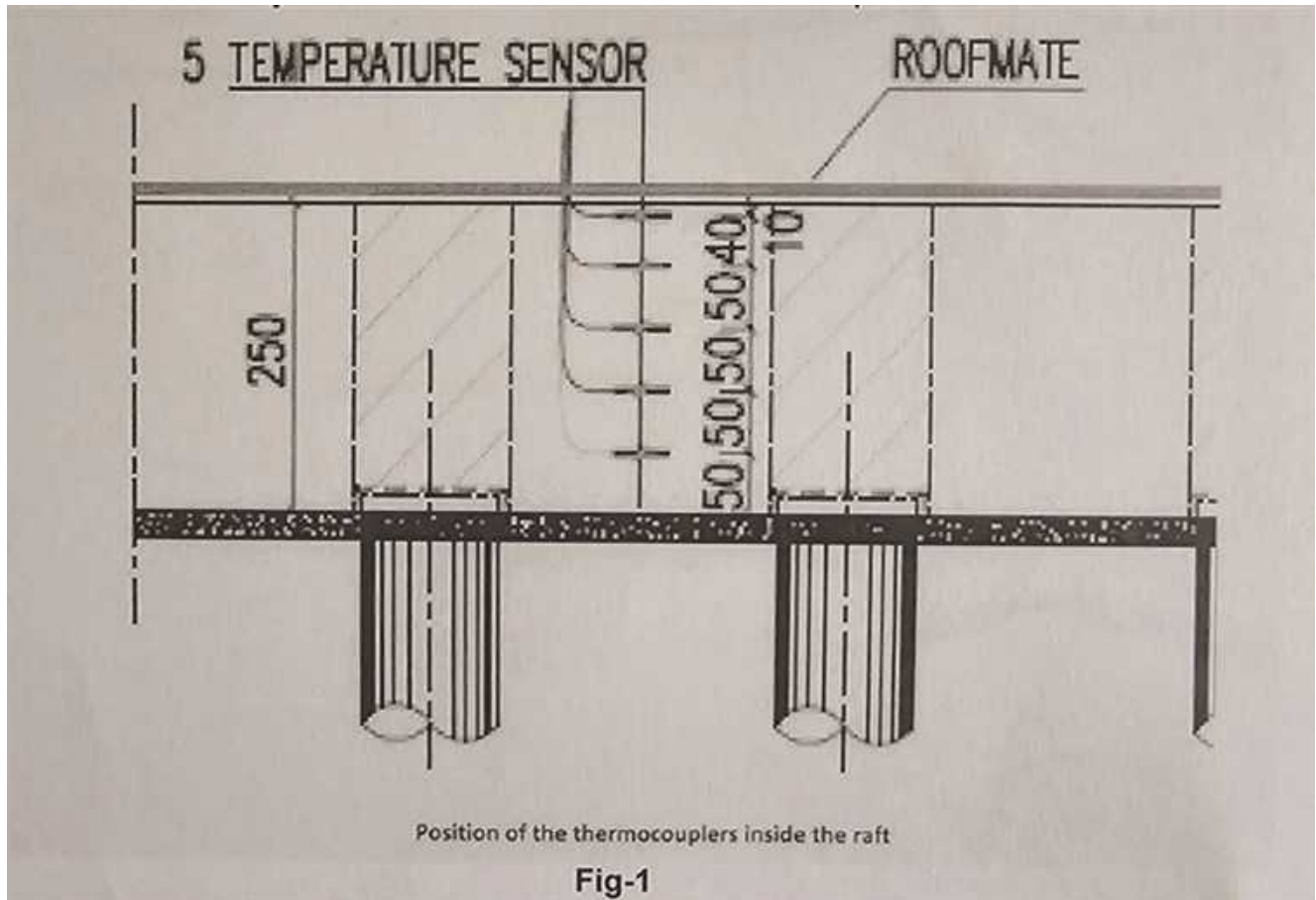
DISCLAIMER:

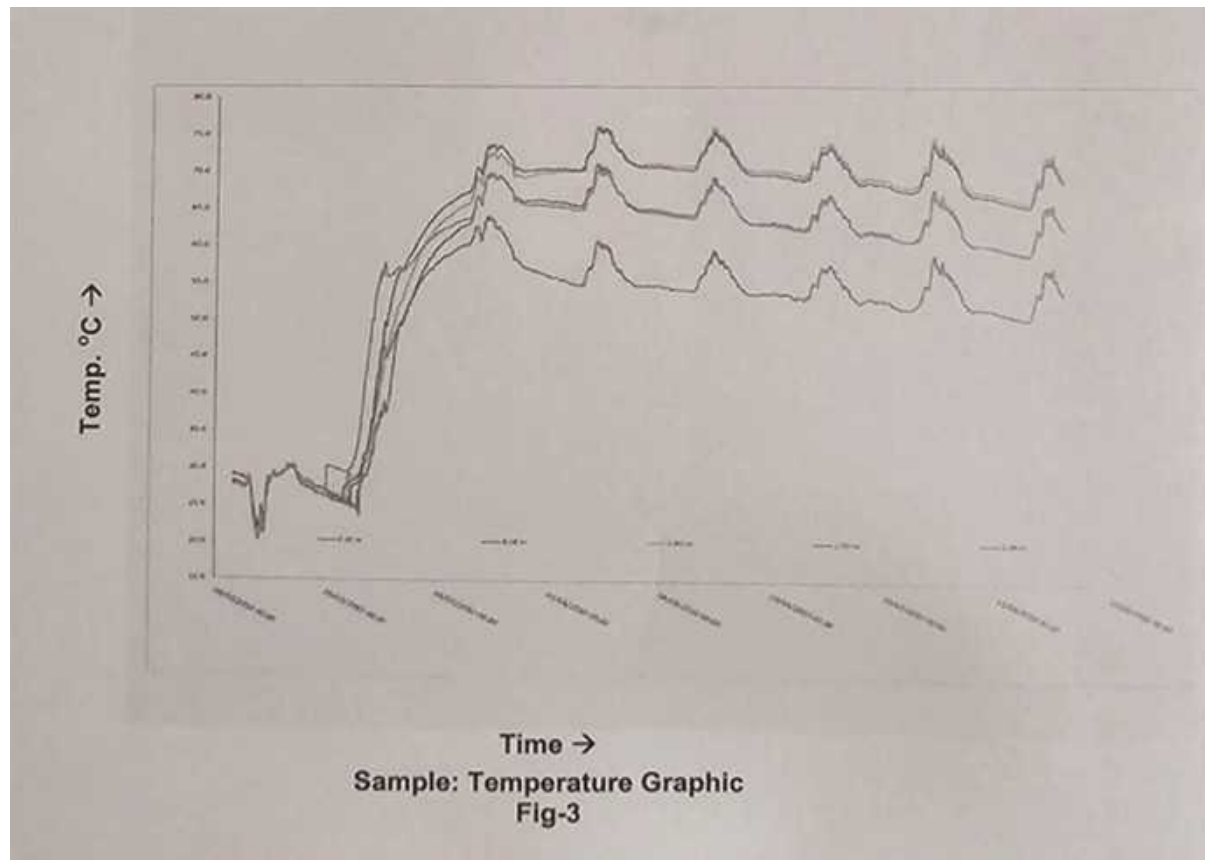
The contents of this article reflect the views of the author and it does not necessarily reflect the policy of any organization. This report does not constitute a standard, specification or regulation nor is it intended for any construction document. This is solely for information and knowledge of engineers.

Levels of thermocouple installation

In each zone we set 5 sensors at different depths (0.10 m; 0.05 m; 1.00 m; 1.50 m; 2.00 m)

Each sensor was fixed perpendicular to the concrete top surface and identified by a ticket to indicate the zone and depth of each one.





About the author:



Eng. Syed Mubashir Hussain Kirmani is a Civil Engineer, having about 59 years of experience in diversified fields including soil and foundation engineering, structural engineering, Roads and Motorways, Public Health Eng., Water and Waste Water Eng., Fire Suppression System and Environmental Engineering.

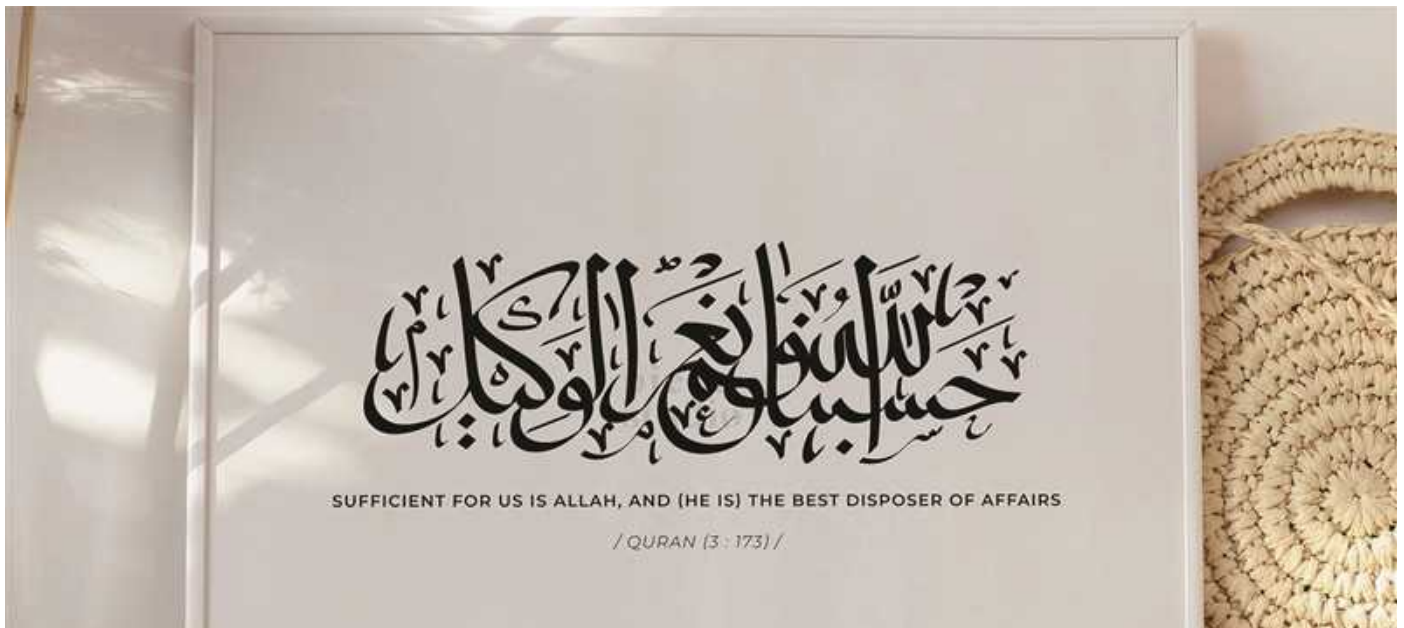
Eng. Kirmani obtained B.sc (Honors) degree with second position in applied mathematics with Astronomy, applied Physics and environmental science in 1963 from University of Karachi. He obtained B.E (Civil Eng.) Degree from NED Engineering College Karachi in 1967. Post-graduation in Eng. management from IBA Karachi in 1971. He made several post graduate studies in diversified fields of Civil and Environmental Engineering. He obtained professional excellence

award from the institute of Environmental Science USA. He is a fellow and active member of several engineering societies.

Eng. Kirmani served in a reputable consulting organization in KSA for about 50 years in the capacity of Chief Engineer as well as Head of Depts. of structure engineering, VRD and Eng. Management. He achieved a high level of competence in these position. During this tenure, Eng. Kirmani has on his credit the design and engineering management of several prestigious and Royal projects in KSA as well as outside including Spain, Morocco, Geneva, Paris, London and Cairo etc. At present he is vice-president in Saudi Technical Contracting Co. Limited. Riyadh.

Eng. Kirmani is author of more than 35 technical papers published in various Eng. journals and made presentation in several seminars on diversified topics during the past 32 years.

Eng. Kirmani is former General Secretary and Chairman of IEP-SAC for more than 12 years. At present he is an advisor to IEP-SAC.





Performance Evaluation of Concrete using Water Reducing and Retarding Admixture

Waqar Ahmad Malik

ABSTRACT

This study investigates the performance of a Type D water reducing and retarding admixture (Chemplast PR-150, Modified Lignosulphonate-based) on normal-strength concrete under Pakistani environmental conditions. A concrete mix designed for 4,000 psi (27 MPa) cylindrical strength at a water-to-cement ratio of 0.44 was tested at three curing temperatures — 20°C, 40°C, and 60°C — across seven admixture dosages ranging from 0% to 0.8% by weight of cement. Compressive strength (3, 7, 28, and 56 days), flexural strength, slump, and formwork deflection were evaluated on 252 cube and 33 beam specimens. Results indicate

that concrete cured at 40°C consistently yields the highest early and long-term compressive strength across all dosages. Admixture addition significantly increased workability, with slump reaching 200 mm at dosages of 0.5% and above. Flexural strength was highest at normal temperature with low dosages, while formwork deflection increased proportionally with admixture dosage. The optimum compressive performance was achieved at 0.8% dosage under moderately high temperature conditions, the optimum flexural performance at 0.4% dosage.

Keywords: Concrete admixtures; Type D admixture; water reducing and retarding admixture; hot weather concreting; compressive strength; flexural strength;

1. INTRODUCTION

Chemical admixtures are widely used in the construction industry to modify the fresh and hardened properties of concrete. Among these, water reducing and retarding admixtures — classified as Type D under ASTM C 494 — are increasingly adopted in hot climates to counteract the accelerating effect of elevated temperatures on cement hydration, reduce water demand, and extend concrete workability during transport, placement, and compaction [1].

In Pakistan, the use of Type D admixtures has grown substantially due to extreme summer temperatures that can compromise both workability and long-term concrete strength. However, field observations have documented instances where use of such admixtures produced unsatisfactory results, including the appearance of hairline alligator-type cracks and below-specification compressive and flexural strengths. While several international studies have evaluated water reducing and retarding admixtures [2, 3, 4], no prior study had specifically assessed their performance using local Pakistani materials — including Lawrence-pur sand, Margalla limestone aggregate, and locally available Portland cement — under Pakistani climate conditions.

This paper presents the findings of a controlled experimental study that systematically evaluates the effect of a Modified Lignosulphonate-based Type D admixture on concrete workability, compressive strength, flexural strength, and formwork deflection across a range of dosages and curing temperatures representative of Pakistan's climate zones. The objective is to establish evidence-based dosage recommendations for practitioners operating in hot-weather concreting environments.

2. MATERIALS AND METHODS

2.1 Materials

All materials were sourced locally. Fine aggregate consisted of Lawrence-pur natural sand conforming to ASTM C 33 (AASHTO M 6) with a fineness modulus of 1.92. Coarse aggregate was crushed Margalla limestone in two size fractions (both passing 25 mm), blended at 50% each. Ordinary Portland cement (Askari brand) was used with the following properties: initial setting time 1 hr 30 min; final setting time 3 hr 18 min; fineness 3,207 cm²/g; 28-day compressive strength 6,036 psi. Mixing water was municipal tap water (pH 7.5–7.8; total dissolved solids 300–342 mg/L; chlorides 18–50 mg/L).

The admixture used was Chem-plast PR-150, a Modified Lignosulphonate-based water reducing and retarding admixture marketed by SEIKA Chemicals (density $\approx$ 1.17 kg/L at 25°C; nil chloride content per EN 934). Seven dosage levels were tested: 0% (control), 0.3%, 0.4%, 0.5%, 0.6%, 0.7%, and 0.8% by weight of cement.

2.2 Mix Design

The concrete mix was designed for a target cylindrical compressive strength of 4,000 psi (27 MPa) at 28 days. Trial mixes using local materials established a final mix ratio of 1:1.3:2.6 (cement: fine aggregate: coarse aggregate by volume) at a water-to-cement ratio of 0.44. The design slump was 75–100 mm (3–4 inches). The mix produced 2,901 psi at 3 days, 4,153 psi at 7 days, and 5,286 psi at 28 days without admixture at a slump of 84 mm.

2.3 Experimental Programme

Three curing temperatures were selected based on Pakistani climate conditions: 20°C (normal), 40°C (moderately high), and 60°C (extreme). Concrete samples were maintained at these temperatures for the first 24 hours after casting. Formwork, aggregates, and water were pre-conditioned to the target temperature before mixing. An oven was used to control and maintain temperature.

A total of 252 cube specimens (150 mm $\times$ 150 mm $\times$ 150 mm) were cast in groups of three per admixture dosage per temperature, tested at 3,

7, 28, and 56 days for compressive strength. An additional 33 beam specimens (150 mm × 150 mm × 530 mm) were cast for flexural strength testing at normal temperature. Formwork deflection was recorded for a subset of four dosage levels at 20°C using 150 mm × 150 mm × 1,200 mm beam-shaped steel molds with a strain gauge assembly at midspan.

2.4 Testing Standards

Slump was measured per ASTM C 143. Compressive strength was determined per standard cube-testing procedures. Flexural strength (modulus of rupture) was measured by third-point loading per ASTM C 78. Formwork deflection readings were recorded at 1-minute intervals initially, with the interval extended as concrete approached initial set.

3. RESULTS AND DISCUSSION

3.1 Workability (Slump)

Table 1 presents slump results for all mix combinations. Without admixture, slump ranged from 54 mm (60°C) to 65 mm (20°C), confirming the well-documented inverse relationship between temperature and workability [5]. The addition of Chem-plast PR-150 dramatically improved slump. At 0.3% dosage, slump increased to 162–175 mm across temperatures. Saturation was reached at 0.5% and above, with all mixes recording the maximum measurable slump of 200 mm irrespective of temperature.

A consistent temperature effect was observed: at the same admixture dosage, slump was highest at 20°C and decreased with increasing temperature. This confirms that temperature must be factored into target slump selection for site-specific concrete specifications in hot climates refer table 1 & figure 1.

Table 1. Concrete slump recorded for each mix combination.

Admixture Dosage	(Slump at 20°C (mm	(Slump at 40°C (mm	(Slump at 60°C (mm
No Admixture	65	62	54
0.30%	175	165	162
0.40%	197	183	194
0.50%	200	200	200
0.60%	200	200	200
0.70%	200	200	200
0.80%	200	200	200

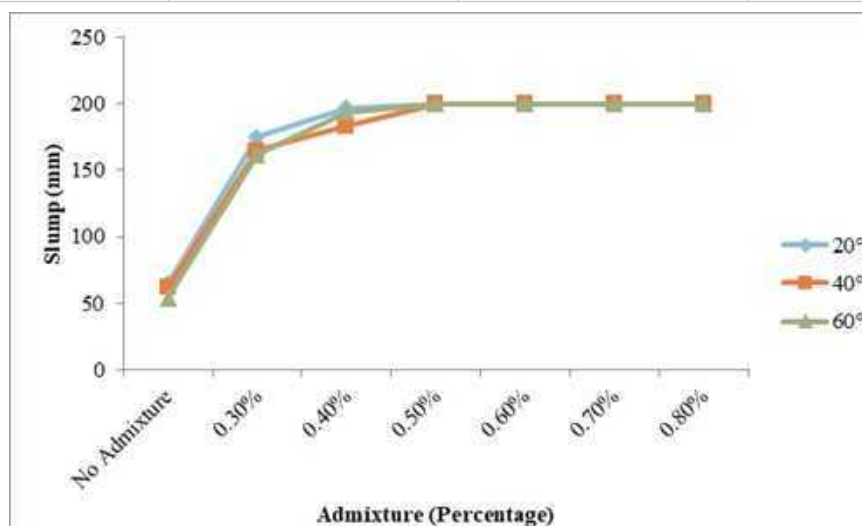


Figure 1. Graph of slump verses admixture dosage.

3.2 Compressive Strength

Table 2 summarises average compressive strength results. At all testing ages, specimens cured at 40°C consistently yielded the highest compressive strength across all dosage levels. This behaviour is attributable to the accelerated early hydration at moderately elevated temperatures coupled with the retarding effect of the admixture providing sufficient time for adequate compaction and hydration product formation before set.

At 3 days, the 40°C specimens outperformed 20°C and 60°C specimens by a clear margin at all dosages. For example, at 0.5% dosage, 3-day strength reached 4,044 psi at 40°C versus 3,498 psi at 20°C and 2,654 psi at 60°C. At 28 days, this advantage was maintained, though the strength

differential narrowed. Specimens at 60°C showed lower early strength but caught up at later ages (28 and 56 days), surpassing 20°C specimens particularly at higher dosages — a result consistent with the delayed but ultimately more complete hydration at very high initial temperatures once the thermal shock period had passed.

Admixture dosage had a clear positive effect on compressive strength across all conditions. Strength increased progressively with dosage from 0% to 0.8% at all temperatures and testing ages. At 56 days, the 0.8% dosage at 40°C produced 5,964 psi — approximately 9% higher than the control (no admixture) at the same temperature, refer table 2.

Table 2. Average compressive strength results (psi) at all ages and temperatures.

Temp for first 24 hours		20° C	40° C	60° C
Admixture Dosage	Testing age	Average comp. strength (psi)	Average comp. strength (psi)	Average comp. strength (psi)
No Admixture	3 Days	2608	3763	2779
	7 Days	3560	4153	3856
	28 Days	4434	4637	4590
	56 Days	5309	5480	5402
0.30%	3 Days	2935	3966	2530
	7 Days	3779	4372	3747
	28 Days	4497	4684	4653
	56 Days	5402	5559	5511
0.40%	3 Days	3154	3997	2623
	7 Days	3872	4434	3888
	28 Days	4575	4778	4809
	56 Days	5480	5652	5527



Temp for first 24 hours		20° C	40° C	60° C
0.50%	3 Days	3498	4044	2654
	7 Days	4012	4528	4091
	28 Days	4715	4856	4903
	56 Days	5574	5761	5621
0.60%	3 Days	3591	3997	2904
	7 Days	4153	4606	4278
	28 Days	4809	4856	5059
	56 Days	5683	5840	5652
0.70%	3 Days	3716	4278	3123
	7 Days	4262	4700	4162
	28 Days	4934	4934	5105
	56 Days	5777	5886	5761
0.80%	3 Days	3872	4278	3294
	7 Days	4419	4778	4309
	28 Days	5012	5090	5137
	56 Days	5933	5964	5917

3.3 Flexural Strength

Flexural strength testing was conducted at 20°C for all dosages. Without admixture, the modulus of rupture was 2,698 psi. Flexural strength exhibited a less consistent trend with admixture dosage compared to compressive strength. The highest flexural performance (3,147 psi) was recorded at 0.3% dosage. At 0.40% dosage, flexural strength remained comparable across all three temperatures (2,248 psi), suggesting this dosage provides the most thermally stable flexural

response — relevant for pavement and slab-on-grade applications where transverse cracking due to temperature differentials is a concern.

At higher temperatures (40°C and 60°C), lower admixture dosages generally produced lower flexural strength, while higher dosages (particularly 0.8%) showed improvement. This behaviour indicates a complex interaction between temperature, admixture concentration, and hydration kinetics that warrants further investigation, refer table 3 & figure 2.

Table 3. Flexural strength test results

Temp for first 24 hours	20° C	40° C	60° C
Admixture Dosage	Average Flexural Strength (Psi)	Average Flexural Strength (Psi)	Average Flexural Strength (Psi)
No admixture	2698	2248	1349
0.30%	3147	1349	1798
0.40%	2248	2248	2248
0.50%	2248	1798	1798
0.60%	2698	1798	1574
0.70%	2248	1349	2248
0.80%	2473	1798	2922

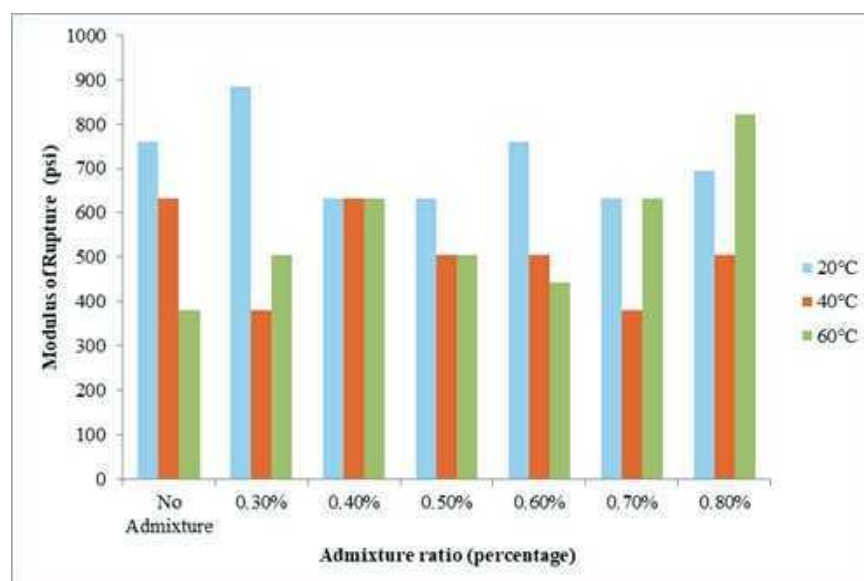


Figure 2. Flexural Strength of concrete versus admixture ratio

3.4 Formwork Deflection

Formwork deflection results confirmed that increasing admixture dosage produces greater immediate deflection upon concrete placement. The control mix (no admixture) reached a stable deflection of 0.9 mm only after 20 minutes. The 0.3% mix stabilised at 1.40 mm; the 0.4% mix at 2.43 mm; and the 0.5% mix at 3.12 mm, with full deflection reached within the first 10–15 minutes

in each case, refer figure 3. This behaviour is advantageous: full formwork deflection occurring before initial set prevents crack development due to delayed settlement under self-weight. The 0.5% dosage is recommended for applications where formwork deflection compliance is a design criterion.

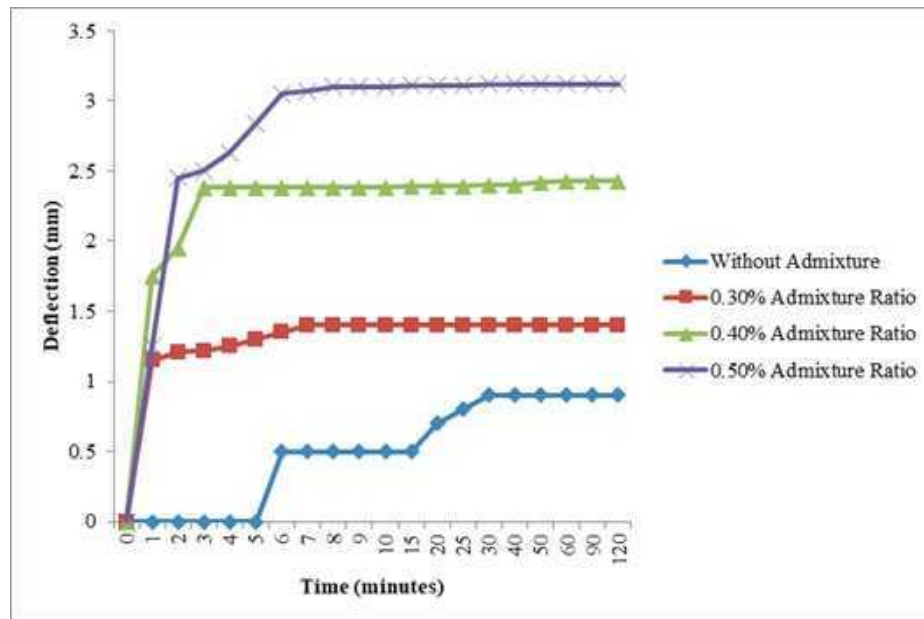


Figure 3. Form deflection verse time graph

4. CONCLUSIONS

- The following conclusions are drawn from this experimental study:
- Workability increases substantially with admixture dosage. Slump saturation at 200 mm was reached at 0.5% dosage and above, irrespective of temperature. Elevated temperatures reduce slump at constant dosage; this must be accounted for in site mix specifications.
- Moderately high temperature (40°C) produces the highest compressive strength at all testing ages and admixture dosages, due to enhanced early hydration combined with the retarding action preventing premature set.
- Extremely high temperature (60°C) results in lower early-age strength than 20°C but produces higher long-term strength at higher dosages, due to delayed completion of hydration.
- Admixture dosage positively correlates with compressive strength across all temperatures and ages. Optimum compressive performance is achieved at 0.8% dosage under 40°C curing conditions.
- Flexural strength is most stable across temperatures at 0.4% dosage, making this the recommended dosage for slabs and pavements where flexural performance governs.
- Formwork deflection increases with admixture dosage. Full deflection before initial set — observed at all dosage levels — prevents crack formation from delayed settlement. The 0.5% dosage is recommended for formwork compliance applications.
- The Modified Lignosulphonate-based Type D admixture performs unsatisfactorily at both normal (20°C) and extreme (60°C) temperatures relative to 40°C. Practitioners in extremely hot climates (above 50°C) should consider high-range water reducing and retarding (Type G) admixtures and enhanced thermal control measures.

5. FUTURE RESEARCH DIRECTIONS

This study was limited to one commercially available Modified Lignosulphonate-based admixture tested with one cement type. Future research should explore polymer-based (polycarboxylate) Type D and Type G admixtures with the same local materials for comparative

performance. Additional properties — including tensile splitting strength, shrinkage, durability (chloride permeability, water absorption), and long-term creep — should be investigated. The interaction between admixture compatibility and varying cement chemistry (particularly C3A and alkali content) merits dedicated study under Pakistani conditions.

REFERENCES

- [1] ACI E-701, 2003. Chemical Admixtures for Concrete. American Concrete Institute, Farmington Hills, MI.
- [2] ACI 212.3R-91, 1991. Chemical Admixtures for Concrete. American Concrete Institute.
- [3] ASTM C 494-04. Standard Specification for Chemical Admixtures for Concrete. American Society for Testing and Materials.
- [4] Collepardi, M., 2005. Admixtures enhancing concrete performance. Proc. 6th International Congress, Global Construction, Ultimate Concrete Opportunities, Dundee, UK.
- [5] Burg, R.G., 1996. The Influence of Casting and Curing Temperature on the Properties of Fresh and Hardened Concrete. Research and Development Bulletin RD113, Portland Cement Association.
- [6] Saeed Ahmad, A.S.K.A., 2004. Effect of water reducing concrete admixtures on the properties of concrete. Proc. International Conference, Singapore.
- [7] Alsadey, S., 2012. Effects of superplasticizing admixture on properties of concrete. Proc. International Conference, Kuala Lumpur.
- [8] Kiran M. Mane et al., Effect of retempering with retarding admixture on properties of concrete subjected to prolonged mixing.
- [9] Kosmatka, S.H., Kerkhoff, B., Panarese, W.C., 2003. Design and Control of Concrete Mixtures, 14th ed. Portland Cement Association, Skokie, IL.
- [10] ASTM C 143/C 143M-03, 2003. Standard Test Method for Slump of Hydraulic-Cement Concrete.

ASTM International.

[11] ASTM C 78-02, 2002. Standard Test Method for Flexural Strength of Concrete (Third-Point Loading). ASTM International.

[12] Lange, D.A., 1994. Long-Term Strength Development of Concrete. RP326, Portland Cement Association.

[13] Wood, S.L., 1992. Evaluation of the Long-Term Properties of Concrete. Research Bulletin RD102, Portland Cement Association.

About Author



Engr. Waqar Ahmad Malik is a highly experienced Structural Engineer with over 18 years of professional experience in the construction and engineering industry. He currently serves at the corporate level as Manager – Quality Assurance at Alfano, where he plays a key role in ensuring and enhancing quality standards across projects and organizational processes.

He holds a Master's degree in Structural Engineering and has been recognized for his academic excellence with a Gold Medal and a prestigious Presidential Award of Honor. His areas of expertise include project management, quality management, and digital transformation, with a strong focus on integrating advanced technologies and innovative practices to improve efficiency and performance.

With a solid combination of technical proficiency and leadership experience, the author has contributed significantly to driving quality initiatives and supporting the implementation of modern engineering and digital solutions within the construction sector.



Evolution of Mission-Critical Communications: From Narrowband LMR to Broadband MCX

Syed Mujtaba Omer Junaidy
Mission Critical Consultant | mujtaba.junaidy@gmail.com

Abstract

Mission-critical communications have evolved from narrowband LMR systems such as TETRA towards broadband LTE-based MCX services. This paper analyzes this transition with focus on architecture, interworking, and multicast mechanisms. It further evaluates key enabling technologies including LMR interworking and eMBMS, proposing practical deployment models.

Keywords—MCPTX, TETRA, LMR, LTE, eMBMS, Public Safety

1. INTRODUCTION

Public Protection and Disaster Relief (PPDR) networks are fundamental to national security, ensuring that governments can protect citizens from emergencies such as fires, natural disasters,

and criminal activity. At the core of these systems lies a mission-critical network—a dedicated infrastructure designed to support the highly coordinated operations of first responders. In such high-stakes environments, the reliability and immediacy of communication directly influence operational success.

Legacy narrowband systems based on standards such as P25, TETRA, and DMR often face interoperability challenges, as disparate technologies limit seamless communication between agencies. This fragmentation can force responders to rely on non-secure commercial networks during joint operations. To address these limitations, the industry has transitioned toward Mission Critical LTE (MCLTE), built on 3GPP standards. MCLTE provides a scalable, high-throughput platform capable of supporting not only voice but also video, data, and situational

awareness services, while benefiting from global standardization and economies of scale.

This evolution is enabled by a set of mission-critical services standardized by 3GPP:

1.1 Mission Critical Push-to-Talk (MCPTT): Delivers the instant, high-reliability voice communication first responders require, but with advanced features like emergency alerts and priority access along with video, data and location/ GIS capabilities.

1.2 Interworking Function: A strategic enabler that allows for a phased migration by bridging the gap between legacy narrowband systems and new broadband platforms. This ensures seamless voice and data exchange between agencies, even when they are at different stages of technological adoption.

1.3 eMBMS (evolved Multimedia Broadcast Multicast Service): Optimized for group communications, eMBMS allows for the efficient, simultaneous delivery of high-bandwidth content—such as live video feeds—to thousands of users without congesting the network.

By integrating these technologies, modern PPDR networks provide the multimedia-rich situational awareness necessary for current cloud and AI-based applications. This shift from simple voice to broadband-enabled intelligence allows first responders to make faster, better-informed decisions that save lives at the critical time.

2. Narrowband Systems
In the narrowband landscape, TETRA (Terrestrial Trunked Radio) and P25 (Project 25) are the two dominant global standards for mission-critical communications, but they dominate different geographical and operational niches. TETRA is the leading standard worldwide, particularly in Europe and Asia, preferred for its high capacity and spectral efficiency, while P25 is the standard of choice in North America, largely favoured by public safety agencies for its superior wide-area coverage and legacy integration.

TETRA and similar systems provide deterministic voice, group call, and direct mode operation. However, they are limited in data throughput, scalability and interworking.

Table 1: Comparison between TETRA and P25

	TETRA	P25
Region	Global (Preferred in Europe/Asia)	Mostly North America
Spectral Efficiency	High (4 channels/25kHz)	Moderate (P25 Ph II: 2 channels/12.5kHz)
Coverage Strategy	High Density / Urban	Wide Area / Rural
Architecture	Primarily TDMA Trunking	TDMA & FDMA, Trunking or Conventional
Data Capabilities	Excellent (Simultaneous Voice & Data)	Moderate (Focus on voice)
Best For	Transportation, Utilities, Metro Areas	Police, Fire, Emergency Services

2.1 TETRA

Terrestrial Trunked Radio (TETRA) is a set of open standards developed by the European



Telecommunications Standards Institute (ETSI). TETRA is the first truly open international standard for the digital professional mobile radio environment. It specifies a set of open interfaces and services for mature professional mobile radio systems. TETRA commands a significant market share worldwide, deployed in over 100 countries. It is highly prevalent in Europe, Asia, and among transportation and utility industries due to its ability to handle high-density user environments. The Middle East market is also predominantly based on TETRA with various CSPs providing TETRA network as a service

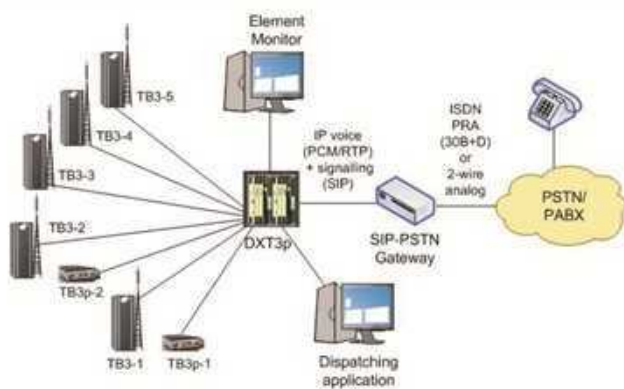


Figure 1: TETRA Technical Architecture (Vendor X)

2.2 P25

With more than 2,800 systems in operation in more than 80 countries, Project 25 has become one of the most important critical communications technologies for public-safety agencies and other critical communications users in the United States and around the world.

Since the first P25 standards were developed more than 30 years ago, they have continued to evolve to incorporate new technology and address the many different challenges that critical communication users face. The P25 standards enable interoperability among multiple manufacturers' P25 products designed

to the P25 standard. There are various P25 equipment manufacturers and service providers in the marketplace, offering a large portfolio of P25 solutions from which to choose. This robust competition within the P25 market space continues to drive Project 25 product and service enhancements and innovation. But when it comes to interworking between P25 and other narrowband standards, this challenge continues to hinder PPDR industry.

Broadband MCX Architecture.

Starting with Release 12, 3GPP introduced the MCPTX (or MCX) framework, encompassing MCPTT, MCDATA, and MCVideo services. These services leverage ongoing enhancements to LTE RAN, transport, and core architectures to meet mission-critical requirements.

To ensure superior network performance, 3GPP defined five specialized QCI for MCPTX, providing prioritized treatment both at initial network entry and during active sessions. During congestion, Access Class Barring (ACB) allows high-priority users to access the network while restricting standard users. Furthermore, based on QCI/ARP configurations, the network can pre-emptively terminate low-priority sessions to maintain guaranteed Quality of Service (QoS) for mission-critical personnel. MCPTX utilizes VoLTE-like bearer creation and modification using LTE core nodes like PCEF & PCRF. The bearer characteristics are further enhanced using new QCI values such as 65, 66, 69, and 70 as shown in figure-2.

QCI	Bearer type	Priority	Packet delay	Packet loss	Example
1	GBR	2	100 ms	10^{-5}	VoIP call
2		4	150 ms	10^{-4}	Video call
3		3	50 ms	10^{-4}	Online gaming
4		5	300 ms	10^{-6}	Video streaming
65		0.7	75 ms	10^{-2}	Mission critical PTT voice
66		2	100 ms	10^{-3}	Non-mission critical PTT voice
5	Non-GBR	1	100 ms	10^{-6}	IMS signaling
6		6	300 ms	10^{-6}	Video, TCP based services
7		7	100 ms	10^{-3}	Voice, video, interactive gaming
8		8	300 ms	10^{-6}	Video, TCP based services
9		9	300 ms	10^{-6}	Video, TCP based services
69		0.5	60 ms	10^{-6}	Mission critical delay sensitive signaling
70		5.5	200 ms	10^{-6}	Mission critical data

.Figure 2: 3GPP QCI values as defined in 3GPP release 12

3GPP has enhanced functionality for MCPTX as shown in figure-3 below to meet the specific needs of public safety requirements including video and data in subsequent releases:

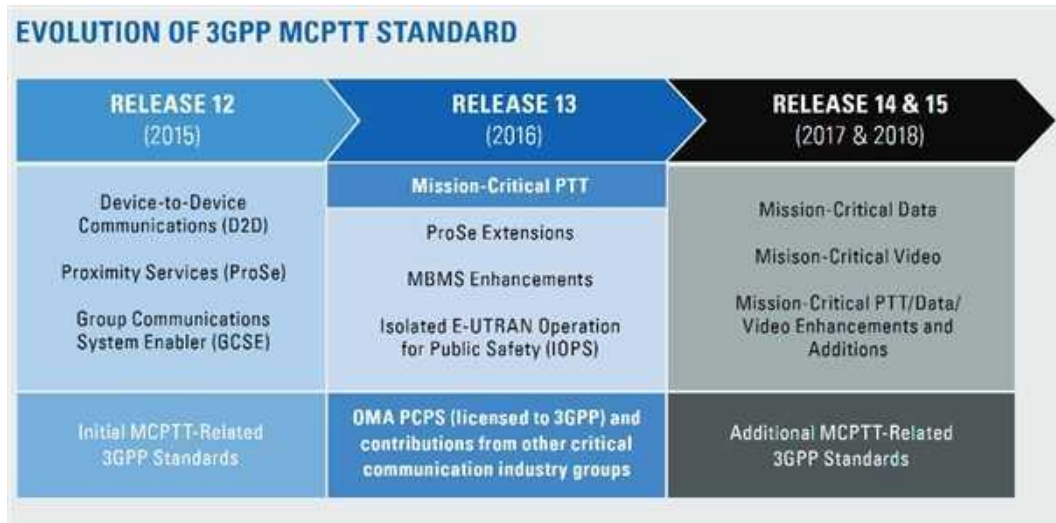


Figure 3: 3GPP enhancement from release 12 to release15 for MCPTX

As previously noted, MCPTX leverages standard LTE bearers for service delivery. The MCPTX application server integrates with the LTE architecture via the SGi interface as shown in figure-4, functioning as an external Packet Data Network (PDN).

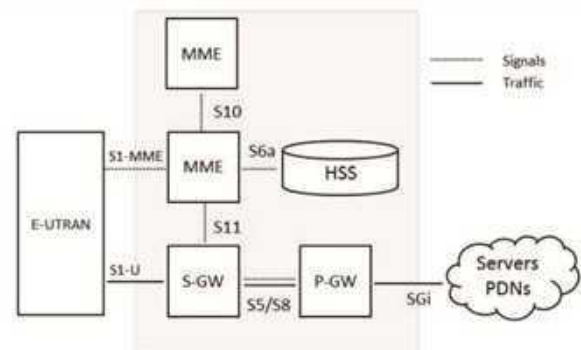


Figure 4: Basic 4G-LTE Architecture

The following diagram illustrates the end-to-end (E2E) integration of the LTE and MCPTX cores, including all standardized reference points.

Detailed specifications for these interfaces are outside the scope of this document.

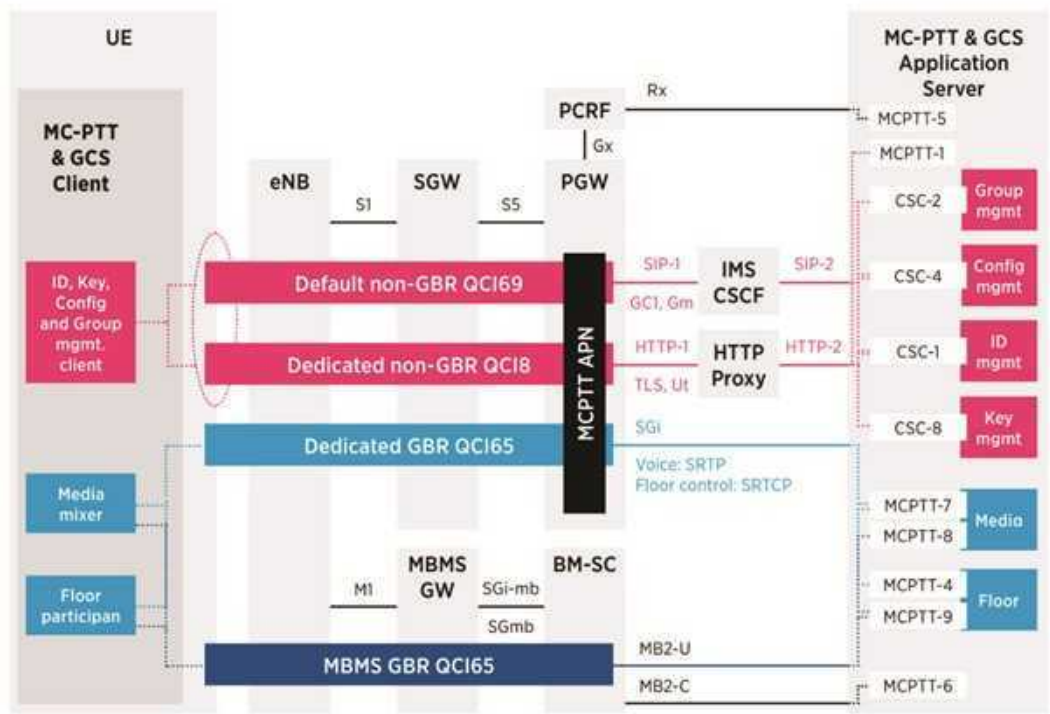


Figure 5: MCPTT Architecture combined with LTE nodes and bearers

Interworking Between Narrowband and 3GPP Broadband Systems

MCLTE is expected to eventually replace narrowband systems but during migration, interworking between legacy narrowband and broadband MCX is essential to maintain service continuity. Organizations cannot abruptly replace LMR systems. Interworking ensures communication between TETRA and MCPTT users, enabling gradual migration and operational continuity.

Interworking Solutions

Most public safety agencies will likely adopt a hybrid LMR and MCPTT approach during the transition. This allows first responders to validate

MCPTT reliability and coverage in non-mission-critical environments before fully committing to a replacement.

To manage this, Public Safety Answering Points (PSAPs) must bridge the two systems so dispatchers can communicate across both networks without jumping between multiple screens. There are two primary technical methods for achieving this interoperability:

5.1 Dispatcher/Console Interoperability

This method predominantly uses a UE-client interface to plug the MCPTX system directly into existing LMR consoles.

The Setup: It essentially treats the console like a specialized mobile device on the network.

Pros/Cons: It is the fastest way to get dispatchers talking to both sides but It is functionally “thin,” offering only basic features. It generally only works for groups that already have a dispatcher assigned; it doesn’t necessarily link the field users to each other directly.

5.2 Interworking via Gateways

This is a more integrated infrastructure-level connection.

The Robust Approach: Using a dedicated gateway allows LMR and MCPTX systems to “talk” natively. This provides feature parity, meaning users on both sides see each other’s Caller IDs and can use advanced signaling.

The “Quick Fix” (RoIP): A subset of this approach is Radio over IP (RoIP) using “donor radios.” You physically connect an LMR radio to an IP gateway to patch the audio through to the MCPTX network.

Pros/Cons: While RoIP is easy to deploy, the full gateway approach is superior for long-term use as it maintains the intelligence and metadata of the

call across both platforms.

5.3 The Third Path: The IWF Approach

The Interworking Function (IWF) is the 3GPP-standardized gateway architecture designed to bridge LTE-based MCPTX with narrowband LMR (like P25 or TETRA). Unlike current proprietary solutions, the IWF is built into the network core to provide a “native” experience.

How it Works: It acts as a translator between the two worlds, mapping identities and transcoding audio so an LMR user and an MCPTX user appear identical to each other on their respective screens.

Current Status: While progress is being made in 3GPP standards (Release 15 and beyond), this approach is still largely in the development or early trial phase. Many agencies consider it the “end-state” goal, but they currently rely on the first two methods because IWF equipment is not yet widely available or fully tested for multi-vendor reliability.

Table 2: Comparison of Interworking options

Feature	Dispatcher/Console	Interworking Gateways (incl. RoIP)	Standardized IWF (3GPP)
Primary Use	Quick, dispatcher-led control.	Connecting field users across networks.	Seamless, vendor-agnostic integration.
Complexity	Low; uses existing console interfaces.	Moderate; requires dedicated hardware.	High; requires 3GPP-compliant core.
Pros	Fastest deployment.	Field-to-field connectivity.	Full feature parity (Caller ID, SOS).
	Uses familiar dispatcher tools.	RoIP is highly cost-effective.	Scalable and future-proof.
Cons	Limited to basic features.	Proprietary; creates vendor lock-in.	Not yet widely ready or field-proven.
	"Dispatcher-in-the-middle" required.	RoIP may lack advanced signaling metadata.	Implementation is still maturing.



6. Multicast/eMBMS requirements for Mission-Critical Services

In a standard unicast configuration, each user requires a separate, dedicated radio bearer, which consumes significant system capacity as the number of users grows. In contrast, eMBMS utilizes multicast to serve an entire group using a single shared channel, drastically reducing the load on radio resources.

The implementation of a Multicast-Broadcast Single Frequency Network (MBSFN) further enhances performance by allowing multiple cells to transmit the same signal simultaneously on the same frequency. This eliminates inter-cell interference at the cell edge and creates a 'diversity gain' that improves signal reliability and reduces error rates. For first responders, this is critical; eMBMS allows them to bypass the typical LTE user-density limits at a single site, ensuring reliable group communication even in highly

congested areas.

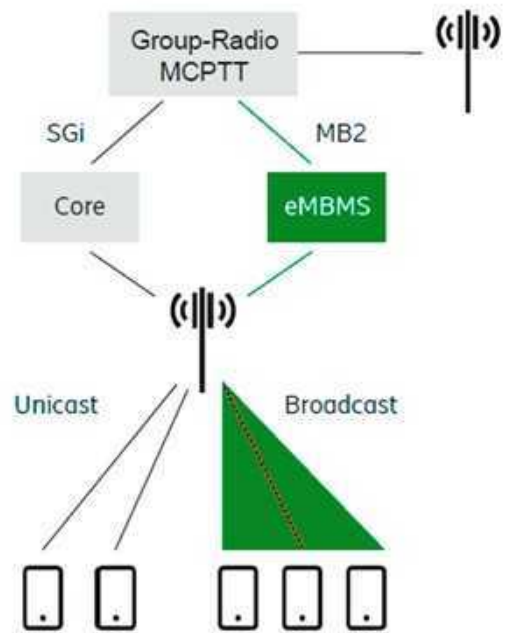


Figure 6: Unicast vs Broadcast channel occupancy



Figure 7: Broadcast/Multicast use case in Public Safety

7. Multicast/eMBMS Solution Architecture

eMBMS (evolved Multimedia Broadcast Multicast Service) operates as a specialized architectural framework designed to run in parallel with the standard LTE Evolved Packet Core (EPC).

While standard LTE is built for one-to-one (unicast) traffic, eMBMS introduces a dedicated broadcast/multicast path to deliver content to an unlimited number of users simultaneously using a single set of radio resources.

Despite being a cornerstone for Mission-Critical Push-to-Talk (MCPTT) in public safety standards,

eMBMS has faced slow global adoption. Market traction is often hindered by a limited ecosystem of compatible devices, specialized middleware, and a small number of infrastructure vendors offering production-grade core products. However, it remains essential for high-density emergency scenarios where unicast networks would otherwise collapse under the signalling load of thousands of first responders.

7.1 eMBMS Architectural Components

The eMBMS architecture introduces three primary logical entities that integrate with the standard LTE Core, RAN and application servers:

BM-SC (Broadcast Multicast Service Center): Acts as the entry point for content providers. It manages session authorization, scheduling, and delivery.

MBMS-GW (MBMS Gateway): A user-plane entity that distributes MBMS packets to all involved eNodeBs using IP Multicast. It is the architectural equivalent of the SGW/PGW in LTE but for broadcast traffic.

MCE (Multi-cell Coordination Entity): Resides in the RAN (Radio Access Network) and manages the allocation of radio resources across multiple cells to ensure they are perfectly synchronized for MBSFN (Single Frequency Network) transmission.

The integration relies on specific 3GPP-defined reference points:

M1: User plane interface (GTP-U) between MBMS-GW and eNodeB for data delivery.

M2: Control plane interface (SCTP) between MCE and eNodeB for radio configuration.

M3: Control plane interface (SCTP) between MME and MCE for session control.

SGmb / SGi-mb: Interfaces between the BM-SC and MBMS-GW for control signaling and user media, respectively.

The eMBMS framework further bridges the

gap between content providers and the LTE radio network. The addition of MB2 and xMB allows for standardized session management and content delivery from external sources:

xMB Interface: Introduced in later 3GPP releases (Rel-14+), the xMB interface simplifies the connection between a Content Provider and the BM-SC. It provides a modern, API-based (RESTful) way to manage MBMS user services and deliver content, making it easier for third-party developers to use broadcast capabilities.

MB2 Interface: This is the primary interface used for Mission-Critical Services (MCS), connecting the Group Communication Service Application Server (GCS AS) to the BM-SC. It is split into MB2-C (Control Plane for session start/stop) and MB2-U (User Plane for actual media/voice traffic).

Below figure is a high-level representation for multicast delivery. The Content Provider node serves as the source for MCPTX media (voice/video) or asynchronous data services via the xMB/ MB2 interfaces.

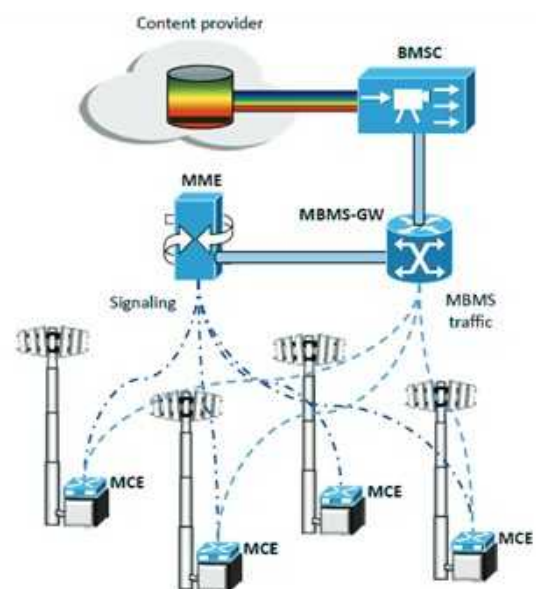


Figure 8: Multicast delivery architecture

The integrated eMBMS and LTE Core architecture is illustrated below, with eMBMS-specific nodes highlighted in red.

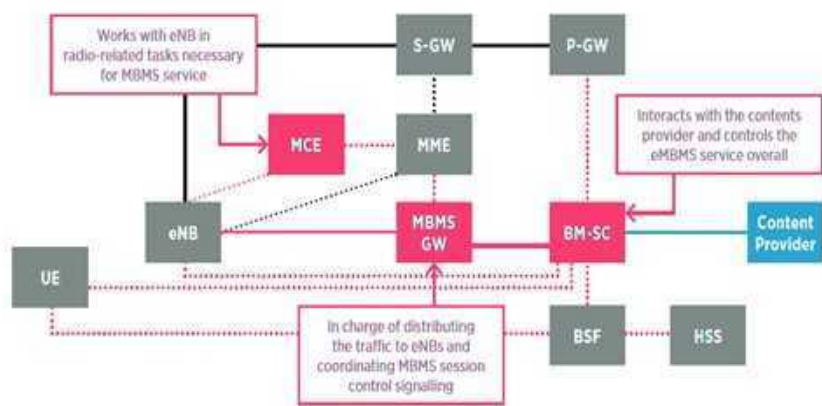


Figure 9: Multicast Architecture with LTE

Table 3: Multicast Interfaces/reference points

Interface	Connection	Purpose
xMB	Content Provider - BM-SC	Modern API for unified broadcast service management for data services including MCDATA.
MB2	GCS AS (MCPTT) - BM-SC	Critical for public safety; manages multicast sessions for group calls including MCAudio and MCVideo
SGmb / SGI-mb	BM-SC - MBMS-GW	Interfaces between the BM-SC and MBMS-GW for control signaling and user media, respectively.
Sm	MME - MBMS-GW	Handles MBMS session control (Start/Update/Stop).
M1	MBMS-GW - eNodeB	User plane for IP multicast data delivery.
M2	MCE - eNodeB	Control plane for session management at the eNodeB level
M3	MME - MCE	Control plane for session management at the MCE level

CONCLUSION

The evolution of mission-critical communications from legacy narrowband LMR (Land Mobile Radio) systems like TETRA/P25 to broadband LTE-based MCPTX services represents a fundamental shift in public safety capabilities. This paper has detailed the architectural journey of this transition, emphasizing that the coexistence of these two worlds is not merely a phase, but a

strategic necessity.

By analysing both narrowband and broadband architectures, it is evident that while LTE provides the high-throughput data required for modern emergency response, the reliability of LMR remains a benchmark. The Interworking Function (IWF), as discussed, serves as the critical bridge, ensuring that voice continuity and group communication remain seamless across disparate radio technologies.

Furthermore, the deep dive into eMBMS (evolved Multimedia Broadcast Multicast Service) highlights a pivotal solution to the “unicast bottleneck.” By offloading high-density traffic to specialized multicast bearers via the BM-SC and MBMS-GW, agencies can maintain service integrity during large-scale incidents where standard networks typically fail. Although the ecosystem for eMBMS—including devices and specialized middleware—is still maturing, its integration remains essential for a truly resilient Mission-Critical Push-to-Talk (MCPTT) framework.

In summary, the transition to broadband is not a simple replacement but a complex architectural integration. The practical deployment models proposed in this paper demonstrate that through robust IWF strategies and the adoption of multicast mechanisms, public safety organizations can achieve a unified, high-performance communication environment that combines the proven reliability of the past with the advanced data capabilities of the future.

REFERENCES

- Network 2020: The 4G Broadcasting Opportunity

- https://www.gsma.com/solutions-and-impact/technologies/networks/gsma_resources/network-2020-the-4g-broadcasting-opportunity/
- MCPTX for PS-LTE https://images.samsung.com/is/content/samsung/assets/global/business/networks/insights/white-paper/mcptx-for-public-safety/white-paper_mcptx-for-public-safety.pdf
- Mission Critical Networks <https://www.ericsson.com/en/portfolio/networks/network-solutions/mission-critical-networks>
- LTE Multimedia Broadcast Multicast Services (MBMS) <https://www.viavisolutions.com/en-us/literature/lte-multimedia-broadcast-multicast-services-mbms-white-papers-books-en.pdf>
- ENHANCED MULTIMEDIA BROADCAST MULTICAST SERVICE <https://hytera.ae/media/Hytera-eMBMS-Whitepaper.pdf>
- Guidance for the successful usage of Massive Mission Critical Video <https://tcca.info/documents/Guidance-for-the-successful-usage-of-Massive-Video-Presentation-Final.pdf/>

ABBREVIATIONS

Abbreviation	Full Form
3GPP	3rd Generation Partnership Project
ACB	Access Class Barring
ARP	Allocation and Retention Priority
BM-SC	Broadcast Multicast Service Center
eMBMS	evolved Multimedia Broadcast Multicast Service
EPC	WEvolved Packet Core
ETSI	European Telecommunications Standards Institute
GCS AS	Group Communication Service Application Server
IMS	IP Multimedia Subsystem
IWF	Interworking Function



LTE	Long Term Evolution
LMR	Land Mobile Radio
MBMS-GW	MBMS Gateway
MCE	Multi-cell Coordination Entity
MCPTT	Mission Critical Push-to-Talk
MCPTX / MCX	Mission Critical Services (umbrella for MCPTT, MCData, MCVideo)
MCLTE	Mission Critical LTE
MME	Mobility Management Entity
MBSFN	Multicast-Broadcast Single Frequency Network
PDN	Packet Data Network
P25	Project 25
PCRF	Policy and Charging Rules Function
PPDR	Public Protection and Disaster Relief
PSAP	Public Safety Answering Point
QoS	Quality of Service
QCI	QoS Class Identifier
RoIP	Radio over IP
TETRA	Terrestrial Trunked Radio
VoLTE	Voice over LTE

ABOUT THE AUTHOR



With over 20 years of experience in the telecommunications industry, the author is a seasoned expert in mission-critical communication systems, with a strong focus on the evolution from traditional narrowband Land Mobile Radio (LMR) networks to

modern broadband Mission Critical Services (MCX) over LTE and 5G.

Throughout his career, he has worked extensively in multi-vendor environments, encompassing both RAN and core networks from leading technology providers. He has played a key role in the design, integration, and deployment of advanced communication solutions. His expertise spans LTE/5G core and IMS architectures, VoLTE, and mission-critical applications such as MCPTT,

with hands-on experience in integrating diverse ecosystems, including Ericsson, Nokia, and Huawei core networks, multi-RAN deployments, and third-party MCPTX platforms such as Motorola and Samsung.

He has been actively involved in delivering large-scale, high-availability communication systems for public safety and enterprise use cases, with particular emphasis on performance, resilience, and interoperability between legacy systems (such as TETRA/LMR) and broadband technologies. His experience also includes LTE broadcast (eMBMS), QoS mechanisms, and secure end-to-end communication frameworks required for mission-critical operations.

Currently based in Saudi Arabia, the author continues to contribute to the advancement of next-generation critical communications by bridging extensive operational experience with emerging cloud-native and 3GPP-based architectures.



Balanced Leadership: A New Perspective on Leadership Styles in Middle Eastern Society

By: Masood Ul Hassan

Abstract

This study examines balanced leadership in Middle Eastern mega projects, focusing on strategies for managing multicultural workforces. While prior research has explored Eastern and Western leadership styles, limited attention has been given to their integration in the Middle East. This study addresses that gap by analyzing leadership practices in culturally diverse environments. Mega projects provide a unique context due to their cosmopolitan workforce, where diverse cultural and professional backgrounds foster adaptive and inclusive leadership. Findings highlight trust, relationship-building, and competency as key factors for effective implementation, contributing to both theory and practice in leadership and project management.

Keywords: Balanced leadership, Vertical leadership, Horizontal leadership, Middle East, Cross-cultural management, Mega projects, Project management.

1. Introduction

Globalization in the construction industry has

led to the convergence of diverse leadership styles, particularly in large-scale projects across the Middle East. This study draws on professional experience in regional construction projects, including involvement with AECOM on NEOM.

NEOM brings together professionals from diverse regions, creating a collaborative yet complex environment. Differences in cultural expectations, communication styles, and management practices can create gaps in coordination and decision-making. These challenges require adaptive leadership approaches that balance traditional norms with modern organizational demands.

2. Methodology

This study employs a literature review of peer-reviewed research on leadership styles, cultural influences, and balanced leadership. Comparative analysis of Western, Eastern, and Middle Eastern leadership practices informs the development of a conceptual model integrating vertical and horizontal leadership dynamics.

3. Literature Review

3.1 Cultural and Religious Influences on Leadership

Leadership in the Middle East is shaped by cultural, religious, and organizational factors. Managers must align practices with local norms to reduce conflict and improve outcomes [8]. Gender dynamics and societal expectations also influence leadership participation.

Religion, particularly Islam, shapes decision-making and interpersonal behavior. While it may limit long-term strategic planning in some cases, it promotes ethical conduct and accountability [14,8].

3.2 Leadership Styles in the Middle East

Middle Eastern leadership is often characterized by high power distance, collectivism, and preference for stability [11,12]. These traits encourage relationship-oriented leadership and group cohesion, though they may reduce efficiency and adaptability [13].

Cross-cultural studies highlight limitations in transferring Western leadership models directly to Eastern contexts. Western leadership emphasizes collaboration and individualism, while Eastern approaches often reflect hierarchy and tradition [25,5,27]. Effective leadership in the Middle East requires adaptation to local cultural values and social structures [23,9].

3.3 Balanced Leadership

Balanced leadership integrates vertical leadership (VL) with horizontal leadership (HL). VL provides direction and control, while HL enables collaboration and situational decision-making [19,20].

Effective implementation requires trust, competence, and delegation. Leadership transitions from HL to VL involve structured processes, including candidate identification, temporary delegation, and evaluation [2]. Challenges include lack of trust, fear of losing authority, and capability gaps [4,15].

Table 5. Matrix: Factors Affecting Various Aspects of Leadership and Transition of Balance Leadership.

Findings from Literature Review	Religion	Culture	Tradition	Trust on HL	Relationship	Industry type	Capabilities
Horizontal leadership	Little	Little	Little	-	Moderate	Little	Moderate
Vertical Leadership	Little	Little	Little	Strong	Moderate	Little	Moderate
Transition process	Little	Little	Moderate	Strong	Moderate	Moderate	Moderate
Western leadership Style	Little	Little	Little	Moderate	Moderate	Moderate	Strong
Middle eastern Leadership style	Moderate	Moderate	Moderate	Strong	Strong	Moderate	Strong
Success of Balance Leadership	Little	Moderate	Moderate	Strong	Strong	Moderate	Strong

4. Results and Analysis

Findings indicate that trust, relationship-building, and competency are the most critical factors influencing balanced leadership. Cultural and traditional factors have moderate effects, while religion plays a less direct role.

The transition process from HL to VL involves structured stages requiring active engagement from project managers and support for team development [2,3].

Professional experience across Middle Eastern projects supports these findings, demonstrating the emergence of hybrid leadership styles and

adaptive management approaches in large-scale developments such as NEOM.

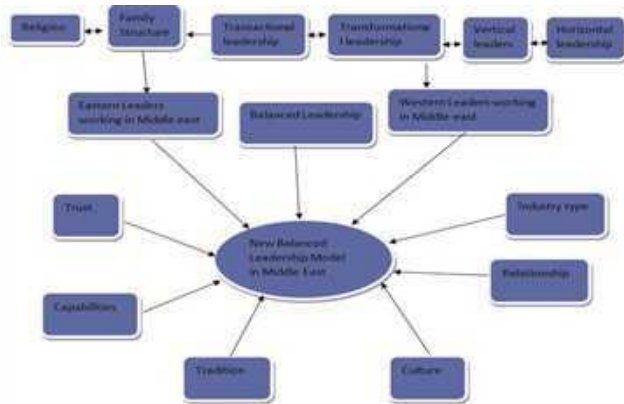


Figure 2. New Balanced Leadership Model in the Middle East

5. Discussion

Balanced leadership bridges Western vertical leadership and Middle Eastern horizontal leadership approaches, improving alignment and organizational performance. However, challenges remain, including cultural differences, communication barriers, and reluctance to delegate authority.

Trust and relationship-building are essential for overcoming these barriers, particularly in multicultural environments. These findings contribute to leadership theory by extending understanding of leadership in culturally complex contexts and provide practical guidance for project managers.

6. Conclusion

Balanced leadership is a practical and context-sensitive approach for managing multicultural teams in the Middle East. Its success depends on:

- Trust between leaders and team members
- Relationship-building
- Competency development

Cultural and traditional factors must be considered, while religion influences leadership indirectly through social norms.

Balanced leadership enhances collaboration, supports leadership transitions, and improves

organizational effectiveness in multinational projects. This study provides a structured framework for understanding leadership dynamics and guiding implementation in complex project environments.

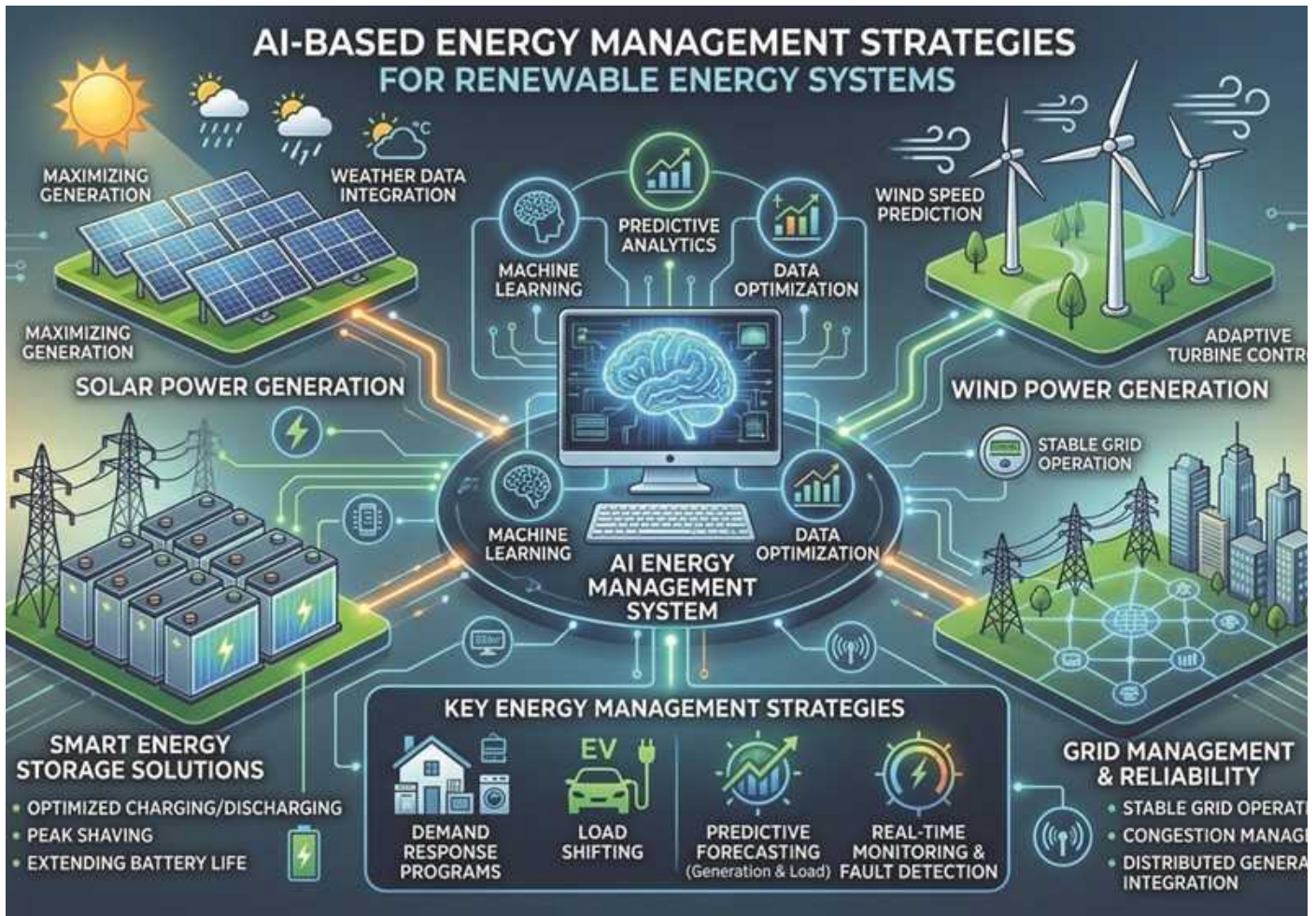
References

- Dastmalchian A, Kabasakal H. Leadership and culture in the Middle East. Acad Manage Exec. 2001.
- Ilmihal M. Islamic perspectives on leadership. 1999.
- Hofstede G. Culture's consequences. Beverly Hills: Sage; 1980.
- Hofstede G. National cultures revisited. 1983.
- House RJ, et al. GLOBE study of leadership. 1999.
- Pye L. Asian power and politics. Harvard University Press; 1985.
- Bond MH, Hwang KK. The social psychology of Chinese people. 1986.
- Spencer-Oatey H. Cultural dimensions of communication. 1997.
- Pratt MG, et al. Leadership in cross-cultural contexts. 1999.
- DuBrin AJ. Leadership: Research findings, practice, and skills. 2004.
- Bennis W, Nanus B. Leaders: Strategies for taking charge. 1985.
- Keegan A, Den Hartog DN. Leadership in project-based organizations. 2004.
- Alonderiene R, et al. Leadership transition in agile environments. 2022.
- Bourdieu P. Social foundations of thought and action. 1984.

Author Introduction

Masood Ul Hassan holds an MSc in Project Management and a BSc in Civil Engineering, with over 18 years of professional experience in construction and consultancy across the Middle East. He has contributed to a diverse portfolio of large-scale projects, including Diriyah, NEOM, King Abdullah Financial District (KAFD), Ashghal, and Jebel Ali Airport. He is currently serving as a Project Manager at AECOM, where he is involved in the delivery of the Diriyah development program. His professional and research interests include leadership in project management, large-scale program delivery, and infrastructure development in culturally complex environments.





AI-Based Energy Management Strategies for Renewable Energy Systems: A Review

Dr. Syed Muhammad Fakhir Hasani

Department of Mechanical Engineering, Imam Mohammad Ibn Saud Islamic University
Riyadh, Saudi Arabia

Abstract

The increasing integration of renewable energy sources such as solar and wind power into modern power systems introduces operational challenges due to their intermittent and stochastic nature. Efficient energy management strategies are required to ensure system reliability, stability, and

optimal energy utilization. Artificial intelligence has emerged as a promising technology to enhance energy management through predictive analytics, adaptive control, and real-time optimization. This paper presents a preliminary review of AI-based energy management strategies for renewable energy systems. Various artificial intelligence techniques including machine learning,

deep learning, reinforcement learning, neural networks, and fuzzy logic are discussed in the context of renewable energy management. The review also highlights applications in smart grids, microgrids, and hybrid renewable energy systems. Furthermore, key challenges such as computational complexity, cybersecurity, and data availability are examined. Finally, future research directions for the development of intelligent and scalable energy management systems are presented.

Keywords— Artificial Intelligence, Energy Management Systems, Renewable Energy, Smart Grid, Machine Learning, Deep Learning.

1. INTRODUCTION

The global transition toward sustainable energy systems has accelerated the deployment of renewable energy technologies such as solar photovoltaic (PV), wind energy, and energy storage systems. Renewable energy sources are essential for reducing greenhouse gas emissions and mitigating climate change while meeting the rapidly growing global energy demand [1]. Despite their environmental benefits, renewable energy sources are inherently intermittent and unpredictable. Variations in weather conditions directly influence the generation of solar and wind energy, which creates challenges in balancing electricity supply and demand [2]. Efficient energy management strategies are therefore required to coordinate power generation, energy storage, and load demand in renewable energy systems. Traditional energy management techniques rely on rule-based control and optimization algorithms that often fail to handle nonlinear system dynamics and uncertainty in renewable generation [3]. With the rapid advancement of artificial intelligence technologies, researchers have begun exploring AI-based approaches for renewable energy forecasting, energy scheduling, and system optimization. AI enables intelligent decision-making by analysing large datasets collected from sensors, weather forecasts, and electricity

consumption patterns. AI-based energy management systems can improve system efficiency, reduce operational costs, and enhance grid stability [4].

This paper provides a preliminary review of AI-based energy management strategies for renewable energy systems. The study focuses on AI techniques, applications, benefits, and challenges associated with intelligent energy management.

2. RENEWABLE ENERGY SYSTEMS AND ENERGY MANAGEMENT

Renewable energy systems include technologies that generate electricity from naturally replenishing resources such as solar radiation, wind, hydropower, and biomass. Among these sources, solar and wind energy have experienced significant growth due to declining installation costs and technological advancements [5]. However, renewable energy generation is highly dependent on environmental conditions. For example, solar power generation varies according to sunlight intensity, while wind power generation depends on wind speed and atmospheric conditions.

Energy management systems (EMS) are designed to coordinate energy generation, storage, and consumption within power networks. In renewable energy systems, EMS perform several important functions such as:

- Energy forecasting
- Load demand prediction
- Energy storage control
- Power dispatch optimization
- Demand-side management

Effective energy management becomes even more critical and challenging in hybrid renewable energy systems that integrate multiple energy sources with battery storage systems [6].

3. TRADITIONAL ENERGY MANAGEMENT APPROACHES

The traditional approaches may include (a)

Rule based control, and (b) Optimization based methods.

3.1 Rule-Based Control

Rule-based energy management strategies use predefined logical rules to control energy flows between renewable sources, storage systems, and the grid. These systems are simple to implement but lack adaptability in dynamic environments.

3.2 Optimization-Based Methods

Optimization algorithms are widely used in conventional EMS for determining optimal operating conditions. Common techniques include:

- Linear Programming (LP)
- Mixed-Integer Linear Programming (MILP)
- Dynamic Programming
- Genetic Algorithms

These methods mainly attempt to minimize operational costs while maximizing system efficiency [7].

3.3 Limitations of Traditional Approaches

The traditional EMS approaches have several limitations that may be summarized as follows:

- Difficulty of handling uncertainty in renewable power generation
- High computational requirements for large-scale systems
- Limited adaptability to changing system conditions
- Dependence on accurate mathematical models

These limitations have encouraged researchers to explore AI-based energy management solutions.

4. ARTIFICIAL INTELLIGENCE TECHNIQUES FOR ENERGY MANAGEMENT

Artificial intelligence techniques provide powerful tools for modeling nonlinear systems, learning patterns from historical data, and making intelligent control decisions.

4.1 Machine Learning

Machine learning algorithms are widely used for energy forecasting and system optimization. Popular algorithms include Support Vector Machines (SVM), Random Forest, and Decision Trees [8]. Machine learning models can predict a number of things such as electricity demand, renewable generation, and weather conditions with improved accuracy.

4.2 Deep Learning

Deep learning is a subset of machine learning that utilizes multi-layer neural networks to process large datasets. Deep learning models commonly used in renewable energy forecasting include:

- Convolutional Neural Networks (CNN)
- Recurrent Neural Networks (RNN)
- Long Short-Term Memory (LSTM)

LSTM models are particularly effective for time-series forecasting such as solar radiation and wind speed prediction [9].

4.3 Reinforcement Learning

Reinforcement learning enables intelligent systems to learn optimal control strategies by interacting with their environment. The algorithm learns through trial-and-error to maximize a reward function. Reinforcement learning has been applied to:

- Power dispatch optimization
- Battery storage control
- Demand response management [10]

4.4 Fuzzy Logic Systems

Fuzzy logic controllers are capable of handling uncertainty and imprecise data. These controllers

use linguistic rules to control energy flows in renewable systems [11]. Fuzzy logic is commonly integrated with neural networks to create hybrid intelligent control systems.

5. APPLICATIONS OF AI-BASED ENERGY MANAGEMENT

The AI-based energy management techniques may be applied to following the types of grids and energy systems.

5.1 Smart Grids

Smart grids integrate communication technologies with electrical infrastructure to improve system reliability and efficiency. AI technologies in smart grids enable:

- Load forecasting
- Fault detection
- Energy demand prediction
- Grid stability improvement [12]

5.2 Microgrids

Microgrids are localized energy systems that can operate independently from the main grid. AI-based energy management systems in microgrids coordinate renewable generation, energy storage, and load demand to ensure continuous power supply [13, 14].

5.3 Hybrid Renewable Energy Systems

Hybrid renewable energy systems combine multiple energy sources such as solar PV, wind turbines, diesel generators, and batteries. AI techniques optimize energy distribution between these sources to minimize operational costs while maintaining reliability [4].

6. CHALLENGES IN AI-BASED ENERGY MANAGEMENT

Despite significant advantages, AI-based energy management systems face several challenges. The key challenges may be narrowed down to the

following.

6.1 Data Availability

AI models require large datasets for training. However, high-quality renewable energy data may not be always available.

6.2 Computational Complexity

Deep learning algorithms require significant computational resources including GPUs and cloud computing infrastructure [15].

6.3 Cybersecurity Risks

AI-based power systems are vulnerable to cyberattacks, data manipulation, and adversarial attacks [16].

6.4 Model Interpretability

Many AI models function as black boxes, making it difficult to interpret decision-making processes.

7. FUTURE RESEARCH DIRECTIONS

Future research in AI-based energy management should focus on the following areas:

- Explainable AI for transparent decision-making
- Integration of AI with Internet of Things (IoT) technologies
- Distributed intelligence for decentralized energy systems
- AI-driven digital twins for power system simulation
- Integration of electric vehicles with renewable energy networks

These advancements can help create more efficient, reliable, and sustainable energy systems in future.

8. CONCLUSION

Artificial intelligence has emerged as a powerful

technology for improving energy management in renewable energy systems. AI-based strategies provide advanced forecasting capabilities, adaptive control mechanisms, and efficient optimization techniques.

Techniques such as machine learning, deep learning, reinforcement learning, and fuzzy logic have demonstrated significant potential in enhancing renewable energy integration into modern power systems.

However, challenges related to data availability, computational requirements, and cybersecurity must be addressed to ensure large-scale deployment. Continued research in intelligent energy management systems will play a crucial role in achieving sustainable and resilient energy infrastructures.

REFERENCES

[1] International Energy Agency, World Energy Outlook Report 2023, Paris, France, 2023. (<https://www.iea.org/reports/world-energy-outlook-2023>. Last accessed on 03/17/2026)

[2] A. Mellit and S. Kalogirou, "Artificial intelligence techniques for photovoltaic applications: A review," *Progress in Energy and Combustion Science*, vol. 34, no. 5, pp. 574–632, 2008.

[3] H. Lund, P.A. Ostergaard, D. Connolly and B.V. Mathiesen, "Smart energy and smart energy systems," *Energy*, vol. 137, pp. 556–565, 2017.

[4] A. Najib, S. M. F. Hasani, K. S. Aamir, A. Hussain, "Energy Management Strategies" in *Comprehensive Energy Systems*, Vol 9, 2nd ed., pp. 144-175, Elsevier, 2025.

[5] REN21, Renewables Global Status Report, Paris, France, 2022. (<https://www.ren21.net/gsr-2022>. Last accessed on 03/17/2026)

[6] A. Chauhan and R.P. Saini, "A review on Integrated Renewable Energy system based

power generation for stand-alone applications: Configurations, storage options, sizing methodologies and control" *Renewable and Sustainable Energy Reviews*, vol. 38, pp. 99–120, 2014.

[7] S. Bahramirad, W. Reder, and A. Khodaei, "Reliability-constrained optimal sizing of energy storage system," *IEEE Transactions on Smart Grid*, vol. 3, no. 4, pp. 2056–2062, 2012.

[8] T. Hong and S. Fan, "Probabilistic electric load forecasting: A tutorial review" *International Journal of Forecasting*, vol. 32, no. 3, pp. 914–938, 2016.

[9] Y. LeCun, Y. Bengio, and G. Hinton, "Deep learning," *Nature*, vol. 521, pp. 436–444, 2015.

[10] R. Sutton and A. Barto, *Reinforcement Learning: An Introduction*, MIT Press, 2018.

[11] L. A. Zadeh, "Fuzzy sets," *Information and Control*, vol. 8, pp. 338–353, 1965.

[12] X. Fang, S. Misra, G. Xue, and D. Yang, "Smart grid – The new and improved power grid," *IEEE Communications Surveys & Tutorials*, vol. 14, no. 4, pp. 944–980, 2012.

[13] J. A. Pecas Lopes, C. L. Moreira, and A. G. Madureira, "Defining control strategies for microgrids islanded operation," *IEEE Transactions on Power Systems*, vol. 21, no. 2, pp. 916–924, 2006.

[14] N. Hatziaargyriou, *Microgrids: Architectures and Control*, Wiley-IEEE Press, 2013.

[15] I. Goodfellow, Y. Bengio, and A. Courville, *Deep Learning*, MIT Press, 2016.

[16] S. Sridhar, A. Hahn, and M. Govindarasu, "Cyber-physical system security for the electric power grid," *Proceedings of the IEEE*, vol. 100, no. 1, pp. 210–224, 2012.



Governing Artificial Intelligence in Cybersecurity: From Advanced Threats to Enterprise Risk and Operational Resilience

By Mian Abdul Hamid

(Enterprise Cyber & Digital Risk (ERM) Leader | 25+ Years in Cyber Ops, Architecture, Audit & GRC)



Abstract

The increasing use of artificial intelligence (AI) in cybersecurity has strengthened detection

and response capabilities while simultaneously amplifying the scale and sophistication of cyber threats. This dual-use dynamic introduces governance challenges that strain traditional enterprise risk management (ERM), particularly in

critical infrastructure environments where cyber incidents can affect operational continuity, safety, and public trust. This paper aims to examine how AI reshapes cybersecurity risk and to determine how AI-enabled cybersecurity should be governed at the enterprise level.

The study adopts an analytical and conceptual approach, examining the evolution of AI in cybersecurity across both offensive and defensive dimensions. It synthesizes technical developments with governance, risk, and compliance (GRC) considerations to assess how AI-enabled decisionmaking alters control behavior, accountability, and assurance. Special focus is placed on critical infrastructure, where IT/OT integration and cyber-physical links heighten the impact of governance failures.

The paper demonstrates that AI-enabled cybersecurity does not introduce a new category of enterprise cyber risk but fundamentally changes how existing cyber risk must be governed. It proposes a governance-centric integration of AI-enabled cybersecurity into ERM and introduces the GCORE framework, which translates enterprise risk appetite into explicit constraints on AI-enabled cybersecurity controls while preserving accountability, human oversight, and continuous assurance. The study contributes a practical governance framework that supports operational resilience and responsible AI adoption in cyberphysical systems.

1. Introduction

The integration of artificial intelligence (AI) and machine learning (ML) into cybersecurity marks a fundamental shift in how organizations manage digital risk. As enterprise environments expand in scale, complexity, and interconnectivity, traditional cybersecurity approaches, largely based on static rules, signature-driven detection, and manual intervention, have struggled to keep pace with the speed, volume, and variability of contemporary cyber threats (WEF, 2026; ENISA,

2025). In response, organizations have increasingly adopted AI-enabled cybersecurity capabilities, including AI-driven intrusion detection systems, AI-augmented security operations centers (SOC), endpoint detection and response (EDR), user and entity behavior analytics (UEBA), and security orchestration, automation, and response (SOAR) platforms (NIST, 2024; CISA, 2024a). In parallel, AI has been introduced into operational technology (OT), industrial control systems (ICS), and Internet of Things (IoT) environments, where legacy architectures and real-time operational constraints limit the effectiveness of conventional security controls (CISA, 2024b). Collectively, these developments have repositioned cybersecurity from a predominantly reactive function toward one that increasingly aspires to be predictive, adaptive, and resilient (WEF, 2025).

Simultaneously, technological progress facilitating defensive innovation has also reduced entry barriers for potential adversaries. AI has expanded attackers' ability to conduct scalable, targeted, and evasive cyber operations with greater efficiency and reduced cost (ENISA, 2020; ENISA, 2025). AI-generated phishing, deepfake-enabled social engineering, automated reconnaissance, and machine-assisted vulnerability discovery illustrate how offensive capabilities are evolving in parallel with defensive measures (WEF, 2026). This dual-use nature of AI introduces a persistent tension within the cybersecurity domain. Technologies developed to improve detection and response capabilities may also increase the complexity, scope, and effectiveness of cyber threats.

This tension is especially pronounced in critical infrastructure sectors, where organizations responsible for essential services operate environments that tightly couple digital and physical processes. In such contexts, cyber incidents may extend beyond information compromise to disrupt operations, endanger safety, and undermine public trust (WEF, 2026). AI-enabled cybersecurity solutions such as anomaly

detection in OT networks, behavioral monitoring of industrial processes, and automated incident response, offer meaningful resilience benefits (CISA, 2024b). However, they also introduce new dependencies on data quality, model behavior, and algorithmic decision making that may be difficult to interpret, validate, or control (NIST, 2025). As a result, AI adoption in critical infrastructure cybersecurity represents not merely a technical optimization, but a strategic risk and governance challenge with enterprise level consequences.

While existing research has extensively explored the technical applications of AI in cybersecurity, comparatively less attention has been paid to the governance, risk, and compliance implications of deploying AI enabled security systems at scale. Many of these systems rely on probabilistic models, adaptive learning, and opaque decision logic, raising questions about accountability, auditability, and oversight, particularly when automated decisions carry material operational, financial, or safety impacts (ISO, 2018; NIST, 2025). Without appropriate governance mechanisms,

organizations risk introducing new forms of systemic vulnerability while attempting to mitigate existing cyber risks.

This paper contends that AI enabled cybersecurity must be understood not only as an operational capability, but as a risk shaping factor within the enterprise cyber risk landscape. Rather than treating AI solely as a technical enhancement or as an uncontrollable threat, organizations must explicitly govern how AI reshapes decision authority, risk ownership, and assurance mechanisms (ISO, 2018; NIST, 2024). Accordingly, the paper traces the evolution of AI in cybersecurity, examines how AI amplifies both offensive and defensive dynamics, and analyzes the governance challenges that emerge—particularly in critical infrastructure environments. It then proposes a structured, governance centric framework for integrating AI enabled cybersecurity into enterprise risk management in a manner that preserves accountability, transparency, and organizational resilience.

Figure-1: AI-Enabled Cybersecurity: Defense, Threats and Governance



2. Evolution of AI in the Cybersecurity Landscape

The application of artificial intelligence (AI) to cybersecurity has evolved progressively in response to the increasing scale, speed, and complexity of modern digital environments. Early cybersecurity practices were largely reactive, relying on predefined rules, signature based detection, and manual analysis to identify malicious activity. While effective against known threats, these approaches struggled as organizations digitized core operations, expanded cloud adoption, and interconnected information technology (IT) with operational technology (OT) (WEF, 2026; ENISA, 2025). The resulting growth in telemetry volume and attack surface exposed fundamental limitations in traditional security models.

2.1 Early Augmentative Applications of AI in Cybersecurity

Initial uses of AI in cybersecurity focused on pattern recognition and anomaly detection. Machine learning techniques enabled the analysis of large datasets generated by system logs, network flows, and endpoint telemetry, allowing security teams to identify deviations from normal behavior (ENISA, 2020). These early applications were primarily augmentative, enhancing analysts' ability to process information at scale rather than replacing human judgment or decision making authority.

At this stage, AI functioned largely as an analytical support tool. Models highlighted suspicious patterns or ranked alerts, but final interpretation and response decisions remained firmly within human control. This approach aligned well with existing governance and assurance structures, which assumed deterministic system behavior and traceable decision logic (ISO, 2018).

2.2 Expansion from Analytical Support to Operational Integration

Advances in data availability, computational capacity, and algorithmic sophistication gradually expanded the role of AI from analytical support to an integral component of cybersecurity platforms. AI driven capabilities were increasingly embedded into security information and event management (SIEM), endpoint protection, and network monitoring systems (NIST, 2024). These systems supported threat prioritization, alert correlation, and incident triage, enabling security operations to respond more rapidly and at greater scale.

This technical evolution coincided with changes in the threat landscape. As adversaries adopted automation to increase the efficiency and scale of attacks, defenders increasingly emphasized speed, adaptability, and continuous monitoring (ENISA, 2025; WEF, 2026). AI driven systems became central to modern security operations, reinforcing the perception of AI as an indispensable enabler of effective cyber defense, particularly in large, complex organizational environments.

2.3 Consequences for Critical Infrastructure Environments

The evolution of AI in cybersecurity has been especially consequential for critical infrastructure sectors. Organizations responsible for essential services have long relied on automation and analytics to manage complex operational environments. As AI capabilities matured, they were increasingly integrated into systems responsible not only for monitoring and detection, but also for control and response functions (CISA, 2024b).

While these technologies offer significant opportunities to enhance situational awareness, resilience, and operational efficiency, they also introduce new dependencies and potential points of failure. Policy and research communities have repeatedly noted that AI can strengthen cybersecurity defenses while simultaneously creating new risks if governance, oversight, and assurance mechanisms fail to evolve alongside

technology (WEF, 2025; ENISA, 2025).

2.4 Governance Lag and Emerging Risk Tensions

In parallel with technical advancement, governance frameworks have struggled to mature at the same pace. Existing regulatory, assurance, and oversight models were largely designed for deterministic systems with inspectable decision logic and predictable behavior (ISO, 2018). AI enabled security tools challenge these assumptions by introducing probabilistic decision making, opaque models, and continuous learning behavior (NIST, 2025).

As a result, organizations may find it difficult to explain, audit, or contest security decisions generated by AI systems, even when those decisions carry significant operational, legal, or safety implications. This governance lag has become increasingly visible as AI moves from experimental deployments into mission critical security functions (WEF, 2026).

2.5 Positioning AI Enabled Cybersecurity within Enterprise Risk Management

Taken together, the evolution of AI in cybersecurity reflects a complex interaction between technological innovation, adversary adaptation, and governance readiness. AI has become embedded across both offensive and defensive dimensions of cyberspace, reshaping how cyber risk is generated, detected, and managed (ENISA, 2025; WEF, 2026).

Understanding this evolution is essential for situating AI enabled cybersecurity within enterprise risk management frameworks, rather than treating it solely as a technical enhancement. AI enabled cybersecurity risk should be governed through the enterprise risk management framework, because its impacts extend across the organization (ISO, 2018; NIST, 2024). While

cybersecurity teams manage security tools and AI teams oversee model development and use, the enterprise risk function determines acceptable risk levels, accountability, and escalation to senior leadership. This framing establishes the foundation for examining AI enabled threats and defenses in the subsequent sections.

3. AI as an Enabler of Advanced Cyber Threats

The same artificial intelligence (AI) capabilities that enhance defensive cybersecurity operations have also reshaped the offensive threat landscape. For adversaries, AI increases the scale, speed, and adaptability of cyberattacks while reducing the level of technical expertise traditionally required to conduct sophisticated operations (ENISA, 2025; WEF, 2026). Rather than creating entirely new categories of cyber threats, AI accelerates, refines, and amplifies existing attack techniques across multiple stages of the cyberattack lifecycle, thereby increasing both their effectiveness and impact.

3.1 AI Enabled Social Engineering and Phishing

One of the most visible applications of AI in offensive cyber activity is social engineering and phishing. Generative AI enables attackers to produce linguistically fluent, contextually relevant, and highly personalized content at scale (ENISA, 2025). These capabilities undermine traditional indicators of malicious intent, such as poor grammar or generic messaging, and reduce the effectiveness of conventional user awareness training and content based email filtering.

For example, AI generated phishing campaigns can tailor messages to specific organizational roles, reference recent projects or public information, and adapt language to regional or cultural contexts. As a result, detection increasingly shifts away from static content analysis toward behavioral and contextual signals, such as anomalous user



actions or deviations from normal communication patterns (WEF, 2026).

3.2 Deception, Impersonation, and Deep-fake Technologies

AI has also expanded the feasibility and credibility of deception through audio and visual manipulation. Deep-fake technologies allow adversaries to convincingly impersonate trusted individuals, such as executives or operational personnel, in voice or video communications (WEF, 2025; ENISA, 2025). These techniques increase the success rate of fraud, coercion, and manipulation attempts, particularly in time sensitive or high pressure situations.

Such attacks damage trust in digital identity systems, creating operational, reputational, and societal risks that go far beyond immediate monetary losses (WEF, 2026). The ability to fabricate realistic communications challenges existing trust structures within organizations and complicates verification processes that rely on voice, video, or visual confirmation.

3.3 Automated Reconnaissance and Vulnerability Discovery

Beyond social engineering, AI significantly enhances reconnaissance and vulnerability discovery. Machine learning assisted tools can automate the analysis of large and complex attack surfaces, rapidly identifying misconfigurations, prioritizing exploitable weaknesses, and adapting targeting strategies in response to defensive controls (ENISA, 2020; ENISA, 2025). This capability compresses detection and response windows and challenges reliance on traditional patching cycles and perimeter based defenses.

For instance, AI assisted scanning tools can continuously analyze exposed services across cloud, enterprise, and operational environments, adjusting scanning behavior based on observed defensive measures. This enables attackers to

identify and exploit vulnerabilities more quickly than manual techniques would allow.

3.4 Implications for Critical Infrastructure Environments

For organizations that operate critical infrastructure, the implications of AI enabled offensive capabilities are particularly severe. AI driven cyberattacks can simultaneously exploit information technology (IT) and operational technology (OT) dependencies, increasing the likelihood that a single intrusion propagates across interconnected systems and causes cascading failures (CISA, 2024b; WEF, 2026). The convergence of digital and physical processes amplifies the potential operational, safety, and societal impact of such attacks.

In addition, adversaries may directly target the AI systems used for defense, for example by manipulating training data, crafting adversarial inputs, or influencing model behavior to degrade detection accuracy (NIST, 2025). Such techniques undermine the effectiveness of AI enabled security controls and introduce new challenges for attribution, escalation, and incident response.

3.5 Framing AI Enabled Threats within Enterprise Cyber Risk

Collectively, these dynamics complicate the ability of organizations to understand what has occurred during an incident, respond at the appropriate organizational level, and assign responsibility with confidence. AI enabled attacks may operate at machine speed, adapt to defenses in real time, and exploit both technical and organizational trust relationships (WEF, 2026).

Accordingly, AI should be understood as an enabler that strengthens and accelerates advanced cyber threats within existing enterprise cyber risk, rather than as a separate or isolated risk category. This framing provides a foundation for examining how organizations are deploying AI

driven defensive capabilities, as discussed in the following section, and why robust governance and enterprise risk management mechanisms are essential to sustaining effective cybersecurity in an AI enabled threat environment (ISO, 2018).

4. AI Driven Defensive Capabilities in Cybersecurity

The adoption of artificial intelligence (AI) in cybersecurity defense has been driven by the increasing scale, speed, and complexity of modern digital environments. Large enterprises and critical infrastructure operators generate vast volumes of security telemetry from networks, endpoints, cloud platforms, and operational systems (WEF, 2026). Traditional rule based tools and human centric analysis are increasingly unable to process this information in a timely and comprehensive manner. AI driven cybersecurity systems address this limitation by enabling near real time analysis of large data streams, identifying patterns associated with malicious activity, and supporting faster and more scalable decision making within security operations (NIST, 2024).

4.1 Large Scale Telemetry Analysis and Real Time Detection

One of the primary contributions of AI to cybersecurity defense is its ability to analyze high volume, high velocity telemetry data in near real time. Machine learning models can ingest logs, network flows, and system events from diverse environments and identify correlations or anomalies that may indicate emerging threats (NIST, 2024).

This capability is particularly valuable in complex operational environments. For example, a power grid operator may collect millions of logs per hour from both information technology (IT) and operational technology (OT) systems. An AI based monitoring platform can continuously analyze these data streams and rapidly highlight unusual

activity, such as unexpected communication between a control system and an external network within seconds, whereas human analysts may require significantly more time to detect such patterns.

4.2 Behavioral Analytics and Anomaly Detection

Behavioral analytics and anomaly detection represent some of the most established defensive applications of AI in cybersecurity. Rather than relying solely on predefined attack signatures or known indicators of compromise, AI systems learn baseline patterns of normal behavior for users, devices, and systems (ENISA, 2020). Deviations from these learned patterns are then flagged as potential indicators of compromise, insider threats, or previously unknown attack techniques.

4.3 AI Integration within Security Operations Centers

AI has also become a core component of modern security operations centers (SOCs) through its integration with security information and event management (SIEM) and security orchestration, automation, and response (SOAR) platforms (NIST, 2024; CISA, 2024a). In this context, AI supports alert correlation, incident prioritization, and, in some cases, automated response actions.

4.4 Enhancement of Threat Intelligence Capabilities

Beyond operational detection and response, AI also enhances threat intelligence by enabling faster analysis of unstructured data sources, including vulnerability disclosures, security research reports, and online forums (WEF, 2025). By processing these sources at scale, AI systems can help organizations anticipate emerging threats and adapt defensive measures proactively.

4.5 Dependence on Data Quality and Emerging Limitations

Despite these advantages, the effectiveness of AI driven defensive capabilities depends heavily on data quality, relevance, and governance (NIST, 2025). Incomplete telemetry coverage, poor quality data, or biased training datasets can reduce detection accuracy and create blind spots.

Many AI models function as “black boxes,” meaning their internal decision making processes are difficult to interpret or explain. This lack of transparency can reduce trust and complicate auditability, particularly when automated actions lead to service disruption (ISO, 2018; NIST, 2025).

4.6 Implications for Critical Infrastructure and Control Assurance

These limitations are especially significant in critical infrastructure environments, where automated cybersecurity responses may have physical or safety consequences (CISA, 2024b). From a control and assurance perspective, AI driven defense challenges traditional validation models.

5. Governance, Risk, and Compliance Challenges of AIEnabled Cybersecurity

The integration of artificial intelligence (AI) into cybersecurity does not introduce a new category of enterprise cyber risk. Cyber risks such as unauthorized access, service disruption, or compromise of operational technology systems are already identified, owned, and monitored within existing enterprise risk management (ERM) frameworks and risk registers. What AI fundamentally changes is how risk events associated with those risks are detected, interpreted, and acted upon by cybersecurity controls, giving rise to new governance, risk, and compliance (GRC) challenges.

Most organizations manage cybersecurity through mature arrangements that include operational controls, business line level

risk registers, and enterpriselevel oversight mechanisms. AIenabled cybersecurity does not invalidate these structures. However, it alters control behavior, decision authority, and assurance expectations by introducing probabilistic and adaptive mechanisms into functions that were previously deterministic and repeatable.

These challenges are particularly acute in critical infrastructure environments, where cyber risk events can translate directly into operational disruption, safety impacts, and loss of essential services. In such contexts, weaknesses in governance do not remain theoretical; they materialize as enterpriselevel consequences.

5.1 How AI Changes Risk Event Detection and Control Behavior

Artificial intelligence changes cybersecurity in two related but distinct ways. First, it changes how risk events (operational signals that a known enterprise risk may be materializing) are detected and interpreted. Second, it changes how cybersecurity controls behave once such risk events are detected. Distinguishing between these two effects is essential for understanding the resulting governance challenge.

First, AI changes how risk events are detected and interpreted.

Traditional cybersecurity controls detect risk events through deterministic mechanisms such as predefined rules, known signatures, and fixed thresholds. A risk event is detected only when explicitly defined conditions are met, and the rationale for detection can be traced directly to documented logic. In contrast, AIenabled systems detect risk events by analyzing deviations from learned patterns of normal behavior across large volumes of historical and realtime data. Instead of identifying explicit violations, AI infers the likelihood that a risk event is emerging based on contextual and behavioral indicators. As a result, risk events

are surfaced as probabilistic assessments rather than categorical determinations. This enables earlier detection of novel or subtle threat activity but introduces interpretation uncertainty.

Second, AI changes how cybersecurity controls behave after risk events are detected.

In deterministic environments, detection of a risk event leads to predictable control behavior, such as generating a specific alert or invoking a standard response workflow, followed by human decisionmaking regarding escalation or remediation. Alenabled controls introduce variability into this process. Because security decisions rely on probabilitybased risk scoring rather than fixed rules, the same type of event may trigger different responses depending on surrounding context, how models interpret the behavior, and how activity patterns evolve over time. As models adapt, control behavior becomes adaptive rather than strictly repeatable.

For example, an electricity transmission operator may classify unauthorized access to control networks as a highimpact enterprise cyber risk within its ERM risk register. Deploying an Albased anomaly detection system in the operational technology environment does not introduce a new enterprise risk. What changes is how potential manifestations of that risk are detected and managed. Instead of detecting explicit access violations, the AI system identifies behavioral deviations. Instead of triggering consistent thresholdbased alarms, the control produces probabilistic outputs that influence escalation and response decisions differently across scenarios.

The governance challenge, therefore, is not about identifying enterprise risks, as this remains largely unchanged. Instead, it is about governing adaptivecontrol behavior. As cybersecurity controls shift from predictable, rulebased mechanisms to probabilistic, learning systems, organizations

must clearly define how Al detected risk events are interpreted, how much decisionmaking authority is delegated to Al enabled controls, and how assurance is maintained when control behavior can no longer be fully anticipated or explained through static rules alone.

5.2 Decision Opacity and Explainability as Governance Constraints

Al enabled cybersecurity introduces decision opacity that challenges established governance practices. Many AI models cannot provide clear, humanreadable explanations for why a specific risk event was flagged, deprioritized, or escalated. While such opacity may be tolerable for lowimpact activities such as alert triage, it becomes problematic when AI outputs influence decisions with material operational, financial, or safety consequences.

Consider an Al enabled security orchestration platform at a water utility that automatically isolates a network segment following detection of anomalous traffic. Although the action may prevent a potential intrusion, it may also disrupt monitoring or control functions essential to water treatment operations. During postincident reviews, the lack of clear traceability as to why the AI initiated isolation at a specific confidence threshold complicates regulatory reporting, audit scrutiny, and internal assurance activities.

In Al enabled cybersecurity, explainability is therefore not a technical preference. It is a governance requirement, particularly where Al mediated control actions can affect enterpriselevel outcomes.

5.3 Accountability and Risk Ownership in Al Mediated Decisions

AI also complicates accountability. Traditional cybersecurity controls are typically assigned to clearly defined owners responsible for their design, operation, and effectiveness. Al enabled controls distribute technical influence across



multiple actors, including data providers, model developers, vendors, system integrators, and operational teams. Despite this distribution, enterprise accountability for outcomes cannot be delegated.

For example, a healthcare organization deploying a third-party AI-based endpoint protection solution may experience an automated shutdown of a medical imaging device following misclassification by the model. While technical responsibility may appear fragmented, accountability for patient safety and service continuity remains firm with the organization.

Governance frameworks must therefore distinguish clearly between distributed technical responsibility and nondelegable enterprise accountability.

5.4 Model and Data Risk as Control Effectiveness Issues

AI-enabled cybersecurity introduces model and data risks that are often implicit rather than explicitly reflected in existing cyber risk taxonomies. AI controls depend on the quality, representativeness, and stability of training and operational data. Over time, infrastructure changes, evolving threat patterns, or shifts in user behavior may degrade model performance without immediate visibility.

For example, a user and entity behavior analytics model trained primarily on office-hour activity may begin generating excessive false positives after an organization transition to continuous operations. Analysts experience alert fatigue, while genuine risk events are obscured. In this scenario, the enterprise cyber risk remains unchanged, but the effectiveness of the control has silently deteriorated.

This creates governance challenges related to continuous validation, monitoring, and assurance of AI-enabled controls.

5.5 Automation Bias and the Erosion of

Human Judgment

As AI-enabled tools become embedded in security operations, organizations face the risk of automation bias. Under time pressure, analysts may increasingly defer to AI-generated assessments, reducing independent judgment and contextual challenge.

In managed security operations centers supporting multiple clients, AI-generated severity scores may be routinely accepted without sufficient scrutiny. When long-running intrusions are uncovered later, it often becomes clear that human awareness of asset importance or operational risk would have justified escalating concerns much earlier.

Governance mechanisms must therefore explicitly preserve human judgment in high-consequence decisions.

5.6 Regulatory and Compliance Implications

Regulatory and compliance pressures further amplify these governance challenges. Legal and regulatory frameworks evolve more slowly than AI capabilities, creating uncertainty around documentation (regulators typically expect clear records of how system works, evidence of why decision made, traceability for audits/investigations), explainability (many regulatory regimes assume that decision can be explained after the act), fallback procedures (traditional regulations assume well-defined fail-safe processes are in place), and acceptable levels of automation, particularly in critical infrastructure sectors.

Organizations may be required to demonstrate that AI-enabled cybersecurity controls do not introduce single points of failure and that human override mechanisms are clearly defined and practicable. Without explicit governance structures, compliance becomes difficult even where technical detection performance improves.

5.7 Implications for Enterprise Risk Management

From an ERM perspective, these challenges highlight the limitations of treating AI-enabled cybersecurity solely as a technical enhancement. AI should be understood as a riskshaping factor within existing enterprise cyber risks. The riskshaping factor that alters how risk events are detected, how controls behave, and how assurance must be maintained, without creating a separate category of risk.

Consistent with both ISO 31000 and COSO Enterprise Risk Management, mature organizations do not treat artificial intelligence as a separate enterprise risk. Instead, they reflect the impact of AI-enabled cybersecurity within existing cyber risk assessments by updating assumptions related to control effectiveness, automation authority, explainability requirements, and oversight mechanisms. In ISO 31000 terms, AI influences risk treatment and control performance rather than constituting a new source of uncertainty, while under COSO ERM it affects how controls support the achievement of objectives. By embedding these considerations into the assessment and governance of established enterprise cyber risks, organizations preserve a stable risk taxonomy while ensuring that changes in control behavior introduced by AI are explicitly governed, monitored, and aligned with risk appetite.

6. Integrating AI-Enabled Cybersecurity into Enterprise Risk Management and Governance

The preceding analysis demonstrates that artificial intelligence fundamentally changes how enterprise cyber risks are governed, rather than redefining what those risks are. Cyber risks such as disruption of essential services, compromise of operational technology, or loss of system integrity are already recognized, owned, and monitored within enterprise risk management (ERM) frameworks. AI-enabled cybersecurity does

not add new risks to the risk register. Instead, it transforms how risk events associated with those risks are detected and how controls behave in response, which places new demands on governance structures.

Sustainable adoption of AI-enabled cybersecurity therefore requires explicit integration into existing ERM and governance arrangements, not the creation of parallel risk frameworks. This integration cannot be achieved through technical controls alone. It requires governance mechanisms that preserve enterprise-level accountability, align automation with board-approved risk appetite, and ensure that AI-mediated decisions remain subject to appropriate oversight and assurance.

6.1 Framing AI-Enabled Cybersecurity as a Risk-Shaping Factor within ERM

Within ERM, enterprise risks are defined in relation to organizational objectives and monitored over time. AI-enabled cybersecurity should be positioned within this structure as a riskshaping factor, rather than as a separate risk category. AI does not change the nature of enterprise cyber risks; it modifies how those risks manifest operationally and how effectively they are controlled.

By framing AI in this way, organizations can maintain stable risk taxonomies while explicitly recognizing that AI influences:

- How early or late risk events are detected
- How consistently controls behave under similar conditions
- How much human judgment is displaced or compressed by automation

This approach allows ERM assessments to remain relevant without becoming technology-specific, preserving the abstraction necessary for enterprisewide risk oversight.

6.2 Aligning AI-enabled Cybersecurity with Enterprise Risk Appetite

Enterprise risk appetite defines the level and type of risk the organization is willing to accept in pursuit of its objectives. This appetite must also govern how much decision authority can be delegated to AI-enabled cybersecurity controls.

In organizations with a low appetite for operational disruption or safety risk, particularly critical infrastructure operators, AI may be permitted to:

- Monitor environments continuously
- Detect and correlate risk events
- Recommend response options

However, decisions that could affect service continuity, safety, or regulatory compliance must remain subject to human validation and defined escalation thresholds. Explicitly aligning automation authority with enterprise risk appetite prevents AI from implicitly redefining acceptable risk at the operational level.

6.3 Governance Design and Accountability across the AI Lifecycle

Effective governance requires clear allocation of decision authority and accountability throughout the AI cybersecurity lifecycle. While AI-enabled controls involve multiple parties including vendors, data providers, integrators, and internal teams; accountability for enterprise outcomes remains with the organization.

Governance arrangements must therefore ensure that:

- Cybersecurity functions retain operational responsibility for AI-enabled controls
- Risk and compliance functions provide independent oversight and assurance
- Enterprise leadership remains accountable for impacts on operations, safety, and trust

Clear escalation pathways and explicit acceptance of residual risk are essential when AI-mediated control behavior deviates from expectations.

6.4 Integrating AI into Risk Assessment and Treatment Processes

Integration is most effective when AI-enabled cybersecurity is assessed using existing ERM risk assessment and treatment processes. This does not involve redefining enterprise risks, but evaluating how AI influences:

- The likelihood and detectability of risk events
- The effectiveness and reliability of controls
- The speed and consistency of response actions

Risk treatment strategies must therefore address both technical controls (such as model monitoring and data governance) and governance controls (such as decision authority limits and human oversight requirements). Treating AI purely as a technical enhancement obscures these governance considerations.

6.5 Moving from Periodic to Continuous Assurance

Traditional assurance models assume relatively stable, deterministic controls that can be validated periodically. AI-enabled cybersecurity challenges this assumption. Models evolve, data distributions change, and threat patterns shift continuously.

As a result, organizations must adopt continuous, evidence-based assurance practices that include:

- Ongoing monitoring of model performance and drift
- Traceability of AI-influenced decisions
- Documentation of escalation and override actions
- Regular validation against enterprise risk appetite

This shift ensures that Al-enabled controls remain demonstrably fit for purpose over time.

7. Implications for Critical Infrastructure Organizations

The governance implications of Al-enabled cybersecurity are magnified in critical infrastructure environments because cyber risk events can translate directly into operational disruption, safety hazards, and societal impact. While enterprise cyber risks are already well recognized in these sectors, AI increases the consequences of governance failure by accelerating decisionmaking and introducing adaptive control behavior into high-consequence systems.

7.1 IT/OT Convergence and Amplified Governance Complexity

Critical infrastructure environments are characterized by convergence between information technology (IT) and operational technology (OT). While this convergence improves visibility and efficiency, it also expands the attack surface and increases the potential impact of cyber incidents.

AI systems trained primarily on IT telemetry may not generalize safely to OT contexts, and automated responses that are acceptable in IT environments such as system isolation may be hazardous when applied to OT systems. Governance must therefore prioritize enterprise-level oversight over local optimization of detection or response speed.

7.2 AI in CyberPhysical Detection and Monitoring

AI enhances detection by correlating cyber and physical indicators and identifying subtle anomalies that span digital and physical domains. However, false positives that are tolerable in IT systems may disrupt industrial processes or create safety risks in OT environments.

Al-enabled detection must therefore be explicitly

adapted to cyberphysical constraints, with governance mechanisms ensuring that detection sensitivity does not translate directly into unsafe automated action.

7.3 AI as an Enabler of Resilience, not a Replacement for Foundational Controls

Improvements in threat detection and monitoring achieved through Al-enabled cybersecurity do not, on their own, address weaknesses in system architecture, network segmentation, or underlying operational resilience. There is a governance risk that heavy reliance on AI-driven detection creates a false sense of security if attention is focused narrowly on alert volumes, detection accuracy, or response speed, rather than on whether core systems are designed to withstand and recover from disruption.

Al-enabled cybersecurity should therefore be applied as a supporting capability that strengthens existing resilience measures, not as a substitute for fundamental architectural design, defense in depth, and operational resilience practices. Effective governance ensures that AI augments these foundations by improving visibility and early warning, while responsibility for resilience remains anchored in sound system design, robust controls, and tested recovery capabilities.

7.4 Accountability across Complex Ecosystems

Critical infrastructure operations often rely on complex ecosystems of vendors, cloud providers, and integrators. While technical responsibilities may be shared across these actors, accountability for service continuity, safety, and public trust remains concentrated with the infrastructure operator.

Governance arrangements must explicitly preserve this accountability across the AI lifecycle, including procurement, configuration, monitoring, and response.

7.5 Lifecycle Governance and Change Control

Changes to AI models, such as retraining, parameter tuning, or data source modification, can alter operational risk profiles in ways comparable to changes in physical control systems. In OT environments, such changes must be governed with rigor equivalent to OT change management, including review, testing, authorization, and documentation.

7.6 Incident Response, Explainability, and Organizational Learning

When AI influences detection or response during an incident, postincident analysis must remain transparent and explainable. Governance mechanisms must preserve decision traceability to support regulatory reporting, internal assurance, and learning. Reliance on opaque AI outputs undermines these objectives.

In summary for critical infrastructure organizations, AI-enabled cybersecurity increases the stakes of governance failure, rather than the number of enterprise cyber risks. Adaptive control behavior, accelerated decisionmaking, and IT/OT convergence all amplify the consequences of insufficient governance.

These realities underscore the need for a governancecentric approach that preserves existing ERM structures while explicitly constraining AI behavior. The GCORE framework, introduced in the following section, addresses this requirement by translating enterprise risk appetite into concrete governance controls for AI-enabled cybersecurity and embedding continuous oversight and assurance across the lifecycle.

8. The GCORE Framework: A GovernanceCentric Translation of ERM into AIEnabled Cybersecurity

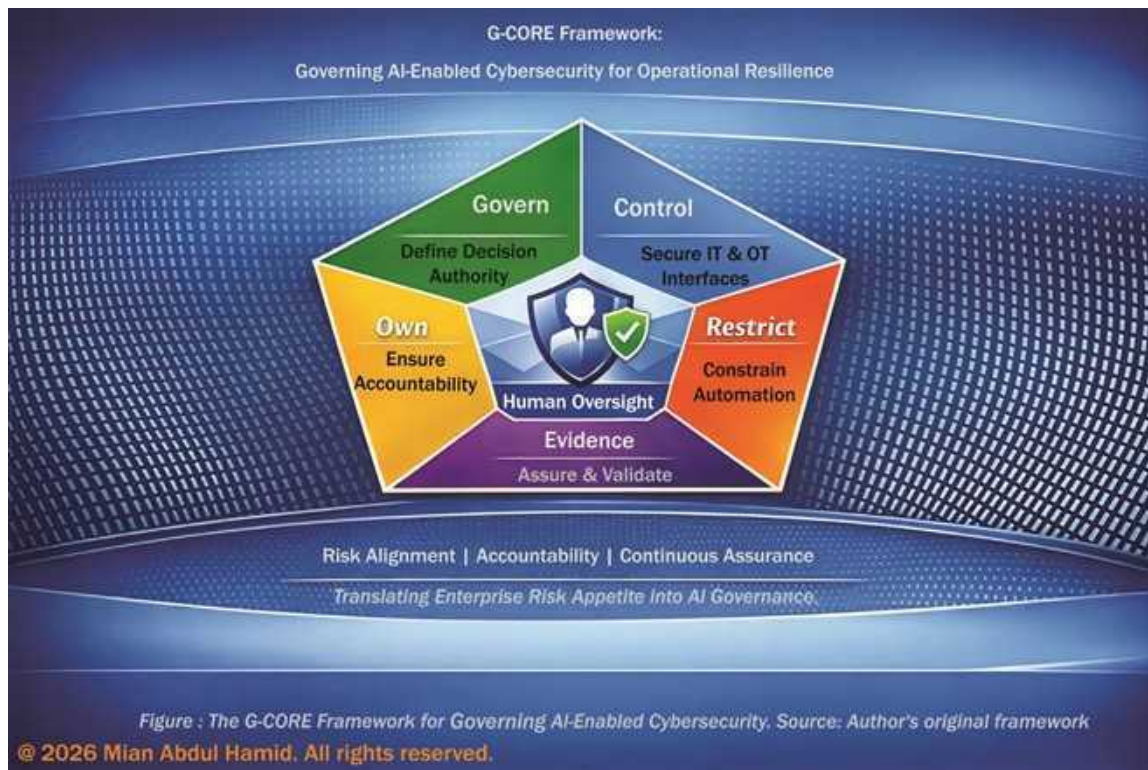
The governance challenges discussed in Sections

5 through 7 do not arise because organizations lack enterprise cyber risk management, but because artificial intelligence fundamentally changes how cybersecurity controls behave and influence outcomes. As AI becomes embedded in detection, alert triage, and response processes, longstanding assumptions about deterministic control behavior, explainability, and localized decisionmaking can no longer be relied upon. This shift is especially significant in critical infrastructure environments, where cybersecurity decisions may have immediate implications for operations, safety, and public trust.

This challenge is addressed through the introduction of the GCORE framework, a governancecentric approach to operational resilience in operational technology environments. GCORE provides a structured, governanceenabled approach that ensures AI-enabled cybersecurity remains firmly embedded within existing enterprise risk management (ERM) constructs. Rather than expanding the enterprise risk universe or introducing parallel governance structures, GCORE translates enterpriselevel governance intent, such as risk appetite, accountability, and assurance expectations into clear, operational constraints on how AI-enabled cybersecurity controls are allowed to observe, decide, and act.

In this respect, GCORE is not a technical security framework. It is a governancecentric framework that functions as a translation mechanism, connecting ERM principles to the operational behavior of AI-enabled cybersecurity controls. By doing so, it closes the gap between enterprise risk governance and daytoday cybersecurity execution. The framework enables organizations to harness AI-driven detection and automation while preserving enterprise oversight, accountability, and resilience. Its relevance is greatest in critical infrastructure contexts, where the tolerance for governance failure is low and the consequences are disproportionately high.

Figure 2: G-CORE Framework: Governing AI-Enabled Cybersecurity for Operational Resilience



8.1 Design Objectives of GCORE

GCORE is designed around three objectives that reflect core enterprise risk management principles:

1. Preserve ERM abstraction: GCORE avoids introducing technology-specific risk categories into enterprise risk registers. Enterprise cyber risks remain defined in relation to organizational objectives, while AI is treated as a factor that influences how controls behave and how effectively risks are managed.
2. Constrain AI behavior in line with risk appetite:
3. The framework ensures that AI-enabled automation operates strictly within board-approved risk appetite, preventing technical capability or efficiency considerations from implicitly redefining acceptable levels of enterprise risk.

4. Sustain trust and accountability through assurance:
5. GCORE embeds explicit ownership and continuous assurance across the AI cybersecurity lifecycle, maintaining confidence in governance even as models, data, and threat environments evolve.

To operationalize these objectives, GCORE is implemented through five mutually reinforcing governance elements: Govern, Control, Own, Restrict, and Evidence, supported by a crosscutting requirement for human oversight. Together, these elements provide a practical, repeatable means of governing AI-enabled cybersecurity in complex operational environments.

8.2 Govern: Establish Decision Authority Before Automation

The Govern element requires organizations to define decision authority before AI-enabled cybersecurity capabilities are deployed. As AI

increasingly participates in decisions such as alert prioritization, network isolation, or automated containment, there is a risk that decision authority shifts implicitly from enterprise governance to technical systems.

Under GCORE, organizations explicitly define:

- Which decisions AI may inform
- Which decisions AI may recommend
- Which decisions AI may assist
- Which decisions AI may execute, and under what constraints

By establishing decision authority in advance, automation is governed by enterprise intent rather than technical possibility. In critical infrastructure environments, this discipline is essential to prevent un-reviewed automation from introducing operational or safety risks that exceed enterprise risk tolerance.

8.3 Control: Govern AI Interfaces as Risk Surfaces

Alenabled cybersecurity introduces new risk surfaces, particularly at the interfaces between information technology (IT), operational technology (OT), data pipelines, and thirdparty services. The Control element recognizes that governance must extend beyond AI models themselves to the interfaces through which AI systems observe environments and influence actions.

GCORE requires explicit governance over:

- AI data sources and telemetry inputs
- Integration points between AI analytics and control mechanisms
- Interfaces spanning IT and OT environments
- Reliance on third-party platforms and external services

Governing these interfaces prevents Alenabled controls from bypassing architectural safeguards

or creating unmanaged systemic dependencies that fall outside enterprise oversight.

8.4 Own: Preserve Accountability for Outcomes

Although Alenabled cybersecurity distributes technical responsibility across vendors, developers, integrators, and internal teams, enterprise accountability for outcomes remains indivisible. The Own element reinforces this distinction.

Under GCORE:

- Cybersecurity functions retain operational responsibility for implementing and managing Alenabled controls
- Enterprise leadership retains accountability for impacts on operations, safety, regulatory compliance, and service continuity

This separation resolves a fundamental governance tension: while responsibility for implementation may be shared, accountability for consequences must remain explicit and enforceable. Clear ownership is therefore required for escalation decisions, exception handling, and acceptance of residual risk.

8.5 Restrict: Translate Risk Appetite into Automation Constraints

The Restrict element converts enterprise risk appetite into practical limits on automation. Rather than treating automation as an all-or-nothing proposition, GCORE treats it as a graduated capability.

Within this approach:

- Low-impact activities, such as monitoring, correlation, and alert triage, may be automated with limited oversight
- Higher-impact actions, including system isolation, OT disruption, or failsafe activation, require human authorization and predefined escalation thresholds

These constraints ensure that improvements in speed or efficiency do not unintentionally exceed the organization's tolerance for operational disruption, safety risk, or service continuity impacts.

8.6 Evidence: Sustain Continuous Assurance

AI-enabled cybersecurity controls evolve continuously as models are retrained, data distributions change, and threat environments shift. The Evidence element treats AI-enabled controls as living risk controls that require ongoing validation rather than onetime approval.

Under GCORE, assurance encompasses:

- Continuous monitoring for model drift and performance degradation
- Explainability and traceability of AI-influenced decisions
- Auditability of automated or AI-assisted actions

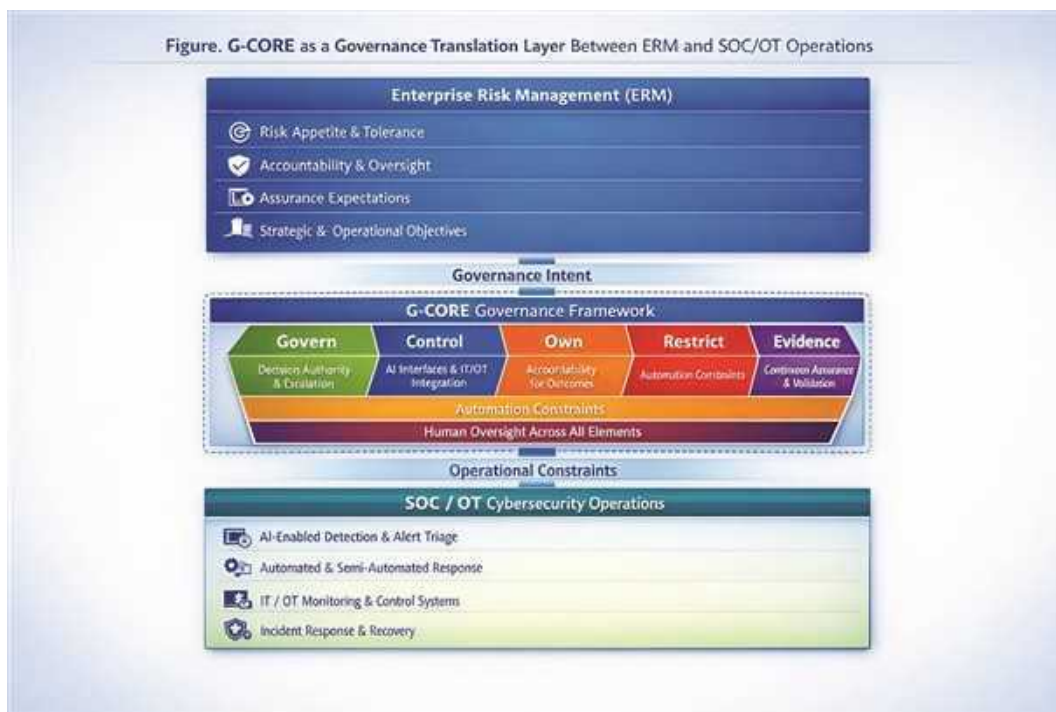
- Documentation of decision logic, overrides, and escalation outcomes

This evidence-based approach ensures that governance remains effective over time and that enterprise oversight keeps pace with dynamic AI systems.

8.7 CrossCutting Principle: Human Oversight

Across all five elements, GCORE treats human oversight as a governance requirement, not a technical fallback. Human judgment must remain available for challenge, escalation, and accountability, particularly in high-consequence scenarios. This principle ensures that AI augments, rather than replaces, responsible decision-making in cyberphysical environments.

Figure 3: G-CORE as a Governance Translation Layer b/w ERM and SOC/OT Operations



9. Conclusion

This paper has argued that the integration of artificial intelligence into cybersecurity does not create a new category of enterprise cyber risk. Instead, AI fundamentally reshapes how existing cyber risks must be governed by altering the behavior of controls, redistributing decision authority, and changing the nature of assurance. These effects are most pronounced in critical infrastructure environments, where cybersecurity outcomes are inseparable from operational continuity, safety, and public trust.

Through analysis of Alenabled threats, defensive capabilities, and governance challenges, the paper demonstrated that effective Alenabled cybersecurity cannot be achieved through technical advancement alone. Sustainable adoption requires explicit alignment with enterprise risk appetite, clear preservation of accountability for outcomes, carefully constrained automation authority, and continuous, evidencebased assurance. Without these governance foundations, AI risks creating a false sense of control, improving detection metrics while obscuring new dependencies, control uncertainties, and failure modes.

To address this governance gap, the paper introduced the GCORE framework as a governancecentric means of integrating Alenabled cybersecurity within existing enterprise risk management constructs. Rather than expanding the enterprise risk universe or introducing technologyspecific risk categories, GCORE operates as a translation mechanism: it converts enterpriselevel risk governance intent into clear, enforceable constraints on Alenabled cybersecurity control behavior. By embedding lifecycle oversight, defining decision authority, and aligning automation with risk appetite, GCORE preserves enterpriselevel transparency, accountability, and resilience.

By positioning Alenabled cybersecurity as a riskgoverned capability, GCORE enables organizations, particularly operators of critical infrastructure, to realize the defensive advantages of AI without compromising governance

integrity or operational resilience. In doing so, the framework provides a practical pathway for aligning cybersecurity operations with enterprise risk management and addresses a central challenge in the responsible adoption of AI within cyberphysical systems.

Reference Documents:

- **National Institute of Standards and Technology (NIST).** *The NIST Cybersecurity Framework (CSF) 2.0.* NIST Cybersecurity White Paper CSWP29, 2024.
- **National Institute of Standards and Technology (NIST).** *Cybersecurity Framework Profile for Artificial Intelligence (Cyber AI Profile), Preliminary Draft.* NISTIR 8596, 2025.
- **International Organization for Standardization (ISO).** *ISO 31000:2018 — Risk Management: Guidelines* (confirmed 2023).
- **Cybersecurity and Infrastructure Security Agency (CISA).** *Deploying AI Systems Securely: Best Practices for Securing AI Systems and Their Supply Chains.* Joint guidance with NSA, FBI, and international partners, 2024.
- **Cybersecurity and Infrastructure Security Agency (CISA).** *Principles for the Secure Integration of Artificial Intelligence in Operational Technology.* 2024.
- **European Union Agency for Cybersecurity (ENISA).** *Artificial Intelligence Cybersecurity Challenges.* ENISA Threat Landscape Report, 2020.
- **European Union Agency for Cybersecurity (ENISA).** *AI Threat Landscape 2025.* ENISA, 2025.
- **World Economic Forum (WEF).** *Artificial Intelligence and Cybersecurity: Balancing Risks and Rewards.* WEF in collaboration with the University of Oxford, 2025.
- **World Economic Forum (WEF).** *Global Cybersecurity Outlook 2026.* WEF and Accenture, 2026.

Note: Editorial and drafting support was assisted by Alenabled tools. The framework, analysis, and conclusions presented are entirely the author's work.



“DIRECTORY OF PAKISTANI ENGINEERS IN KSA”



Architects and Town Planners

**BABAR MEHMOOD**

Architect
ABV Rock Group
Riyadh
B.Arch. UET Lahore 2004

**FAROOQ IQBAL**

Principal Architect
Saudconsult
P.O.Box 2341, Riyadh 11451
Email: fiqbal@saudconsult.com
B.Arch UETL 89

HIFZA SHAFI

Architect
Saud Consult
Riyadh
B.Arch UET Lhr. 2008

MAHUM ABBAS

Architect/Design Co-ordinator
Absa Paul Company
Riyadh
Email: mahum.abbas96@gmail.com
B.Arch UMT Lahore 2019

**MOHAMMAD WASEEM**

Architect
Dar Al Majd Consulting Office
P.O. Box 60212, Riyadh 11545
B.Arch DCET 25

**NOOR ULLAH KHALID**

Sr Project Manager
Elseif Engineering Contracting Est.
P.O. Box 2774, Riyadh 11461
Email: nukhalid@hotmail.com
B.Arch UETL 76

RUKHSUDDIN SHAIKH

Senior Architect
A.M. Al-Issa
P.O. Box 41984, Riyadh 11531
B. Arch UETL 80

**SALMAN PERVEZ**

Senior Architect
Dar Engineering, Riyadh
POBox 87236, STC Bldg Exit 5, Riyadh
Email: salmanparvez@gmail.com
B Arch, National Col of Arts 01, M Arch, Ger 04

**SULAYMAN SAFDAR MUHAMMAD SAFDA**

Architectural Lead
Assystem Radicon
An Nafal, Riyadh, KSA
Email: sulaymansafdar@gmail.com
B.E Arch, U of Mgmt & Tech Lhr 18

**SYED NAEEM ALI**

Architect
Zuhair Fayez Partnership
P.O. Box 5445, Jeddah 21422
B. Arch. NCA 94

TAMANNA JALALI

Architect
None
Riyadh
Email: tjarchitecture@yahoo.com
MSc AIOU Islamabad 2023

**UMAR JAVED**

Sr. Engineer, Structural
Dar International Engineering Consultancy
Damamam Office
Email: ae.umar@gmail.com
B.Sc. Arch. UETL 09, M.Sc. Building Engg. 15

**WASEEM AHMAD**

Senior Architect
Saudi Consulting Services
Riyadh
Email: wahad@saudconsult.com
B.Arch UETL 97

**ZEESHAN SABIR MIRZA**

Lead Architect
Dar International Engg. Consultancy
Riyadh
Email: szdesigners@hotmail.com
B.arch. NCA Lahore 2021

Chemical Engineers

**AAMIR AZIZ KHAN**

Lifting Equipment & Training Manager
RICI
Alkhobar
Email: aakhan503@gmail.com
B.E U of Punjab 2005

**AHMAD USMAN TAHIR**

Project Engineer
Suido Kiko Middle East
Riyadh
Email: engineerusman@hotmail.co.uk
BSc Chem UETL 06, MSc Environ Glasgow U 10

**ALI IMTIAZ**

Sales Manager - Package Solution Oil & Gas
Gulf Commercial Group - Abu Dhabi
Abu Dhabi
Email: lukyali_4u@hotmail.com
S.Sc. (Chem) UETL 07

**FARAZ KHURSHID**

Sr. Business Development Engr.
Gulf Sahar Trading and Industrial Company
Dammam
Email: faraz.khurshid@hotmail.com
BE Chem. UET 12

**HAFIZ ALI ALVI**

Piping Material Engineer
JGC Gulf International
khobar
Email: alimalvi300@hotmail.com
B.Sc. (Chem) UP 06

**IMTIAZ AHMAD**

Projects & Operations
Ranco Group
P.O.Box 26660, Riyadh - 11496
Email: talhaimtiaz@gmail.com
B.Sc. (Chem) METU TK 84, M.E. McGill 87

**LAEEQ AHMAD RUMI**

Process/Applications Engr.
SIEMENS
P.O.Box 719, Khobar 31952
B.Sc. (Chem) UOP 02

**ABDULLAH AIJAZ**

HSE Engineer
Saudi Electricity Company
Beside Dallah Driving school, Al Khobar
Email: abdullahmemon1991@gmail.com
B.Sc UET Mehran 14

**AHMED WAQAS**

Sales & Application Engineer
Yusuf Bin Ahmed Kanoo Co. Ltd
Alkhobar
Email: ahmedwaqasmughal@hotmail.com
BSc NFC IET (BZU) Multan 2007

**ASIM ATHAR**

Sr. Design Engineer, Piping
Fluor Arabia Limited
Alkhobar
Email: asim.athar@fluor.com
B.E Punjab U. Lahore 2001

**FAZAL HASSAN**

Project Engineer
Tamimi Industrial Services
Jubail
Email: fhassan@al-tamimi.com
BE (Chem) Uni. Of Gujrat 21

**HASSAN TARIQ MIRZA**

Engineering Manager
China Petroleum
Dammam
Email: hsntariq@hotmail.com
B.E. (Chem) PU 05, MSTQM PU 09

**IQBAL AHMAD CHAUDHRY**

Contact Consultant
Saudi Calcined Petroleum Coke Company
PO Box 35579, Jubail 31961
Email: ia.chaudhry@hotmail.com
B.Sc. (Chem) UETL 69, M.Sc. UETL 71, CE ICF 73

**KAMRAN MALIK**

Sr. Design Engineer, Piping
Fluor Arabia Limited
Jubail
Email: kamran.malik@fluor.com
B.E Punjab Univ 2004

**MAMOON SHAHID**

Technical Sales Engineer
Saudi Industrial Resins LTD
Khobar
Email: mamoon.kocache123@gmail.com
Chemical Engineering

Chemical Engineers



MASOOD A KHAN

Project Engineer
SHARQ
PO Box 10110, Jubail 31961
Email: khamma99@hotmail.com
B.E. (Chem) NED 79



MOHAMMAD JAVAID AGHA

Staff Planner
Petrokemya
P.O. Box 10002, Jubail 31961
Email: plnmja@petrokemya.sabic.com
B.E. (Chem) NED 81, MBA AIM 90



MUHAMMAD AFZAAL AKRAM

PROJECT ENGINEER
WOOD
Alkhobar
Email: votaafzaal@gmail.com
BSC Chemical NFC IET Multan 03



MUHAMMAD AZHAR ALI

Sr. Estimation Engineer
Olayan Descon Engg Co.
P.O. Box 10108, Jubail Industrial City 31961
Email: mazali@olayandescon.com
B.Sc. (Chem) UET 00



MUHAMMAD EJAZ

Incharge - Proposal and Marketing
MCE Gulf Contraction Co. Ltd
PO 3083, dammam 31471 jubail ind. City
Email: ejaz409@yahoo.com
B.Sc. (Chem) NFC IET 05



MUHAMMAD IRFAN IQBAL

Principal Project Engineer
SABIC
PO Box 10040, Jubail 31961
Email: iqbal@sabic.com
B.E. (Chem) PU 81



NABEEL PERVAIZ MALIK

Sector Manager
Aljomaih & Shell Lubricating Oil Co
Dammam
Email: npmalik@hotmail.com
B.Sc. (Chem) UETL 04



OMER FAROOQ

Process Engineer
GCC
P.O.Box 895, Dammam 31421
B.Sc. (Chem) ICET 03, M.S. PIEAS 05



MAZHAR HUSSAIN

Director Operations
M. A. Al-Azzaz Inspection and Testing Services
P.O. Box 31172, Al-Khobar 31952
Email: mazhar@ricionline.com
B.Sc. (Chem) UETL 96, MS UA USA 05



MOHAMMAD NASIR SHAHAB

Senior Petroleum Engineer
SADARA
P.O. Box 10661, Alkhobar
Email: nasir79@gmail.com
B.Sc. (Chem) NFC UET 02



MUHAMMAD ASHAR MUSHTAQ

LEAD ENGINEER PROCESS
SABIC PETROKEMYA
BANDERIA, AL KHOBAR
Email: muhammadasharmushtaq@gmail.com
B.SC. (Chem) NFC IEFR FSD(UETL) 02, MSC (Chem)



MUHAMMAD BILAL SHAKOOR

Business Development Manager
Diversified Lines for Petroleum Services (DLPS)
Las Dunas Village, Villa F-08, Rawabi District, Rakkah
Email: bilalshakoor@hotmail.com
B.Sc. (Chem) NEC 00, MBA Devry Univ USA 03



MUHAMMAD FAISAL MURAD

Senior Process Engineer
SNC Lavalin
Al-Khobar
Email: faisalmurad1@gmail.com
B.E. (Chem) NED 01



MUNZAR HUSSAIN KHAN

Manager Quality Control
SABIC
Al-Khobar
B.E. (Chem) PU 91



OMAR SHUJA SIDDIQUI

Sr Safety Engineer
SABIC
Tower B, Flr 2, EHSS Global Ass, SABIC HQ, POBox .
Email: omارشuja@gmail.com
BBA/MBA, IBA 02/03, B.E. Chemical, Dawood 07



RANA MUHAMMAD ASIF JAMIL

Senior Production Engineer
Sadara Chemical
P.O. Box 10661, Aljubail 31961
Email: muhammad.asif214@gmail.com
B.Sc. (Chem) PU 02, MS (TQM) PU 05

Chemical Engineers

SABA NAZ

Email: engr_53@yahoo.com
BS Mehran University Jamshoro 07



SYED AHSAN ABBAS

Senior Manager
SABIC
P.O.BOX 5101, RIYADH 11422
Email: aabbas569@hotmail.com
B.E. (Chem) NED 80



SYED ALI JODAT

Marketing & Bus. Dev. Mgr.
Gr
Al-Barrak Industrial Services
P.O Box# 36080, Jubail 31961
Email: alijodat@hotmail.com
B.Sc. (Chem) NFC 2000



SYED FASEEH-UDIN

Commercial Manager
ESTE, Dammam
Email: fasihi130@yahoo.com
B.E. (Chem) DCET 02



SYED KAZIM HUSSAIN RIZVI

Senior Safety Engr.
SABIC
PO BOX# 11669 AL JUBAIL
Email: kazim707@yahoo.com
B.E. (Chem) NED 83



SYED KHAWAJA MAQSOOD

Director
Saleh & Abdul Aziz Abahasan
P.O.Box 209, Khobar 31952
Email: chemical@abahsain.com
B.E. (Chem) KU 76



SYED MOHAMMAD ASHFAQ

Environmental Engineer
Jubail Chemical Industries
P.O. Box 10661, Jubail 31961
Email: ashfaq@jana-ksa.com
B.E. (Chem) NED 86



SYED NADEEM ALI

Staff Process Engr.
Petrokemya
P.O. Box 10002, Jubail 31961
B.Sc. (Chem) PU 81, M.E Bradford 84



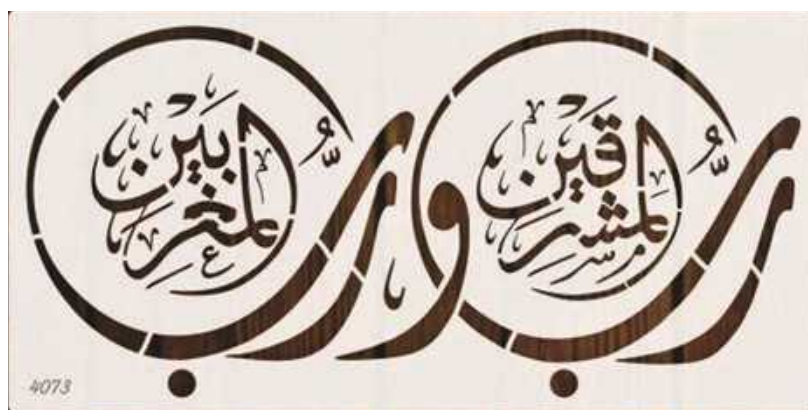
WAJAHAT SAEED TOOR

Operations Manager
Tamimi Industrial Services
PO Box 10952, Jubail 31961
Email: wstoor@al-tamimi.com
B.Sc. (Chem) UETL 69



WASIM ALI

HSE Engineer
Saudi Electricity company
Dammam
Email: WKALI@se.com.sa
BE NFC-IEFR Faisalabad 09



Civil Engineers

ABDAAL AHMAD

Freelancer
Email: abdaalahmedkhan@yahoo.com
BE Civil MCE Nust 22



ABDUL MAJID

Principal Civil/Structural Engineer
SNC Lavalin Favez Engineering (SLFE)
AutoMoto Complex, Rakah, Al-Khobar
Email: engmajid@hotmail.com
B.Sc UET 98, M.Sc UET Lahore 06



ABDUL WAHAB SHAIKH

Planning Engineer
Omrania & Associates
P.O.Box 2600, Riyadh
Email: abdulwahab.shaikh@omrania.com.sa
B.E. (Civil), NED 96, MS (Const Mgmt), UT Malaysia



ABDUR RAUF AZIZ

Projects Manager
Alrabiah Consulting Engineers
PB#9967, Dammam 31423
Email: abdurraufa@hotmail.com
BS UET Lahore 89, MS Structure KFUPM 94



ADEEL RIAZ QURESHI

Senior Structural Engr.
DAR Engineering Riyadh
Tamkeen Tower 7252, Olaya St, AlYasmin Dist. Riyadh
Email: adeel.qureshi@dar_engineering.com
B.Sc UET Taxilla 02, MS (Structural) Korea Adv. Inst. Tech 06

AFTAB AHMED

Construction Manager
Saudi Consulting Services (Saudconsult)
P.O. Box 7352, Jeddah 21462
B.Sc. (CE) UETL 84



AHMAD FAROOQ

Structural Engr.
Saudi Consulting Services
P.O.Box 2341, Riyadh 11461
B.Sc. (CE), UET Taxila 02



AHMAD WARAICH

Cost Control Engineer
Elseif Engineering Contracting Est.
P942, P.O. Box 2774, Riyadh 11461
B.Sc. (CE) NEU Turkey 96



ABDUL AZIZ MUGHAL

Resident Engineer (SAR)
Implementation Supervision Consult (ISC)
PO Box 3900, Riyadh 11481
B.Sc. (CE) UETL 76



ABDUL SATTAR

Project Manager
Maramer Construction Company
Khobar
Email: sattar_729@yahoo.com
BSc Civil Engg. UET Lhr. 2004



ABDUR RASHID HAQ

Procurement Manager
El-Seif Engineering
Riyadh
Email: abdurrasheed_haq@yahoo.com
B.Sc. (CE) UETL 76

ABID WASEEM ASLAM

Project Manager
Manwa Est.
P.O. Box 52169, Riyadh 11563
B.E. (CE) NED 79



AFAQ HUSSAIN SIDDIQI

Quality Control Chief Engr.
ABV ROCK Group KB
P.O. Box 89426, Riyadh 11682
B.E. (CE) NED 80



AFTAB ALAM

Project Manager
Associated Consulting Engineer (ACE)
P.O. Box 543, Makkah
B.E. (CE) NED 68

AHMAD SAEED

Project Engineer
Saudi Consulting Services
Riyadh
Email: leo.abstract@gmail.com
B.Sc. (CE) UETL 02



AHMED ZIYAD

ENGINEER DESIGN CIVIL
DAR Engg International Consultant
SALMAN AL-FARISI STREET, DAMMAM
Email: ziyad.chaudhry@gmail.com
BSc (CE) 15; MSc Transportation Engg., 20 UETL

Civil Engineers



AHSAN RASHID

General Manager
Saadullah Khan Brothers
Al-Rossais Commercial Center, Riyadh
Email: gm@skb-ksa.com
B.Sc. (CE) UETL 74



AHSAN ULLAH

Engineer Design Civil
AL DAR INTERNATIONAL CONSULTANCY
Khobar
Email: ahsanullahgujjar@gmail.com
M.Sc. Structural Engineering



AKHTAR JAWAID NIAZI

Executive Technical Manager
Intl. Contracting Resources Co.
P.O.Box: 31852 Al-Khobar 31952
Email: ajniazi_sa@yahoo.com
B.Sc. (CE) UETL 66



ALTAF HUSSAIN

Resident Engineer
Hill International
Riyadh
Email: altafhussainzafar@gmail.com
BSc CE, UETT 00



ANIS AL-HASAN

Project Engineer
Abdullah Tazan Consulting Bureau Jeddah
P.O. Box 5196, Jeddah 21422
B.E. (Civil) NED 66



ARSHAD ALI AMJAD, DR.

Sr. Specialist
SABIC
PO Box 11425, Jubail 31961
Email: amjadaa@sabic.com
B.Sc.(CE) Sussex 86, M.Sc. HWU 99, PhD. HWU 03



ASAD MAQSOOD KHAN

Civil Engineer
Saadullah Khan Brothers
Al-Rossais Commercial Center, Riyadh
Email: asad.3737@yahoo.com
B.Sc. (CE) UETT 06

ASIF KHALID

Sr. Contracts Administrator
Parsons International
Royal Commission Head Office, Yanbu
Email: a.khalid@hotmail.com
BSc (CE) UETL 03, MSc PM Unsty of London, 05



AHSAN SALEEM

Senior Planning Engineer
El-Seif Engineering Contracting
2681, Ad-Diyar St, Gharnatah, Riyadh
Email: ahsan_saleem18@hotmail.com
BE, UET Lahore 2013



AIMAL SOHAIL

Utility Design Engineer
Saud Consult
Riyadh
Email: aimalsohail9@gmail.com
BSc Civil Int. Islamic Uni. Islamabad 2020



ALI AKBAR QUREISHI

Lead Design Engineer
DAR Intl. Engg. Consultancy
Jeddah
Email: aaqureshi60@gmail.com
BSc Civil QUEST Nawabshah 2002



AMMAR AHMAD

DIVISIONAL ENGINEER
AETCON
KHOBAR DHAHRAN HIGHWAY- AL KHOBAR
Email: ammarwzd@gmail.com
BSc, UETL, 2011

ANWAR YAMIN MUBBASHIR

Project Manager
TKAF Contracting
Dammam
Email: mubbashir_pak@yahoo.com
BE Civil Nust 13



ARSHAD JAMAL

Assistant Professor
Imam Abdulrahman Bin Faisal University (IAU)
Rakah
Email: rshadjamalktk@gmail.com
M.Sc UET Taxila 16, PhD KFUPM 21



ASAD SALEEM SIDDIQUI

Technical Office Manager
Unimac Co
P.O.Box 7429, Riyadh-11462
Email: muradabadi2004@yahoo.com
BSc CE Aligarh Muslim Uni India 70

ASRAR M AHMED

Resident Director ACE-DABBAGH
Associated Consulting Engineers (ACE)
P.O. Box 543, Makkah
B.E. (CE) NED 59

Civil Engineers

**ATIF USMAN**

Projects Engineer
Al-Hokair Group
P.O. Box 859, Riyadh 11421
Email: atifkh_48@yahoo.co.uk
B.Sc. (CE) NUST 03, MSc. (MP) UOMUK 05

**AWAIS AHMED**

Planning Engineer
Ammico International Contracting
Riyadh
Email: awaisahmed038@gmail.com
BE Civil Engineer MS Project Management

**AWAIS AZAM**

Project Engineer
Saud Consult
Riyadh
Email: awaisazam71@hotmail.com
MSc Environment UOL Lahore 2019

**AZHAR BASHIR**

Contract Manager
Nesma & Partners Contracting Company
6th Cross, Prince Majid St, Alkhobar
Email: azharbashirhussain@gmail.com
BE NUST 07

**BABAR IFTIKHAR**

Civil Design Engineer
Al-Jazira Engineers & Consultants
Office 8, Fal Commercial Complex, King Abdulaziz Ro
Al-Bahr
Email: babariftikhar07@gmail.com
B.Sc. UET Taxila 15

**BABAR SULTAN**

Deputy General Manager
AETCON
P.O. Box 172, Dammam 31411
Email: bsultan@batelco.com.bh
B.Sc. (CE) UETL 81, M.Sc (Const Mgmt) EMU USA 8

**BASIT SHAH KHAN**

Project Manager
Gulf Consult Architect and Engineers
Al Khobar
Email: basit@gc-eng.com
BE Civil NED UET 94, MURP NED UET 11, PGD PM 23

**BILAL BIN ASLAM****CHAUDHARY GULRAIZ SAEED**

Lead Engineer
Elseif Engineering Contracting Est.
P.O. Box 2774, Riyadh 11461
B.Sc. (CE) UETL 78

DR. MUHAMMAD FARHAN BUTT

Saudi Aramco Chair Professor-Director, Smart Mobility Research
Imam Abdulrahman bin Faisal University, Dammam
Villa 60, Imam Abdulrahman bin Faisal University House
Compound No. 3
Email: fmbutt@iau.edu.sa
BS UET Lhr 98, MS Brigham Young U. USA 02, PhD USA 10, PostDoc MIT USA 12

**DR. MUNIR AHMED**

Design Manager Structural
DAR International Consultancy
Riyadh
Email: munir562002@gmail.com
PhD Str. Engg. AIT Thailand 2011

**EBRAR AHMED SHAMS**

Site Manager
ABB Contracting Co. Ltd
P.O. Box 2873 Al Khobar 31952
B.E. (CE) NED 81

**FAHEEM AHMAD ABDUL MAJEED**

Deputy Procurement Manager
Saudi Archidoron Company
Jeddah
Email: faheem.dsa@gmail.com
B.Sc UET Taxilla 08

**FAISAL AHMED**

Principal Engineer-Civil (Highways)
Parsons
Yanbu Saudi Arabia
Email: engrfashaikh83@gmail.com
B.E Civil Quaid-e-Awan UET 08

**FAISAL JARRAL**

Project Manager
El-Seif Engineering
Riyadh
Email: jarralfaisal@gmail.com
B.Sc, Eastern Med U. Turkey, 1998

**FAZL-E-MABOOD AFRIDI**

Director Infrastructure
Public Investment Fund
Dammam
Email: afridi_engineer@yahoo.com
B.Sc. (CE) NWFP UET 02

Civil Engineers



Bridge Design Engineer
Saudi Consulting Services
P.O.Box 2341, Riyadh 11451
Email: fazlullahsolangi@yahoo.com
B.E. (CE), MUET Jamshoro 00



GHULAM SAFDAR
General Manager
Paradigm Construction Company LTD.
Riyadh
Email: gsafdar@yahoo.com
B.Sc. (CE) UETL 80



HAFIZ MUHAMMAD YOUNAS
Design Manager
Bahrain Foundation Construction Company (BFCC)
Bahrain
Email: h.younas@bfcwll.com
B.Sc Civil UET Lhr 07



HASSAN JAMAL HAIDER
Resident Civil Engineer
HESCO Consulting Es
Umluj
Email: civiljamal@gmail.com
Btech (Hons) Civil Preston Isl 20



IMRAN AHMAD
Principal Engineer
Technip Italy SPA & DAR Engineering Consultants
Khobar, Saudi Arabia
Email: mana_dgk@hotmail.com
B.Sc Civil UET Lhr 98, M.Sc Structural UET Taxila 11



IMTIAZ AHMED
Construction Manager
Asfar Al-Jazirah Est.
P.O. Box 220569, Riyadh 11311
Email: imtiazpindwala@hotmail.com
B.Sc (CE) UETL 73



IQBAL HUSSAIN
Project Manager
Al-Mas'ad Contracting Co.
Riyadh
B.E. (CE) PU 68



IRSHAD NABI
Deputy General manager
AETCON
P.O. Box 250974, Riyadh 11391
B.E. (CE) UET Kabul 88



Senior Civil Engineer
JGC Gulf
Al Khobar
Email: gahmed08@gmail.com
B.Sc NUST 05



HAFIZ KHADIM HUSSAIN
Sr. Structural Engineer
Saudi Consolidated Engg
P.O. Box 3928, Riyadh 11481
B.Sc. (CE) UETL 89



HAFIZ TALAT MAHMOOD
Project Engineer
Paradigm Construction Company
Hai Alkhaleej, Riyadh
Email: talatmahmood31@gmail.com
B.Sc Civil UETL 14



HASSAN SHABBIR
Unemployed
Riyadh
Email: disizhassan@gmail.com
Bachelors of Science in Civil Engineering



IMRAN NASIR
Technical Manager
Muhammad Abdullah Al Azzaz
Adjacent to Askan, Dammam
Email: imran.engr786@gmail.com
BE UET Taxilla 04



IMTIAZ AHMED DURRANI
Highway Engineer
Rashid Geotech & Materials Engineers (RGME)
P.O. Box 9182, Jeddah 21413
Email: imtiazdurrani@yahoo.com
B.Sc. (CE) NWFP UET 92, M.S KFUPM 97



IRFAN ALI
Engineering Manager
AHB
Riyadh
Email: engrirfan@yahoo.com
B.E. (CE) QUEST Nawabshah 02

ISRAR RAFIQ
Site Engineer
TKAF Contracting
Dammam
Email: israrrafique123@yahoo.com
BE Civil MCE Nust 22

Civil Engineers

**JAVOID IQBAL**

Chief Engineer
Abal Khail Consulting Engineers
P.O. Box 4074, Riyadh 11491
Email: javaid7860@hotmail.com
B.Sc. (CE) UETL 75

**JAVED IQBAL**

Water and Waste Water Project Manager
Sasal Mashriq Contg. Co
5th floor, Babbtain Tower, Dhahran 39134
Email: javed@saudisas.com
B.Sc. (CE) UETL 83

**JUNAID ABDUL WAHID SIDDIQUI**

Assistant Professor
King Fahd University of Petroleum & Minerals
PO Box 453, Dhahran 31261
Email: junaid@kfupm.edu.sa
BE NED 95, MS KFUPM 20, PhD Purdue 2014

**KAFFAYATULLAH KHAN**

LECTURER
KING FAISAL UNIVERSITY
Email: kifayat.2000@gmail.com
BSc UET Peshawar 07, MSc UET Taxilla 11

**KAMAL MUSTAFA**

Project Engineer
Saudi Arabian Parsons Ltd. (SAPL)
P.O.Box 2341
B.Sc. (CE) UET Taxila 05, M.Sc. (CE) UET 08

**KAMRAN KHALID JAVED**

Project Engineer
Dar Al-Riyadh
Jubail
Email: javedkk@ibnsina.sabic.com
B.E. (CE) UTEL 03

**KHALID HUSSAIN**

General Manager
International Contracting Resources Co.
P.O. Box 16, Al-Khobar 31952
Email: khalidmdqest@yahoo.com
B.E. (CE) NED 94

**KHALID MAHMOOD DR.**

Professor of Civil Engg
King Abdul Aziz University
P.O. Box 9027, Jeddah 21413
B.Sc. (CE) UETL 65, Ph.D UNSW 73

**KHALID MAHMOOD MALIK**

Project Manager
Zuhair Fayeze Partnerships Consultants
P.O. Box 9486, Riyadh 11413
Email: khalidmmalik@hotmail.com
B.Sc. (CE) UETL 76, M.Sc. (CE) CTU USA 05, PMP I

**KHAWAJA KASHIF QADEER**

Contracts manager
AURCO
Khobar
Email: khawajakashif8@gmail.com
Bachelors in Civil

**KHURRAM ABBAS**

Senior Engineer Civil Design
Siemens Energy
Jeddah
Email: kabbas78@yahoo.com
B.Sc UET Taxilla 02, M.Sc Structural U of Surrey 05

**KIRMANI SYED MUBASHIR HUSSAIN**

Chief Engineer & Technical Advisor
Saudi Technical Limited (STL)
P.O. Box 571, Riyadh 11391
Email: smhkirmani@hotmail.com
B.Sc. (Honours) KU, B.E (C) NED 67, P.G.D IBA 71

**LAIQUE HAIDER**

Civil / Str. Engineer
Al-Hoty Establishment
P.O. Box 31729, Al-Khobar 31952
B.E. (CE) NED 83, MSCE LSU USA 87

**M JAVAID RAZA KHAN**

Planning Manager
Parsons
Hai Al Wazarat, Riyadh, KSA
Email: mr_raza721@yahoo.com
B.Sc Civil UET Lhr 03

**M. NASEEM KHAN RAZA**

Resident Engineer
SYSTRA
RIYADH
Email: engr_naseemraza@yahoo.com
BSC UET Lahore 2003, MSC NUST ISB 2013

**M. WAHEED CHUGHTAI**

Regional Manager
W NORCONSULT
P.O. Box 2026, Riyadh 11451
B.Sc. (CE) UETL 66, MBA OSU 77

Civil Engineers

**M. TARIQ AMIN CHAUDHARY, DR.**

Assistant Professor
Al-Imam Univesity
PO Box 84937, Riyadh 11681
Email: mtariqch@hotmail.com
B.Sc. (CE) UETL 90, MS SUNY 92, Ph.D. UOT JP 99

**MALIK HUMAYOON IQBAL**

Civil / Strt. Engineer
Military Works Dept., MODA
P.O. Box 8633, Riyadh 11492
B.Sc. (CE) WPUETL 69

**MAQSOOD ALI**

Site engineer
Arail Construction & Industrial Co. Ltd.
Al Aziziyah 21, Riyadh
Email: maqsoodali.eng.ma@gmail.com
BSc Civil PRESTON Uni KOHAT 18, Mgmt Abasyn U 22

**MASOOD UL HASSAN**

Project Manager
AECOM
Riyadh
Email: civil.masood@gmail.com
BE Civil UETL 07, MSc PM Aberdeen Uni. 23

**MIR SARFARAZ ALI KHAN**

Senior Project Manager
INAT
Al khobar
Email: msak41@yahoo.com
B.E. (CE) OU 65

MIRZA AHTESHAM UD DIN

Civil Engineer
Saudi Consulting Services (Saudconsult)
P.O. Box 3313, Jeddah 21471
B.E. (CE) NED 67, B.Sc KU 63

**MOHAMMAD ABDUL RAUF**

Project Engineer
Saudi Consulting Services
P.O. Box 2341, Riyadh 11451
Email: mrauf@saudconsult.com
B.Sc. (CE) UETL 92

**MOHAMMAD ALIUDDIN**

Project Director
Takamul Project Management
P.O. Box 31202, Al-Khobar 31952
Email: aliuddin61@yahoo.com
B.E. (CE) NED 83, M.E © RUH 84

**MAJOR WAHID AHMED BHUTTA**

Managing Director
P.O. Box 42763, Riyadh 11551
Email: wabwammz@yahoo.com
B.Sc. (CE) MCE 92

**MANSOOR AHMED**

Principal Civil Engineer
JACOBS Zate
Al Khobar
BE NED 02, ME NED 07

MARIYA ANWAR

Email: mariyamalik3@gmail.com
BE Civil Engg UET Taxila 05, MS UET Lhr 09

**MIR SALMAN SHAMS**

Chief Civil/Structure Engineer
C.A.T International Ltd. KSA Branch
Alkhobar, K.S.A
Email: salmanshams765@gmail.com
B.Sc Civil UET Lhr 04

**MIRZA ABDULLAH BAIG**

Quantity Surveyor and Estimator
DARA Khuraif Contracting Company
Riyadh
Email: mirzaabdullahbaig31@gmail.com
bachelor

**MOHAMMAD ABDUL KHALID**

Project Engineer
Saudi Electric Company (ERB)
EDSD/CMED 1-200W, P.O. Box 5190, Dammam
B.E. (CE) NED 76

**MOHAMMAD ADIL**

Manager Industrial Projects
Saudi Arabian Amiantit Co.
P.O. Box 589, Dammam 31421
B.E. (CE) NED 74

**MOHAMMAD ANWAR CHAUDHARY**

Cost Engineer SBG-ABCD
Saudi Binladin Group
Binladin Plaza, P.O. Box 41007, Jeddah 21521
B.Sc.(CE) UETL 76

Civil Engineers

**MOHAMMAD FAHIM UDDIN**

Deputy Project Engineer
Abalkhail Consulting Engineers
P.O. Box 4074, Riyadh 11491
Email: fhm_uddin@yahoo.com
B.E. (CE) NED 88, M.Sc (Nucleor E) QAU 90

**MOHAMMAD IFTEKHAR-UD-DIN**

Civil Engineer
Dar-Al-Majd Consulting Engineers
P.O. Box 60212, Riyadh 71545
Email: ifsara@hotmail.com
B.Sc. (CE) MLQU- 90, MCM, UE- 91

**MOHAMMAD JAWAAD**

Lead Engineer Design Civil
DAR International Engineering Consultancy
Dammam
Email: jawaadhere@hotmail.com
B.Sc UETL 04, M.Sc UETL 09

**MOHAMMAD KHALIQUE**

Road Engr. in Infrastructure
Saud Consult
P.O.Box 2341, Riyadh 11451
Email: mkhalique@saudconsult.com
B.Sc. (CE) UETL 92

**MOHAMMAD MASOOD ANJUM**

Procurement & Material Manager
Elseif Engineering & Contracting Est.
P.O. Box 2774, Riyadh 11461
B.Sc. (CE) UETL 75

**MOHAMMAD MUDDASSER**

Road Engineer
Saud Consult
P.O.Box 2341, Riyadh 11451
B.Sc. (CE) BZUM 05

**MOHAMMAD PERWEZ ALAM**

Operations Manager
KT Arabia LTD
Alkhobar
Email: alamperwez@hotmail.com
B.E. (CE) NED 79

**MOHAMMAD SALEEM UL ISLAM**

Project Manager
SIC
Email: saleemfarooqui98@gmail.com
BE (Civil), NED 06

**MOHAMMAD FAWAD KARBARI**

Project manager
Hashem Contracting & Trading Co. Ltd.
P.O. Box 10005, Riyadh 11433
B.E. (CE) NED 83, M.Sc (C) NED 91

**MOHAMMAD JAFAR KHAN**

VP & CO Contracts & Legal
Nesma & AlFadl Cont. Co Ltd.
P.O. Box 1498, Al-Khober 31952
B.E. (CE) NED 77

**MOHAMMAD KALIMUR REHMAN, DR.**

Research Engr. (Assoc. Prof)
King Fahd Univeristy of Petroleum
P.O. Box 151, Dhahran 31261
Email: mkrahman@kfupm.edu.sa
B.E. (CE) NED 80, MS UCB 84, Ph.D KFUPM 99

**MOHAMMAD KHURSHID**

Civil Engineer
Dar Al- majd Engineering Consultants
P.O. Box 60212, Riyadh 11545
B.Sc. (CE) NWFPUE 91

**MOHAMMAD MOAZAM KHAL**

Resident Engineer
Dar-Al-Riyadh Consultant
P.O. Box 5364, Riyadh 11422
B.Sc. (CE) UETL 78

**MOHAMMAD NAEEM CHAUDHRY**

Lead Structural Engr.
DAR Consulting Engineers
Yanbu
Email: mohammadnaeemaminchaudhry@gmail.com
B.Sc. (CE) UETL 78

**MOHAMMAD RASHID**

Civil Engineer
Saudi Oger Ltd.
P.O. Box 30435, Al-Hassa 31982
B.E. (CE) NED 87

**MOHAMMAD SHAFIQ MAITLA**

General Manager
Salman Saad Al-Akeel Est
P.O. Box 220969, Riyadh 11311
Email: mmaitla@yahoo.com
B.Sc (CE) UETL 75

Civil Engineers



MOHAMMAD TAHIR JAMEEL

Project Engineer (NEOM Projects)
Palace Consulting Engineers
Jeddah
Email: tahirjamil2005@yahoo.com
B.Sc. (CE) UETL 92



MOHAMMAD TAHIR SALEEM

Project Manager
M & M Company Ltd.
P.O. Box 10514, Riyadh 11443
B.E. (CE), NED 1977

MOHAMMAD TAYYIB WARAICH

Senior Structural Engineer
Elseif Engineering Contracting Co. Ltd
P.O. Box 2774, Riyadh 11461
B.Sc. (CE) UETL 68



MOHAMMAD USMAN

Project Manager
Saadullah Khan Brothers
Al-Rossais Commercial Center, Riyadh
Email: pm@skb-ksa.com
B.Sc. (CE) UETT 02



MOHAMMAD YAHYA KHAN

Adminstrator Contract
Elseif Engineering Contracting Co.
P.O. Box 2774, Riyadh 11461
B.Sc. (CE) NWFPUE 84



MOHAMMAD YOUSUF

Project Manager
Parsons
Al Hassa
B.E. (CE) NED 83

MOHAMMED PERWEZ ALAM

Manager Operation
KT Arabia LLC
P.O Box 30924, Khobar 31952
Email: alamperwez@gmail.com
B.E Civil, NED 79



MUBEEN AHMAD SHEIKH

Project Manager Infrastructure
Saudi Consulting Services
Sulemaniyah Riyadh
Email: MUBEEN@SAUDCONSULT.COM
B.E. (CE) UETL 02



MUBEEN UDDIN AHMED

Subcontract Engineer
JGC ARABIA LTD.
P.O. Box 2414, AL-KHOBAR 31952
Email: mubeenz99@hotmail.com
M. Inst. CES ICES 84



MUHAMMAD ADNAN

Team Lead Wet Utilities
Jacobs
Riyadh
Email: adnaninayat98@gmail.com
MSc Water Resources UET Taxila 2005

MUHAMMAD AHSAN

Engineer
Gulf Consolidated Contractors GCC
GCC Half Moon camp, Dammam
Email: mahsan@gccksa.com
BSc UET, BZU, Multan 2015



MUHAMMAD AKRAM

Sr. Civil Engineer
Al-Jazirah Engineers & Consultants (AJEC)
Yanbu
Email: muhammadsgsr@yahoo.com
B-Tech PRESTON U KOHAT 09, DAE Govt. Polytech
Sargodha 99



MUHAMMAD AMIR SIDDIQUE BHUTTO

Senior Engineer
AETCON
P.O. Box 172, Dammam 31411
Email: Bhutto_amir@yahoo.com
BS Civil, Qestion 04



MUHAMMAD ANJUM JAVED

Senior Utilities Infrastructure Manager
Red Sea Global KSA
Riyadh
Email: majaved708@gmail.com
B.Sc Civil UET Lhr 98, M.Sc Civil Concordia Uni Mor
Canada 06



MUHAMMAD ANWAR

Lead Bridge Engineer
Assystem Radicon - Kentz
P.O.Box 684, Alkhobar
Email: anwar_mce@hotmail.com



MUHAMMAD ARIF

Project Coordinator
Dar Al Handasah (Shair & Partners)
P.O.Box 612, Almas Center, Olaya, Riyadh
Email: asmultan70@gmail.com



Civil Engineers



MUHAMMAD ARIF AZIZ

Lecturer
Imam Abdul Rahman Bin Faisal University
Rakah Dammam
Email: maaahmed@iau.edu.sa
B.Sc Civil Sir Syed Uni 08, M.Sc Univ of Dundee 11



MUHAMMAD ASAD ALI KHAN

Qc Civil Inspector
Aurco
Khobar
Email: asadsafi832@gmail.com
Bachelors in Civil Engineering



MUHAMMAD ASIM

Project Engineer
Saudi Consulting Services, SAUDCONSULT
Riyadh
Email: MASIM@SAUDCONSULT.COM
B.E UET Lahore 2003

MUHAMMAD ASIM KHAN

Project Engineer
International Contracting Resource Co
Email: muhammadasimkhan3@gmail.com
BE Civil NED UET 99



MUHAMMAD ATHER MALIK KHAN

Structure Engineer
Omrania & Associates
Sulaimania, Riyadh
Email: engr_atherkhan@hotmail.com
B.E. (Civil) NED 03, M.E. (Civil) NED 10



MUHAMMAD FAIZAN

Project Engineer
Paradigm Construction Company
Email: mfaizan.mcc@gmail.com
BE NUST 14



MUHAMMAD FARRUKH ZAKI

Project Manager
NESPAC
PO Box 50344, Riyadh 11523
Email: mfmzaki57@yahoo.com
B.E. (CE) NED 81



MUHAMMAD FAYYAZ

Senior Engineer-II
JGC-Gulf Engineering (Pvt.) Ltd
Alkhobar
Email: f_aslam2000@yahoo.com
BSc UET Lahore 2004



MUHAMMAD HARIS SHAIKH

PROJECT ENGINEER
SAUD CONSULT
ALI AR RUMMANI, ALWAZARATH, RIYADH
Email: haris.nedian@gmail.com
B.E., NED KARACHI 10



MUHAMMAD IBRAR

Associate Structural Engineer
Aecom
NEOM
Email: mibrarce@gmail.com
B.Sc Civil UET Lhr 06



MUHAMMAD IFTIKHAR QASIM

Project Engineer
Al-Tuwairqi Group
PO Box 7922, Dammam 31742
B.Sc. (CE) UETPKP 03



MUHAMMAD IMRAN

Sr. Design Engineer (C & S)
Olayan Descon Engineering Co.
PO 10108, 31961 Al-Jubail Industrial City
Email: mibaloch@olayandescon.com
B.Sc. (CE) UETL 01



MUHAMMAD IRFAN ALI

Planning Manager
Idom Consulting
An Naf, Riyadh
Email: irfan1014@yahoo.com
B. E Civil UET Lhr 01



MUHAMMAD IRFAN MOHI UDDIN

Senior Transport Modeler
Egis
Hamad Tower, Olaya, Riyadh
Email: mimud.iffi@gmail.com
B.E Transport Engg UET Lahore 2009



MUHAMMAD IRSHAD HUSSAIN

Senior Manager - GIS
SYSTRA
Olaya - Riyadh
Email: muhammad.irshadhussain@gmail.com
BSc.(CE) 07 BZU Multan, MSc UOPL 07



MUHAMMAD KAMRAN

Civil Site Engineer
Effex Biotech Arabia
Al Khobar
Email: kamik4527@gmail.com
BE Civil Tech. Sarhad Uni. 22, DAE Power Plus Col. 1

Civil Engineers



Dy. General Manager, KSA
Keller Turki Co. Ltd
P.O.Box 718, Dammam 31421
Email: m.zaman@kellerme.com
B.Sc UETL 00



Project Manager
DAR Engineering
Al Tawun, Exit 6, Riyadh
Email: mnaeemakhtar01@gmail.com
B.Sc Civil UET Lahore 04, M.Sc Eng. Mgmt UET Taxi



MUHAMMAD NASIR AMIN
MSc 06, PhD 10 Korea Advanced Institute of Science a
Technology (KAIST), Daejeon, South Korea



MUHAMMAD OMAIR HASHMI
Senior Structural Engineer
Assystem Radicon
Building number 2815 ,16b street, Al Olaya Khobar
Email: engr.mhashmi@gmail.com
BSc Sir Syed Uni Khi 05



MUHAMMAD RAMEZ BAIG
Estimation Engineer
Kamco General Contractors
Khobar
Email: baigrm9@gmail.com
BE Civil NED UET 17, MSC NED UET 21



MUHAMMAD SAJID
Senior Utilities Engineer
Saudi Arabia Parsons Limited
Malaz, Riyadh, KSA
Email: uetianpk@yahoo.com
BSC Civil, UET Lhr 04

MUHAMMAD SALEEM IQBAL

Project Manger
Self Employed
Al Jubail
Email: iqbal6499@gmail.com
BSc Civil Engg. UET Lhr. 2004



MUHAMMAD SALMAN IQBAL
Utility Design Engineer
Saud Consult
Riyadh
Email: salmaniqbal680@gmail.com
MSc Civil FAST-NU Lahore 2016



MUHAMMAD SHAHERYAR
Site Engineer
AVICS Biotech Arabia
Al Khobar
Email: shaheryar.wies@gmail.com
BE Civil Tech Indus Uni. 19



MUHAMMAD USMAN MALIK
Projects/Buisness Development Manager
Keller Turki Co.Ltd
Dammam -KSA
Email: usman.malik@keller.com
B.E NED Khi 96



MUHAMMAD WAQAS JAVED
Project Engineer
Al-Masar Al-Hadeeth Co. Ltd.
Al-Jouf Saudi Arabia
Email: gotowaqas@yahoo.com
B.Sc. (CE) UETL 09



MUKARRAM RAZZAQ AHMAD
Utility Engineer
Saudi Consulting Services
P.O.Box 2341, Riyadh 1145
Email: mrazzaq@saudconsult.com
B.Sc. (CE) UETL 02



MUNEEB ASLAM KHAN
PMT Manager
Ground Engineering Contractors
P.O. Box 1053, Al-Khobar 31952
Email: gec@zajil.net
B.E. (CE) NED 93



MUNEEB MUSTAQEEM
Graduate Student
KFUPM
Dhahran
Email: muneeb54566@gmail.com
Masters Student in construction engineering and mana;
Kfupm .



MUNEE AHMED RANA
Planning & Project Engineer
Int. Center of Commerce & Contracting
P.O. Box 9778, Riyadh 11423
Email: icriyadh@shabakah.com
B.E. (CE) NED 89

MUNIR AHMED
Plant & Operations Manager
Saif Noman Said & Partnership Co.
P.O. Box 40843, Riyadh 11511
B.Sc. (CE) UETL 79



Civil Engineers



MUNIR AHMED JAVID
Project Manager
AETCON
P.O. Box 172, Dammam 31411
B.Sc. (CE) UETL 92



MUSTAFA IQBAL NASIM
Procurement Manager
Al-Rashid Trading & Contracting (RTCC)
P.O. Box 307, Riyadh 11411
B.Sc.(CE) AMU 75



NAJIB HASSAN
Lead Technical Professional
Wood Al-Hejailan
Alkhobar
Email: najibhas@gmail.com
B.E NED Univ Karachi 1994



NAVEED EHSAN
Stormwater Lead
AECOM
Olaya, Royadh
Email: naveed.ehsan@outlook.com
B.Sc Civil UET Lhr 01, M.Sc Environmental UET Lhr 01



NOUMAN RAFIQ
Project Engineer
Al-Masar Al Hadkkat (Pvt) Ltd.
Al-Jouf
Email: nouman318@yahoo.com
B.E. (Civil) NED 09



PARVEZ A. NAUSHAHI
General Manager
Ground Engineering Contractors
P.O. Box 1053, Al-Khobar 31952
Email: gec-kho@gecsaudi.com
B.Sc. (CE) UETL 81, M.E © AIT 92



QAIYYUM HASHMI
Senior Civil Engineer
Saudi Oger Ltd.
P.O. Box 1449, Riyadh 11431
B.E. (CE), NED 1980



QURBAN ALI BHATTI
Construction Manager
El-Seif Engineering & Contracting
Khalid Bin Waleed Rd, Royadh
Email: qab_1414@yahoo.com
B.Sc Mining 1991, B.Sc Civil UET Lahore 1994



MUSHTAQ AHMED WASSAN
PM&Head of Specification Dept.
Zuhair Fayeze Partnership
P.O. Box. 5445, Jeddah 21422
Email: mushtaq1@hotmail.com
B.E. (Cel) US 73



NADEEM AHMED
Works Manager
Keller Turki Co. Ltd
P.O.Box 718, Dammam 31421
Email: n.ahmed@kellerme.com
BSc (Geo) Urdu Science Univ. 1983



NASIR IFTIKHAR
SENIOR CIVIL ENGINEER
SYSTRA
Riyadh
Email: Nasiriftikhar1@gmail.com
B.Sc UET Taxila 02



NAVEED ULLAH
Operations manager
Saudi Archtrodon Ltd.
P.O. Box 2242, Dammam 31451
B.Sc. (CE) UETL 89



OMER HAMID TAREEN
Senior Infrastructure Eng
Aachen Engg Consultant
Riyadh
Email: contactomer@gmail.com
BSc CE, UETL 02



PERVAIZ IQBAL QURESHI
Field Engineer
M/S Sharif KEC
P.O. Box 549, Riyadh 11391
B.Sc. (CE) 93



QAIYYUM HAYDER
Project Engineer
MS Fayeque Ali Haider Co
Riyadh
Email: aqengineer555@gmail.com
BE Civil Comsats University Sahiwal 18



RAFIQ MUHAMMAD CHOUDHRY
Professor
Imam Mohammad Ibn Saud Islamic University
Civil Engg Dept IMSIU, Riyadh 11564
Email: choudhry03@gmail.com
B.E UET Lahore 90, MS AIT Thailand 95, PhD Tsinghua Univ China 07

Civil Engineers

**RAHEEL WAKEEL**

Civil Engineer
Saadullah Khan Brothers
Al-Rossais Commercial Center, Riyadh
Email: rahil_wakil@hotmail.com
B.Sc. (CE) UET NWFP 06

**REHAN JAMIL**

Lecturer
Imam Abdulrahman Bin Faisal Univ, Dammam
College of Arch & Planning
Email: cvengr_rehan@hotmail.com
BE NUST 05, MS UET Taxila 10

**REHAN UL HAQ SAIF UL HAQ**

Project Manager
AlKhorayef Water & Power Technology Co.
P.O.Box 62637, Riyadh-11595
Email: rehan3015@hotmail.com
B.Sc Al-Khair Univ. 2001

ROZIA REHAN

Email: rozia_riaz11@hotmail.com
BE UET Peshawar 06

**SADAR DIN MUBARIK ALI**

Principal Engineer
Saud Consult
P.O.Box 2341, Riyadh 11451
Email: sdari@saudconsult.com
B.Sc. (CE) UETL 90

**SAJEEL DURRANI**

Construction Manager
WSP
Dammam
Email: sajeel7@hotmail.com
BSc CE, UETP 96

**SAJID HUSSAIN**

Infrastructure Engineer
Saudi Arabian Parsons Limited
P.O. Box 1174, Riyadh 11431
Email: sajidgondal@gmail.com
BSc Civil UETL 2004

**SAJJAD MUSTAFA**

Planning Engineer
DAR INTERNATIONAL ENGINEERING CONSULTA
Riyadh
Email: sajadmustafa39@gmail.com
BSc Civil Engg. UET Taxila 2015

**SARFRAZ AHMED**

Project Engineer
Saudi Consulting Services
P.O.Box 2341, Riyadh 11451
Email: enviroengr@hotmail.com
B.Sc. (Civil) UETL 03, M.Sc. (Environ. Eng) UETL 06

**SHABBIR A. KHOKHAR**

Senior Technical Consultant
Saudi Industrial Development Fund
P.O. Box 4143, Riyadh 11149
Email: shabbir248@hotmail.com
B.Sc. (CE) UETL 70

**SHAFIQ AHMED**

Resident Engineer
RPMC (Railway Project Management Co.)
PO Box 3900, Riyadh 11481
Email: samt892@yahoo.com
B.Sc. (CE) UETL 73

**SHAFIQ UR REHMAN**

LEAD CIVIL/STRUCTURAL ENGINEER
DAR ENGINEERING INTERNATIONAL CONSULTAN
Riyadh
Email: engrshafiq1@gmail.com
MSc Civil Engg. UET Lhr. 2008

SHAFIQ UR REHMAN

LEAD CIVIL/STRUCTURAL ENGINEER
DAR Engg International Consultant
Tamkeen Tower, Yasmeen Dist. Riyadh
Email: engrshafiq1@gmail.com
MSc Civil UETL 08

SHAHID ANWAR

General Manager
Wilber Smith Associates
P.O. Box. 301285, Riyadh 11372
Email: sanwar@wilbursmith.com
BE HFU 84, M.E. ICUL 87, MBA City U 91

**SHAHID IMRAN**

Project Engineer
Keller Turki Co.Ltd
Dammam -KSA
Email: shahid.imran@keller.com
B.Sc Civil UET Lhr 15

**SHAIKH MOHAMMAD ASHRAF**

Sr. Engineer
Military Works Dept. (MODA)
P.O. Box 20379, Riyadh 11455
B.E. (CE) NED 71, MEA GWU 79



Civil Engineers

**SHEHZAD KHAN**

Project Manager
Paradigm Construction Company
Hai Alkhaleej, Riyadh
B.Tech Preston Uni 13

**SHEIKH MUHAMMAD SABIR**

Steel Structure Design Engineer
SYSTRA
Alwazarat, Riyadh
Email: zikash@ymail.com
B.E, NED 00

SHEIKH MUHAMMAD TAYYAB

Sr. Planning Engineer
Colliers Project Leaders
Al Tubah
Email: tayyab_nust@hotmail.com
BE Civil Nust 07

**SHERAZ HAMEED**

Technical Manager
Maramer Company Limited
Malaz, Riyadh, KSA
Email: sherazz.hameed@gmail.com
B Sc Civil UET Lhr 04

**SOHAIB TAHIR**

Civil Engineer
Al-Qahtani Pipe Coating Industries
Dammam, KSA
Email: sohaib.tahir@aqpci.net
B.E Civil Uni of Mgmt & Tech 21

**SOHAIL AHMED**

LEAD CIVIL/WET-UTILITIES
Dar International Engineering Consultancy
Email: engr.sashaikh@gmail.com
BE Civil NED UET 11

**SYED ABDUL MAJEED SHAH**

Project Manager
Elseif Engineering Contracting
P.O.Box 2774, Riyadh 11461
Email: s.majeed@el-seif.com.sa
BE (Civil), NED 74

**SYED ABID ALI ABID**

Project Manager
Abdulla H. Al-Mutawa Sons' Holding Co
P.O Box#10, Saihat 31972
Email: syedabid932@gmail.com
B.Sc (Civil), UETL 02

**SYED ARIF HUSSAIN**

Projects Engineer
Arab Technology for General Contracting Est.
4th St Al Khobar
Email: enrgarifhussain512@gmail.com
B.Sc UET Taxila 13

**SYED EHSAN HIKMAT**

Structural Senior Engineer
Atkins
Jeddah
Email: hikmat.ehsan@gmail.com
B.E. (Civil) NED 06, M.E. (Civil) NED 10

**SYED FAHAD HUSSAIN**

Structural Bridge Engineer
Assystem Radicon
Khobar
Email: sfh.sfh88@gmail.com
BE Civil NED UET 10, MSc Str. NED UET 14

**SYED FAIZ AHMAD**

Chief Structural Engineer
Saudi Oger Ltd.
GPCD-8413, P.O. Box 1449, Riyadh 11431
Email: syedfaiz23@hotmail.com
B.E. (CE) NED 79, M.E (Str.) AIT 82

**SYED MOHAMMAD ALI**

Regional Manager
Wicks Van Oord
Dammam
Email: syed_mohd_ali@yahoo.com
M.Sc.(CE) KFUPM

SYED SAAD AJMAL

Construction Manager
Olayan Descon
Dammam
Email: saad_engr@hotmail.com
B.Sc Bahauddin Zakariya U. Multan 08, M.Sc PM Uni
Sunderland 12

**SYED SAMIUDDIN AHMED**

Civil Engineer
Saudi Consulting Services (Saudconsult)
P.O. Box 1293, Dammam 31431
B.E. (CE) NED 79

**SYED UMAIR ALI NAQVI**

Assistant Professor
King Fahd University of Petroleum and Minerals
5606 Ferdaws Courts, KFUPM 31261, Dhahran Saudi
Email: umairali.civil@gmail.com
M.Sc Saitama Uni Japan 15, PhD Uni of Tokyo Japan 2

Civil Engineers

**SYED WASI IMAM**

Sr. Project Manager (Civil)
Saudi Consulting Services (Saudconsult)
P.O. Box 1293, Dammam 31431
Email: imam_wasi@hotmail.com
B.E. (CE) NED 77

**TAIMUR KARIM**

Technical Manager
Red Mulga Forensic Engineering Pty. Ltd. (Australia)
Riyadh Saudi Arabia
Email: taimurkarim44@gmail.com
BE Civil Nust 13, MSc Transportation Engg 16

**TARIQ JAMAL KHAN**

CIVIL ENGR
RASHID ENGG
P.O.Box 4354, RIYADH 11491
Email: tariqjamal@yahoo.com
DACE 68, W Pak TE, BSc 73, PU, MICE 75, IE PAK

**TAUQIR AHMED**

Assitant Professor
Imam Univeristy
Civil Engineering Dept, Imam university Ryd
Email: tauqirahmeduet@gmail.com
B.Sc UETL 04, M.Sc and PhD U of Tokyo 12

**TOQEER AHMED**

Projects Control Manager
KAMCO
KHOBAR
Email: toqeerahmed@live.com
B.E Civil NED UET 09, MBA Bahria University 13

**UMAIR ASHRAF**

Civil Engineer
Saadullah Khan Brothers
Al-Rossais Commercial Center, Riyadh
B.Sc. (CE) UETT 07

**UMAIR BAIG**

Technical Manager
Solaiman Abdullah El. Khereeji Consultants
Nafal, Riyadh, KSA
Email: umair_baig@live.com
B.Sc UET Lhr 08, M.Sc Univ of Tokyo Japan 13

**UMAIR HASSAN**

Senior Planning Engineer
Fateyerji Contracting Company
Jeddah
Email: umairhasan835@gmail.com
B.Sc UET Taxila 15

**UMAR FAROOQ**

Lead Structural Engineer
Dar International Engineering Consultancy
Dammam
MSc Civil Engg. UET Lhr. 2007

**USMAN ARIF**

Project Engineer
Saudi Consulting Services
Al-Sulemainia Riyadh
Email: USMANCIVIL@YAHOO.COM
B.E UET Lahore 1999

**USMAN ILYAS**

Civil Engineer
DAR International Engineering Consultancy
P.O. Box 2341, Riyadh 11451
Email: uilyas@saudconsult.com
BSc U of South Asia, LHR 14

**USMAN TARIQ**

Material Engineer
UCC
Taif
Email: usmantariq2009@hotmail.com
B Sc Civil, U East London 17

UZAIR ASHRAF

Internal Claims Consultant
Saudi Aramco
Dahran
Email: uzairashraf@gmail.com
BE Civil Nust 08, MSc Cons. Law King's Col. Ldn 21

**WAQAR UL HAQ**

Senior Civil Engineer
Aecom
Neom
Email: waqarul_haq@hotmail.com
Btech CE, Preston U ISB 09, MSc UoP 06

**WAQAS AHMAD KHAN**

Project Engineer (Civil)
Saudi Consulting Services
P.O.Box 2341, Riyadh
Email: khan_sam34@yahoo.com
B.E. (Civil), UET Taxila 06

**WAQAS MUHAMMAD**

Utility Design Engineer
Saud Consult
Riyadh
Email: muhammad.waqas0707@gmail.com
ME Civil NED Karachi 2015



Civil Engineers



WAQAS SAFDAR

Regional Director
China Railway Construction Corporation Limited
Al Sahafah, Riyadh, KSA
Email: waqas.safdar@gmail.com
BSc UET Lhr 04



WAQAS SARWAR

Senior Infrastructure Engineer
Saudi Arabian Parsons Limited
P.O. Box 1174, Riyadh 11431
Email: waqas.sarwar@saudiparsons.com
BSc Civil UETL 02, MSc Civil UETT 08



WAQUAS BIN TARIQ

Planning Engr.
Sinsina Corner Co. for Contracting
PO Box 1050, Jubail 31951
Email: waqas.bin.tariq@hotmail.com
B.Sc. (CE) UET Tax 03



WASEEM SHOUKAT

Quality Control Engineer
Nesma & Partners
Makkah
Email: engr.waseem62@yahoo.com
B.Sc UET Taxila 2011, M.Sc UET Taxila 2015



WASIF ALI

Project Engineer
Saudconsult
P.O.Box 2341, 11451 Riyadh
Email: wasif92ali@gmail.com
BSc Civil, UET Taxilla 14



YAQOOB ALI

Senior Civil Engineer
MS Fayeque Ali Haider Co
Riyadh
Email: yaqoobali605@gmail.com
BE Civil NED UET 11



YASIR FARID KHAN

Senior Structural Engineer
JACOBS Zate
Prince Homoud St, Haramain Hwy, Al Khobar
Email: contact.yasirfarid@gmail.com
B.Sc Mehran Univ 05, M.Sc Structural UET Taxilla 08

ZAFAR HAYAT

Project Controls Manager
EllisDon Project and Construction Management
PO Box 93228, Riyadh 11481
Email: zafarhayat@live.com
BSc Civil, UETP 96



ZAHEER ABBAS SARDAR KHAN

Geotechnical & Proposals Eng
Ground Engineering Contractors (GEC)
P.O.Box 1053, Al-Khobar 31952
Email: gec-kho@gecsaudi.com
B.Sc(Civil) UETL 11



ZAINULABDIN PATHAN

Senior Civil Engineer
Saudi Electric Company
P.O. Box 63221, Riyadh 11516
Email: pathanzain@hotmail.com
B.E. (CE) NED 71



ZAKA-UD-DIN

Senior Civil Engineer
JACOBS Zate
Al Khobar
BE UET Peshawar 04

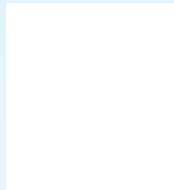


ZEESHAN KHAN

QC Engineer
Webuild
Tabuk
Email: cezeeshankhan@gmail.com
BSc Civil Engg. UOL Lahore 2016

“**Our INTELLIGENCE** is what makes
us human, and AI is an extension
of that **QUALITY.**”

Computer Engineers



ALLAUDDIN MAHABAT KHAN

Technical Support Engineer
STC Solutions
Hay Nuzla Al-Yamniya, Jeddah
Email: subaktagin@gmail.com
B.Sc.Hon, UET Peshawar 2007



DR. HAFIZ MUHAMMAD IMRAN

CEO
TeleNoc
Olaya, Riyadh
Email: imran@telenoc.org
MS UET Lahore 2010, PhD Malaysia U of Science & Tech 2015



FAROOQ MOHIUDDIN

Cost Engineer
Saudi Electricity Company
Dammam
Email: farooq.mohi@gmail.com
BSc Usman Inst of Tech 2008



HAMZA KHALID

Software Development
M. A. Al-Azzaz Inspection and Testing Services
Email: hamza@maaz.com.sa
B.E. (Comp) SSUET 05



IMRAN ZAHEER

Executive Manager
Mobily
Riyadh
Email: imzaheer@gmail.com
BS State U NY 03, PGD Harvard 14



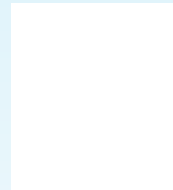
KARIM ASIF SATTAR

Data Science Researcher
King Fahad University of Petroleum and Minerals
Dhahran
Email: karimasif@gmail.com
Information and Computer Science MS, King Fahad University of Petroleum and Minerals



MIAN ABDUL HAMID

IS & Governance Consultant
Saudi Electricity Co.
Riyadh
Email: hamid1947@hotmail.com
B.E. (CS) NED 96



ABDUL MAJID

MW Transmission Engineer
LCC Saudi Arabia
STC HQ Mursalat Riyadh
Email: majidakhtar87@yahoo.com
B. Sc NWFP UET Peshawar 2012



AWAIS MAHMOOD

Assistant Professor
King Saud University, Riyadh
Ummul Hammam (West), Riyadh
Email: mawais@ksu.edu.sa
MS EMU Turkey 03, PhD KSU Riyadh 14



DR. RIAZ INAYAT

ICT Manager
DAR Engineering
Riyadh
Email: riaz.inayat@gmail.com
PhD ICT Engineering



HAMZA JAWAID NIAZI

Senior Technical Consultant
SSBS
Email: hamzajawaid@gmail.com
B.Sc. (CompE) UMTL 03



IMRAN RASUL

Solution Architect
Nokia Solutions & Networks
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: imran.rasul@gmail.com
B.S. (CS), UETL 04



IRTAZA GHAFOR

Managed Services Delivery Lead
Huawei Technology Ltd
C-Center Riyadh
Email: irtazag@hotmail.com
B.S. (CS) MAJU 02



KHURRAM SHAHID QURESHI

Sales Engineer
Apral International Group
P.O. Box 27045, Riyadh 11417
Email: ksq_2000@yahoo.com
B.Sc. (Comp E) AUM 96



MIR AHMED ALI KHAN

SEO Wordpress Developer
self employed / Open to work
Riyadh
Email: mirahmedalikhan52@gmail.com
B.S in Software Engineering from Sir Syed University of Engineering & Technology

Computer Engineers

**MOHAMMAD ADNAN AZAM**

Communication Engineer
SIEMENS
Al-Raja Tower, Khobar
Email: addiazam@gmail.com
B.Sc. (CmpE) SSUET 06

**MOHAMMAD AHSAN KHAN**

Product Manager
Mishaal Al Sudairy Office
P.O. Box 87881 Riyadh 11652
Email: ahsan@mso.com.sa
B.S. (CS) SSUET 06

**MOHAMMAD HASEEB NAZ**

Computer Engineer
LM Ericsson
P.O. Box 6121, Riyadh 11442
Email: naz_haseeb@hotmail.com
B.S. (Comp E) EMU Cyprus 2000

**MUHAMMAD SAAD AMIN**

Solution Sales Manager
Digital Era (Al Jihaz Holding)
Saudi Electricity Company HQ, Riyadh
Email: saad.daulatkhel@outlook.com
B.E Comp Engg, Comsats Islamabad 06

**MUHAMMAD YOUSAF ISMAIL**

Project Manager-GIS Consultant
Geo Tech Consulting Group
Riyadh
Email: engmyousaf@gmail.com
B.Sc. (Comp) NEU CYP 02

**OMAR AKBAR**

QA /QC Manager
Al Falak Electronic Equipment & Supplies
PO Box 31172, Khobar
Email: omar_akbar@alfalak.com
B.E. (CE) SSUET 06

**RIZWAN MEHMOOD**

System Analyst & Designer
Visual Sof
PO Box 11669, Al-Jubail 31961
Email: nicriz@gmail.com
B.S. (CS) Infomate Lah 00

**SYED MUJTABA OMER JUNAIDY**

Senior Technical Architect
specialized by stc
Riyadh
Email: mujtaba.junaidy@gmail.com
BE Computer & Information Systems from NEDUET

**MOHAMMAD AHSAN JAVED**

Business Development Manager
Info-Light Est.
Riyadh
Email: ahsanjaved09@gmail.com
BS CS FAST - NUCES Islamabad 13, MS SWE KFUPM

**MOHAMMAD ANEEQ KASHAN**

Network Engineer
SIEMENS Ltd.
P.O. Box 27503, Riyadh 11427
B.S. (CS) SSUET 06

**MUHAMMAD FARAZ KHAN**

Director
Ather Telecom
Olaya
Email: faraz@ather-telecomsolutions.com
B.Sc. (CS) UOSA 98

**MUHAMMAD WAHEED ASLAM**

Lecturer
KFUPM
P.O.Box 557 Dhahran 31261
Email: mwaslam@kfupm.edu.sa
MSc Comp Scs Quaid I Azam U. Isb 85, MBA KFUPM

**NAUFAL BIN SAAD AL-HUSSAINI**

Manager Operations
M. A. Al-Azzaz Inspection and Testing Services
P.O. Box 31172, Al-Khobar 31952
Email: naufal@maaz.com.sa
BE (Comp) SSUET 10

**RAJA MUHAMMAD ADBULLAH ASLAN**

System Engineer
Ather Telecom
Olaya
Email: raja593@yahoo.com
B.E. (IT) UETT 06, M.Sc. (IT) BIT 10

**SYED MUDASSIR HUSSAIN KIRMANI**

Business Application Lead - SAP
Saudi Paper Group
P.O.Box 2598, Unit 2, Dammam Industrial Area
Email: mudassirkirmani@saudipaper.com
BSc Bahria University Karachi 2006

**SYED SALMAN SHAFIQ**

Senior Advisor
Saudi Telecomm. Company
P.O. Box 84681, Riyadh 11681
Email: sshafiq2000@hotmail.com
MBA IBA 79, M.S (Comp E) USC 84

Computer Engineers



TAIMOOR WAHEED ASLAM

Consultant, Management Systems
Riaz Al Zamil
KFUPM, Dhahran
Email: taimoor.w@ricionline.com
BSc KFUPM 2012



TAQDEES AHMED SIDDIQI

LEAD SERVICES BUSINESS MANAGER
Nokia Solutions & Networks (NSN)
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: taqdees@gmail.com
M.Sc. (CS), Punjab Univ 93



WAQAS ASAD KHAN

Sr. Product Specialist Engr.
ABB Power Generation & Water
5th Floor Legend Tower
Email: waasad@gmail.com
B.E. (Comp) SSUET 03

ZAIN AFTAB AHMED

Business Development Manager
Smart Advertising Agency
Khobar
Email: zainaftab@live.com
BSc Limkokwing Univ 2019



Applications of Artificial Intelligence in Construction Projects

Artificial Intelligence (AI) is reshaping construction projects by enhancing efficiency, accuracy, and decision-making across the project lifecycle. As construction environments involve complex coordination, high risks, and large-scale resource management, AI-driven solutions are increasingly being adopted to address these challenges.

Planning & Scheduling

- ▶ AI algorithms analyze data to develop optimized schedules and allocate resources effectively.

Predictive Analytics

Machine learning models identify potential risks and suggest proactive measures.



Automation

AI-driven robotics and equipment perform repetitive and labor intensive tasks.

Predictive Analytics

- ▶ Machine learning models identify potential risks and suggest proactive measures.

Safety & Monitoring

Computer vision systems detect hazards and monitor worker behavior in real time.



In conclusion, AI applications in construction projects are transforming traditional practices by improving efficiency, safety, and project outcomes. As technology continues to evolve, AI is expected to play an even more critical role in shaping

Electrical Engineers

**MUHAMMAD LATIF**

General Manager
Pacost International
Khobar
Email: latifmalik53@gmail.com
Btech (Hons) Elec Preston University 06

**AAMER SAEED**

Country Mgr. Sales & Marketing
TIEPCO
P.O. Box 2705, Dammam 31461
Email: aamar.saeed@tiepco.com
B.Sc. (EE) UETL 95

**ABDUL BAQI KHAN**

Lecturer / Tech Trainer
Royal Commission Yanbu & Jubail
Email: jic.abdulbaqi@gmail.com
BE UETL 88, MS SBU UK 94

ABDUL HAFEEZ MUGHAL

Electrical Engineer
Min. of Defence & Aviation (Air)
P.O. Box 16431, Riyadh 11464
B.E. (EE) MUET 83

**ABDUL HASEEB SHAFIQ**

Technical Consultant - E&I
Eram International
Street 5, Al Tobaishi, Dammam -32233
Email: abdulhaseebb@gmail.com
BE NED Karachi 08

**ABDUL MAJEED KALAIR**

Electrical Engineer
Saudi Consulting Services (Saudconsult)
P.O. Box 1293, Dammam 31431
Email: Kalair.a.m@saudconsult.com
B.Sc. (EE) UETL 71

**ABDUL QAYYUM**

Sr. Electrical Engineer
Ansaldo
P.O. Box 4430, Riyadh 11491
Email: ansaldo@nesma.net.sa
B.Sc. (EE) UETL 70

**ABDUL RAHMAN LALDIN**

Consultant
Saudi Electricity Company
SEC HQ, Granada Tower A1 F-10, P.O.Box 22955, Riyadh
Email: arlaldin@hotmail.com
B.Sc. (EE) EPUET 70, M.S (EE) KFUPM 83, M.Eng (I

**SYED ANSAAR HAIDER ZAIDI**

Pre-Sales Engineer
Naizak Global Engineering Systems
Al Khobar
Email: a.ansaar17.sa@gmail.com
BE Elec. The Sufa University 19

**ABBAS RAZA**

Engineer
Apral nternation
Riyadh
Email: abbasraza2002@hotmail.com
B.Sc. (EE) UETL 73

**ABDUL HAFEEZ ANJUM**

Senior Design Engineer
China GEO Engineering
P.O. Box 85, Jubail 31951
Email: ahasiddah@gmail.com
B.Sc.(EE) UETL 1990

**ABDUL HANNAN**

Estimation Engineer
Adwan Marketing Co. Ltd.
P.O. Box 64273, Riyadh 11536
B.Sc. (EE) AUM 94

**ABDUL JALAL**

Technical Manager
Saudi Services for E/M Works Co. Ltd.
P.O. Box 6341, Riyadh 11442
Email: jalal_roshan@hotmail.com
B.Sc (EE) UOP 73

**ABDUL QAYOOM MEMON**

Senior Project Specialist
Marafiq Water and Power Utility Co.
Yanbu
Email: jani_memon1@yahoo.com
B.E. NUET 98, M.E. AIT 05

ABDUL QAYYUM FAIZ

Electrical Engineer
Al Faris Food Industries
Olaya, Riyadh
Email: aqfaiz87@gmail.com
BSEE, Univ of Management And Technology, Lhr 2010

ABDUL REHMAN KHURRAM

Senior Electrical Engineer
Gulf Consolidated Contractors GCC
Ain AlNakheel, Abqaiq
Email: arkhurram@gccksa.com
B.Sc UET BZU Multan 2006

Electrical Engineers

**ABID ALI KAYANI**

EWSD Technical Support Manager
STC
Building 35, STC HQ, Riyadh
Email: abidkayani@hotmail.com
B.Sc, UCET, Mirpur AK 94

**ABSAR KAREEM**

Project Manager NPO
Nokia Solutions & Networks (NSN)
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: absarkareem@yahoo.com
BE (EE), UETL 00

**ADNAN SALEH**

Electrical Supervisor
Al-Qahtani Pipe Coating Industries
Adamah, Dammam
Email: admirza9@gmail.com
B.Tech Preston Institute 11

**ADNAN ZAHEER KHAWAJA**

General Manager
Electrical Power Contracting Co
Al Khobar
Email: engr.adz@gmail.com
B.E. (EE) AUI 07

**AFTAB AHMED**

Engineer (OHTL/UG Cable)
SEC - NG
Dammam Al Khobar
Email: engr.aftab72@yahoo.com
BE Mehran UET Jamshoro 00

**AFTAB AHMED MUGHAL**

Electrical Engineer
SEC Consultant (Al-Othman)
Riyadh
Email: aftabamughal@gmail.com
B.E. (EE) MUET 00

**AFTAB UL ISLAM**

SLM Engineer Transmission (BO)
Nokia Al-Saudi
Tatweer Tower, Block-2, King Fahd Road, Riyadh
Email: aftab.673@gmail.com
BSc Khulna U. of Engg & Tech BD 2000

**AHMAD ABRAR SHAMI**

Energy Engineer
Siemens
Riyadh
Email: ashami97@gmail.com
B.E NUST 2018

**AHMAD FARRAKH MANZOOR**

Head of Bldg. Auto.
Siemens Ltd
P.O. Box - 9510, Riyadh - 11423
Email: farrakh@hotmail.com
B.Sc. (EE) NUST 00

**AHMAD NADEEM KHAWAJA**

Area Sales Manager
Saudi Transformers Co.
1st Industrial City, P.O. Box 5785, Dammam 31432
Email: Khawaja@sauditransformers.com
B.E. (EE) NED 91, MBA IBA 97

**AHMAD ZAHEER TAHIR**

Supply Chain Manager
ABB Electrical Industries
P.O. Box 2873, Al-Khobar 31952
Email: ahmad.tahir@sa.abb.com
B.Sc. (EE) UET Mirpur 93

**AHSAN AZIZ**

Key Account Manager
GE Int Inc
PO Box 20498, Khobar 31952
Email: ahsan.aziz@ge.com
B.Sc. (EE) NED 01

**AHSAN ISLAM**

Electrical Engineer
Al-Qahtani Pipe Coating Industries
St 15 Prince Mishal St Al-Adama
Email: ahsan893@hotmail.com
BE NED Karachi 06

**AJAZ ALI AWAN**

Performance Manager
Nokia Al Saudia
Ground floor, Tatweer Tower Block 2, King Fahd Rd,
Email: awanajaz200374@gmail.com
B.S UET Peshawar 1999

**AKHLAQ AHMAD BUTT**

Independent Consultant
Saudi Electric Company
COA HQ, Granada Office Riyadh
Email: akhlaq05061960@yahoo.com
B.E (Electrical) UET Lahore

**AKIF ALI**

Manager - QC Section
Mitsubishi Electric Saudi Limited
P.O. Box 2391, Riyadh 11451
B.Sc. (EE) UETL 92

Electrical Engineers



ALI AKBAR

Field Engineer
Al Sharif KEC
P.O. Box 549, Al-Riyadh 11391
B.E. (EE) MUET 90



ALI JAMSHAD

Lead Electrical Engineer
Gulf Consult
Al Khobar
Email: eng.ali26@gmail.com
B.Sc UET Lahore 10



ALTAF UR REHMAN

Transmission Engr.
SEC EOA
P.O.Box 5190 Dammam 31422
Email: uetian94@hotmail.com
B.Sc. (EE) UETL 99, M.Sc. UETL 07



AMEER ABBAS

Network Engineer
Seder
Mursalat, Riyadh
Email: deameer@gmail.com
MS EE, UET Peshawar 01



AMJAD RASHEED

Design / Tender Engineer
Al Fanar Co.
P.O. Box 301, Riyadh 11411
B.Sc. (EE) UETL 81



AMMAR ILYAS BUTT

Sr. Electrical Engineer
Assystem Radicon
Firas bin Nader street, olaya, khobar
Email: ammar.ikkgroup@gmail.com
BS Univ of Central Punjab 10



ANIS-UR-REHMAN

Site Engineer
Services & Solution LTD. KSA
Riyadh
Email: anis.rrrehman@ssc-arabia.com
B.Sc. (EE) UETL 08



ANWAAR HAIDER BANGASH

Sr Generation Engineer
SAUDI ELECTRICITY COMPANY (WOA)
Email: ahangash12@gmail.com
B.E MEUT 90



ANWAR AHMED MALIK

Sr. Electrical Engineer
SABIC
P.O Box 10002 Jubail 31961
P.O Box 10002 Jubail 31961
Email: malika@sabic.com
B-Tech UETL 81



ANWAR NAZAR ALI JIWANI

Sr. Electrical Engineer
Abdullah Abal Khail Consulting Engrs.
P.O. Box 4074, Riyadh 11491
B.E. (EE) NED 77



ANWARUL HAQ PASHA

QA/QC Coordinator
Radicon Gulf Consultants
PO Box 684, Al-Khobar 31952
Email: ahp311@gmail.com
B.Sc. (EE) UETL 73



AQIL NASIR MIRZA

Control Systems Engineer
PETROKEMMYA
P.O. Box 10002, Jubail 31961
B.Sc. (EE) HP 83



ASAD ALI HASSAN

Sales Manager
EATON Khobar
Al Khobar
Email: asadhassan@eaton.com
B.E. (EE) NED 03



ASHIQ HARAL

Project Manager
ABB Contracting Company
Aziziyah, near Masjid Toawan, Jeddah
Email: ashiq.haral@sa.abb.com
M.Sc, UETL, 2003



ASIF MAJEED

Lead Engineer, I&C, PP-9
NESPAK
P.O. Box 2341, Riyadh 11451
B.Sc. (EE) UETL 80



ASJAD ALI

Project Engineer
Al Fanar Projects
Dammam
Email: asjadwaraich@gmail.com

Electrical Engineers

**ASRAR HUSSAIN**

Managing Engineer
SIEMENS Ltd.
P.O. Box 9510, Riyadh
B.Sc. (EE) UETL 76

**ATHER JAMIL DAR**

Planning Engineer
Saudi Telecomm. Company (STC)
Rm 208, STC HQ, P.O. Box 87912, Riyadh 11652
Email: ather62@hotmail.com
B.Sc.(EE) UETL 87, M.Sc (EE) UETL 98

**ATIFULLAH**

Site Manager
International Contracting Co.
Riyadh
Email: atifsacedksa@gmail.com
BS Elect Engg MS Project Mgt.

AWIS ALI SHAH

QC Electrical Inspector
Sinopec
Jeddah
Email: awaisalishah78@gmail.com
MSc Electrical Engg. HITEC Uni. Taxila 2021

AZHAR AHMAD SIDDIQUI

Project Manager
SIEMENS
P.O.Box 719, Khobar
Email: azhar.siddiqui@siemens.com
B.E. (EE) UOP 02

**AZIMUDDIN QURESHI**

Senior Electrical Engineer
Saudi Biad Co. Ltd.
P.O. Box 6121, Jeddah 21442
B.E. (EE) NED 75

**AZIZ UR-REHMAN MALIK, DR.**

Protection Engineer
Saudi Electric Company (SEC-COA)
P.O. Box 57, Riyadh 11411
Email: azizmalik750@yahoo.com
B.Sc. (EE) UETL 86, M.S.& Ph.D. (ECE) UMF USA

**BABAR ZAGFAR**

Lead Electrical Engineer
Bechtel/Royal Commission
159 Desert Rose Compound, AlRaka Janubia, Khobar
Email: zafarb@rcjy.gov.sa
BE EE NED Khi 94, M.Sc EE Concordia Uni Montre

**BASHIR AHMAD MALIK**

Data Network Expert
Saudi Telecomm. Company
Riyadh
B.Sc. (EE) UETL 75

**BILAL AKHTAR**

Sales Manager
Saudi Electric Supply Company (SESCO)
P.O. Box 3298, Al-khobar 31952
Email: bilalmakhtar@gmail.com
B.Sc. (EE) UETL 02

BILAL ASIF

Regional Manager Radio Optimization
Huawei
P.O.Box 15489, Dammam 31444
Email: bilal.asif@gmail.com
BSc UET Lahore 2000

**BILAL NAZIR**

Construction Engineer Onshore
Saipem Saudi Arabia
Al-Khobar
Email: bilal.nazir30@gmail.com
BSc UET Mirpur, Azad Kashmir 2013

**CHAUDHARY MOHAMMAD ASHRAF**

Projects Manager
A. Abunayyan Trading Corp.
P.O. Box 321, Riyadh 11411
B.Sc. (EE) UETL 88

DR. RIAZ INAYAT

ICT Manager
DAR Engg International Consultant
Tamkeen Tower, Yasmeen Dist. Riyadh
Email: riaz.inayat@gmail.com
PhD ICT Engineering, Hiroshima Univ. 2004

**FARHAN SOHAIL YEZDANI**

Business Development Manager
HITACHI ENEGERY Ltd.
Email: fsohail42@gmail.com
B.Sc. (EE) UETL 00, MBA BU UK 05

**FARHAN UL HASSAN ANSARI**

Planning engr
Tasnee
Jubail
B.E. (EE) 99

Electrical Engineers

**FARRUKH BASHIR**

Senior Electrical Engineer
Khatib & Alami Consolidating Engineering Co.
Madinah Al Munawwarah
Email: fabashir@hotmail.com
B Sc Eleect, UET Lhr 90

**GHAZANFAR ALI**

Electrical Field Engr.
GE Energy KSA
P.O.Box 2321, Dammam 31451
Email: ghazanfar.ali@ge.com
B-Tech. (EE) IIK 07

**HAFIZ MUHAMMAD UMAR**

Engineer
Interpole Arabia Company
Dammam
Email: muhammadumarar@gmail.com
BE Elec. NEDUET 21

**HAMIDUR RAHMAN ADNAN**

Marketing Manager
Danger Management System
Energy House, P.O. Box 92102, Riyadh 11653
Email: hr_adnan@hotmail.com
B.E. (E) NED 97

**HAMZA JAVAID**

Sr. Automation Engineer
TIEPCO
PO Box 2705, Dammam 31461
Email: hamza.javaid@altuwairqi.com
B.Sc. (EE) UETL 01

HASSAN SIDDIQUI

Marketing Activity Manager
Schneider Electric
Riyadh
B.E. (EE) NED 92, MBA IBA 97

**HUMAYUN AKHTAR**

Management Information System
Saudi Telecom Company (STC)
P.O. Box 59726, Riyadh 11535
B.Sc. (EE) UETL 79, PMP

**IFTEKHAR AHMAD**

QC Electrical Engineer
Jubail
Jubail
Email: engriftekhharahmad@gmail.com
BSc Electrical Engg. UET Peshawar 2008

**FATEH KHAN**

Section Engineer
Saudi Electric Company
P.O. Box 57, Riyadh 11411
Email: fatehkhkhan692@hotmail.com
B.Sc. (EE) UETL 74

**GHULAM RASUL MERCHANT**

Project Manager
Zamel & Turbag Consulting Engineers
Jeddah
Email: grasulm@hotmail.com
B.E. (EE) SUEngg Jamshoru 68

**HAFIZ MUHAMMAD USMAN JURH**

Director Technical
Hamdan Consult
Jubail
Email: hafiz.usman@hamdanconsult.com
B.E, UETL 97

**HAMMAD RAFIQ**

Lead Electrical Engineer
DAR Consulting Engineers
Al-Jubail
Email: hammad.rafiq@gmail.com
B.E UET Lahore 2002, MBA Pak-Aims 2007

**HASEEB SHAH MEHRAB**

Sr. Engineer (Power)
Saudi Electric Company
COA HQ, Granada Office Riyadh
Email: Haseebshahmehrab86@gmail.com
PhD (Energy Studies) UBD Brunei Darussalam, UoC C

**HASSAN SULTAN**

Electrical engineer
Odwa al olya engineering
Khobar
Bsc Electrical NFC IEFR Faisalabad 12

**HUSAIN AHMED**

Engineer
Saudi Electric Company
Jubail
Email: husain_ahmed8@yahoo.com
B.E. (EE) NED 73

IFTIKHAR AHMED CHEEMA

Manager Projects
Newland Est.
P.O. Box 21626, Riyadh
B.Sc. (EE) CUC 81

Electrical Engineers

**IMRAN MAHMOOD**

CEO
Arabian Etimaad Industrial Co.
P.O.Box 35037, Plot 3007 Jubail 31961
Email: imran.mahmood@etimaad.com
B.Sc. (EE) UETL 81

**IQBAL AHMED**

Sr. Engineer SCADA & Telcom
VA TECH Schneider, T&D Ltd. Co.
P.O. Box. 91357, Riyadh 11633
B.Sc.(EE) UETL 98

**IRFAN ALI SHAH**

Lead Protection Quality Specialist
General Electric (GEMTEC)
Dammam 2nd Industrial city P.O. Box 191
Email: alee.xhah@hotmail.com
B.Eng Hons (EE), 12

**IRHSAD MEHMOOD**

Technical Project Manager
STC Solutions
Muraba Riyadh KSA
Email: armehmood@hotmail.com
BE Telecom, NUST ISB 2000

**ISHTIAQUE AHMAD FAHMEED**

Transmission Engineer
Saudi Electricity Company- EOA
PO Box: 5190 Dammam 31422 KSA
Email: safahmeed@se.com.sa
B.Sc. (EE) UETL 95, MS (EE) UETL 04

**ISRAR UL HAQ**

Maintenance Engineer
Riyadh Water Works
P.O. Box 12622, Riyadh 11483
B.Sc (EE) UOP 73

**JALEEL HASAN**

Chief Executive Officer
AB Contracting
P.O. BOX 235804, RIYADH 11393
Email: jaleel.hasan@gmail.com
B.E.(E) SGW 70, M.Phil UOB 72

**JAMSHED AHMED CHAUDHRY**

Sr. Project Manager
ABB Contracting Co.
PO Box. 251, Riyadh 11381
B.Sc. (EE) UETL 78

**INAM KHAN**

President
Saudik Co Ltd
P.O. Box 6609, Dammam 31452
Email: mail@saudik.com
B.Sc (EE) UETL 64

**IQBAL ISMAIL KHURRAM**

Business Manager
Lucent Technolog
P.O. Box 4945, Riyadh
Email: kismail@lucent.com
B.Sc. (EE) UETL 91

**IRFAN ALI SHAH**

Lead Production Quality Specialist
GE Manufacturing Technology Center (GEMTEC)
Dammam 2nd Industrial City. P.O.Box 191 , KSA
Email: Irfan.Ali.Shah@hotmail.com
B.E EE Comsats, MS EM GW USA

**IRTEZA HASAN**

Senior Electrical Engineer
Saudi Bin Ladin Group
Jeddah
Email: irteza.hasan@gmail.com
BE Electrical NED UET 05

**ISLAM AHMAD ASIF**

General manager
Arabian Electrical Transmission Line Co. (AETCON)
P.O. Box 172, Dammam 31411
Email: aetcon@aetcon.com
B.Sc. (EE) AMU 64

**JAHANGIR HASAN**

Electrical Engineer
SCEC Khatib & Alami
Khobar
Email: jehangiir@gmail.com
BE (EL) NED11, MSC (EL) NED 17

**JAMIL NOOR MEMON**

Resident Manager
Sincina
Khobar
Email: jamilnoor_68@yahoo.com
B.E. (EE) 91, MBA IBAJ 03

**JAVOID HAMEED**

Dispatch Engineer
Saudi Electric Company (ERB)
SOD/PDD, P.O. Box 5190, Dammam 31422
Email: javaids2000@hotmail.com
B.Sc. (EE) UETL 81

Electrical Engineers

**JAVOID IQBAL ZAHID**

Manager
TIEPCO
PO Box 2705, Dammam 31461
Email: javaid.iqbal@altuwairqi.com
B.Sc. (EE) 86

**JAVED SHAMIM**

Technical Advisor
Saudi Telecomm. Company (STC)
P.O. Box 86004, Riyadh 11622
Email: jshamim@stc.com.sa
B.S. (EE) NU 76

**KAMAL MAJID**

Project Director
SIEMENS
PO Box 9510,
Email: kamal.majid@siemens.com
B.E. (EE) NED 96, MBA IBA 99

**KAMRAN MASOOD KHAN**

Distribution Engineer
SEC
Granada, Riyadh
Email: kamran293@gmail.com
BE, UETL 02

**KAUSER MAHMOOD BUTT**

Consultant Engineer
Saudi Electric Company (CRB)
P.O. Box 57, Riyadh 11411
Email: kmbutt43@hotmail.com
B.Sc. (EE) UETL 69

KHAWAJA HASSAN TAHIR

LEAD ENGINEER (I&C DESIGN)
DESCON ENGINEERING
Email: TAHIR.HASAN0@GMAIL.COM
BSc CECOS U. of IT & Emerging Sciences 2009

**M. ASHRAF KHAN**

Manager Training
Schneider Electric
P.O. Box 89249, Riyadh 11682
Email: ashraf99ca@yahoo.com
B.Sc. (EE) UETL 76, M.A.Sc (EE) UW 98

**MAHMOOD SARWAR MALIK**

Elec. Engr. (Projects-SEC COA)
Dar Al-Riyadh
P.O. Box Box 57, Riyadh
Email: MSKMalik@se.com.sa
B.Sc. (EE) UETL 73

**JAVED AHMED SIDDIQUI**

Electrical Engineer
SEC Consultant (Al-Othman)
Riyadh
Email: jasiddiqui21@hotmail.com
B.E. (EE) MUET 01, P.G.D (EE) MUET 08

**JUNAID AHMAD HASHMI**

EDP Manager
National Gas & Industrialization
P.O. Box 564, Riyadh 11421
B.Sc. (EE) Madras 67, M.E UOL 69

**KAMRAN KHAN**

Instrument Engineer
GCC Gulf consolidated contractors
Abkaik office
Email: kkhan@gccksa.com
DAE Swedish Inst of Tech 2006, BSc U. of Wah 2010

**KAMRAN MUHAMMAD ZAFAR**

Sales Engineer
SESCO
Alkhobar
Email: kamran.zafar20@gmail.com
BSSc UET Lahore 2012, MSc KFUPM 2016

**KHALID NIAZ SHEIKH**

NOKIA Al Saudi
Email: khalidniazsheikh@yahoo.com
Implementation Manager

**KHAWAR RASHEED**

Transmission Line Design Engineer (National Grid SA)
Dar Engineering
Building#91 Flat#15 Sheikh Mukhdoob Road Al Fallah
Email: kapirkhan@se.com.sa
BSc Elec, Mirpur Univ, AJK 07

**M. JAVED AKHTAR**

Electrical Engineer
SaudConsult
P.O. Box 1293, Dammam 31431
B.Sc.(EE) UETL 89

MALIK HUSSNAIN ABBAS CHUN

Electrical Engineer
Systra
M Al Sabeck Office Prince Faisal Bin Turki Rd Riyadh
Email: engr.ham@gmail.com
BSc UCE&T, Bahauddin Zakariya U, Multan 08

Electrical Engineers

**MAQSOOD ALAM**

Factory Manager
Middle East Electric Meter Factory
P.O. Box 61891, Riyadh 11575
B.Sc. (EE) UETL 87

**MASOOD ALI KHAN**

Site Manager
Al Fanar Projects
Dammam
Email: masoodakhan84@gmail.com
BSc Electrical UET Peshawar 2006

**MASOOD UTERO**

Project Manager
WeBuild
Shuqair, Jazan
Email: utero.masood@gmail.com
BSc Electrical Engg. Mehran Uni. 1993

**MASROOR AKBAR RAMZI**

Electrical Engineer
Saudi Electric Company (CRB)
Al-Marooj Area
B.Sc (EE) UETL 90

**MASUD UL HASAN**

Lecturer
KFUPM
KFUPM P.O. Box 947, Dhahran 31261
Email: masud@kfupm.edu.sa
B.E. (EE) NED 88, MS KFUPM 93

**MIAN MUHAMMAD ISRAIL**

Transmission Engineer I
Saudi Electric Company
Tower A2 Floor 14 Ghernatah, P. O. Box 22955, Riyadh
KSA
Email: 87632@ngrid.sa
B.E. (EE) NWFP UET 02, B.Tech (Honrs.)

**MOAZZAM AHMED CHANNA**

Electrical Engineer
SSEM
PO Box 6341, Riyadh 11442
Email: engineer.moazzam@gmail.com
BE (EE) MUET Jam 07

**MOHAMMAD ABDUL HALIM BUKHARI**

Electrical Engineer Power & Co
Abdulla Fouad Co. Ltd
P.O. Box 257, Dammam
B.E. (EE) NED 70

**MAQSOOD HUSSAIN TARIQ**

Project Manager
Saudi Consulting Services (Saudconsult)
P.O. Box 7352, Jeddah 21462
Email: maqsoodtariq@saudconsult.com
B.Sc (EE) UETL 70

**MASOOD HAMID**

Chief Project Manager
National Power Construction Corporation
P.O. Box 31220, Jeddah 21497
Email: masoodhamid@yahoo.com
B.Sc. (EE) UETL 74

**MASOOR AHSAN SIDDIQUI**

Communication Specialist
Saudi Arabian Airlines
P.O. Box 167, Jeddah 21231
B.Sc. (EE) WSC 70

**MASUD KHAN**

Project Engineer
Al-Fanar
P.O. Box 301, Riyadh 11411
B.Sc. (EE) NWFP UET 74

**MAZHAR NOOR**

Customer Support Engineer
Nokia Solutions & Networks (NSN)
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: mazhar.noor@nokia.com
B.Sc (EE), UETL 85

**MIR MAJID TAUSEEF**

Sr. Engineer (Planning)
Saudi Electric Company
P.O. Box 57, Riyadh 11411
Email: mirmajidtauseef@hotmail.com
B.Sc. (EE) UETL 75

**MOBASHIR AHMED SHEIKH, DR**

Technical Advisor
Al-Afandi Est.
P.O. Box 452, Jeddah 21411
B.E. (EE) NED 72, M.S (EE) USC 74, Ph.D (EE) US

**MOHAMMAD ABDULLAH**

Project Manager
Saudi Consulting Services
P.O. Box 1293, Dammam 31431
Email: mabch_pk@yahoo.com
B.Sc. (EE) UETL 87

Electrical Engineers



MOHAMMAD ABRAR SHAMI

Project Manager - Telecomm
Saudi Electricity Co. (EOA)
P.O. Box 5190, Dammam 31481
Email: mshami65@gmail.com
B.Sc. (EE) UETL 90, M.Sc. (EE) UETL 94



MOHAMMAD AFTAB ALAM KHAN

Power Plant Manager
Yamama Saudi Cement Co.
P.O. Box 293, Riyadh 11411
Email: maak65@hotmail.com
B.Sc. (EE) NWFP UET 89



MOHAMMAD AFZAL

Transmission Engineer
SAUDI ELECTRICITY CO. (COA)
P.BOX 22955, RYD 11416, GHERNADA BUSINESS
FL.14, KSA
B.Sc. (EE) UETL 67



MOHAMMAD AMIN UDDIN AHMED

Country Manager
Hubbell Elect. Systems
P.O. Box 845, Dammam 31411
Email: aminuddin512@gmail.com
B.E. (EE) NED 91



MOHAMMAD ASHFAQ

Asstt Vice President
MEMF Iradya Intl.
P.O. Box 61891, Riyadh 11575
B.Sc. (EE) UETL 91



MOHAMMAD ASIF

Chief Operating Officer (COO)
Med BioSystems Co.
Riyadh
Email: muhammadasif_cyprus@hotmail.com
B.Sc. (EE) NEU 03



MOHAMMAD ASIM SIDDIQUI

Technical Architect
Nokia Networks
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: siddiquiyusuf@yahoo.com
M.Sc. (Phy) QAU 95, MS (EE) USA 99



MOHAMMAD AWAIS

Senior Engineer Planning
Saudi Electric Company (ERB)
P.O. Box 85, Jubail 31951
Email: mohammadawais@hotmail.com
B.Sc. (EE) UETL 75



MOHAMMAD ADNAN KHAN

Sales Supervisor
S&A Abahsain Co. Ltd.
P.O.Box 38994, Dammam Ind. City II
Email: adnank@abahsain.net
B.E. (EE) NED 01



MOHAMMAD AFZAL

Project Manager
Satech
Al-Khobar
Email: abusoban93@gmail.com
B.Sc. (EE) UETT 91



MOHAMMAD AJMAL KHAN

Naval Engineer (R&D)
Royal Saudi Naval Forces
P.O. Box 61721, Riyadh 11575
B.Sc. (Eng) London U UK 66



MOHAMMAD ARSHED CHAUDHRY

Specialist, Power Trans. Engg.
Saudi Electric Company
P.O. Box 57, Riyadh 11411
B.Sc. (EE) UETL 76



MOHAMMAD ASHRAF

Project Manager
Mitsubishi Elevators Saudi Arabia (MELSA)
P.O. Box 14166, Jeddah 21424
B.Sc. (EE) UETL 92



MOHAMMAD ASIF SHAFIQUE

Electrical Engineer
SEC Consultant (Al-Othman Consultant)
Riyadh
B.Sc. (EE) UETL 04, M.Sc. (EE) UETP 08



MOHAMMAD ASLAM

Project Manager
STESA
P.O. Box 5463, Riyadh 11422
Email: aslam@stessa.com
B.Sc (EE) UETL 69, PGD PII 71



MOHAMMAD AYAZ QUTUB

Sr. Unit Engineer Operations
Saudi Electric Company (COA)
P.O. Box 18335, Riyadh 11415
Email: ayazqutub@hotmail.com
B.Sc. (EE) UETL 72

Electrical Engineers



MOHAMMAD DAWOOD RATTU

Manager (Business Develop)
Powerzone Trading
Alkhobar
Email: drattu@yahoo.com
BS EE PV A&M USA 86, MS EE UET Lhr 99



MOHAMMAD HAFEEZ-UR-RAHMAN

Power Section Head
Royal Commission Jubail
P.O. Box 10001, P&T Dept., Jubail 31961
B.Sc. (EE) UETL 76



MOHAMMAD HASSAN SHEIKH

Electrical Engineer
Zuhair Fayeze Consultants
P.O. Box 5445, Jeddah 21422
Email: shaikh Hassan48@hotmail.com
B.E. (EE) SU 72



MOHAMMAD IDREES FAROOQI

Unit Engineer
Saudi Electric Company
P.O. Box 7604, Al-Khobar 11472
B.E. (EE) SU 76



MOHAMMAD ILYAS

Electronic Engineer
Jeddah Water Works
P.O. Box 8504, Jeddah 21492
Email: milyasabd@yahoo.com
B.Sc. (EE) UETL 71



MOHAMMAD IMTAR

Lecturer
University of Dammam
Dammam
Email: imtaar@hotmail.com
B.Sc. (EE) UETL 76, M.S KFUPM 81



MOHAMMAD IQBAL

Electrical Engineer
National Engineering Services of Pakistan
Power Group Saud Consult Riyadh
Email: powergroup@saudconsult.com
B.Sc. (EE), Peshawar Engg. College 80



MOHAMMAD IQBAL GHADAI

Sr. Director - Technical
Aero Tech
CC905, Box 620, Jeddah 21231
Email: iqbalg1@yahoo.com
B.S. (EE) CSU 72



MOHAMMAD JAVAID SIDDIQUI

Electrical Engineer
Al-Rashid Trading & Contracting Co.
P.O. Box 307 Riyadh 11411
B.E. (EE) MUET 76



MOHAMMAD KHALID AHMAD KHAN

Manager - Western Province
Centronic Int.
P.O. Box 10441, Jeddah 21331
B.E. (EE) NED 88



MOHAMMAD MAHMUD

Projects Manager
Al-Shaharani Group for Contracting
P.O. Box 86820, Riyadh 11632
Email: gct_lhr@yahoo.com
B.Sc (EE) UETL 75, M.Sc UETL 91



MOHAMMAD MAHTAB ALAM KHAN

Senior Specialist Aircraft Eng
Saudi Arabian Airlines
P.O. Box 167, Jeddah 21231
B.E. (EE) NED 69



MOHAMMAD MANSHA VIRK

Unit Engineer
Saudi Electric Company
P.O. Box 7604, SCECO-C, Riyadh 11472
B.Sc. (EE) UETL 74



MOHAMMAD MAROOF-UZ-ZAMAN

Sr. Sales Manager
Schneider Electric
P.O. Box 118132, Jeddah 21312
B.Sc. (EE) Zakazik U Egypt 80



MOHAMMAD NADEEM IQBAL WARAICH

APCS Div. Manager
Husain Ali Husain (HAH) Trading & Contracting Est.
Al Hamra, P.O. Box 1221301, Riyadh-11311
B.Sc. (EE) UETL 95



MOHAMMAD NAVEED ARSHAD

Relay & Prot. Design Engineer
Dar Al Riyadh Consultants
P.O. Box 1832, Jubail 31951
B.Sc. (EE) UETL 91

Electrical Engineers

**MOHAMMAD NOOR ALAM**

Electrical Engineer
Consulting Engineering Group (MOH)
P.O. Box 1604, Riyadh 11311
Email: mohammadnooralam@gmail.com
B.Sc. (EE) BCE 67

**MOHAMMAD RASHID QAZI**

Senior Electrical Engineer
Al-Jubail
B.Sc. (EE) UETL 82

**MOHAMMAD RIAZ**

Field Operation Manager
Telefonaktiebolaget LM Ericsson
P.O. Box 6121, Riyadh 11442
B.Sc. (EE) UETL 71

**MOHAMMAD SHUJAAT CHOUDHRY**

Electrical Engineer
Al Fanar Co.
P.O.Box 301, Nafal, Exit 6, Riyadh 11411
Email: shuja_ee@hotmail.com
B.E. (EE) NED 05

**MOHAMMAD TAUSIF**

Consultant
Saudi Electric Company
P.O. Box 40393, Riyadh 11499
Email: mtausifm@hotmail.com
B.E. (EE) NED 68

**MOHAMMED TAHIR USMANI**

RSO NPO Stream Manager
Nokia Solutions & Networks (NSN)
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: tahir_usmani@yahoo.com
B.E(Telecom), LBSU, California, USA 95

**MOHSIN RAZA CHATTHA**

Electrical Engineer
Al Qahtani Pipe Coating Industries
Al Dammam, Ash Sharqia, Saudi Arabia
Email: chatha.mohsin@gmail.com
BS EE Univ of Lhr 11

**MUBASHAR HUSSAIN**

Site Engineer
Arail Construction & Industrial Co
Malaz, Riyadh, KSA
Email: hussainidap14@gmail.com
B.E. UET Lhr 18

**MOHAMMAD RASHAD BHATTI**

Electrical Design Engineer
MODA - GDMW
P.O. Box 59105, Riyadh 11525
Email: bmr243@hotmail.com
B.Sc. (EE) AUM 90, M.Sc (Mgt.E) AUM 92

**MOHAMMAD RASHID SARWAR**

General Manager
Mohammed Rashid Sarwar Est. (EUROTECH)
P.O. Box 8906, Jeddah 21492
Email: mr_albarq@hotmail.com
B.Sc.(EE) UOP 79

**MOHAMMAD SADIQ KHAN**

Section Head
Saudi Electric Company (CRB)
P.O. Box 57, Riyadh 11411
B.Sc. (EE) UETL 70

**MOHAMMAD TARIQ SHAFI**

Project Engineer (Aut & Cont)
Al-Tuwairqi
P.O. Box 2705, Dammam 31461
B.Sc. (EE) UET 01, MSc (Cont) UET 01

**MOHAMMAD ZAFAR ULLAH**

Electrical Engineer
Min. of Finance & National Economy
Nasseriah P. Station, P.O. Box 5789, Riyadh 11432
B.Sc. (EE) UETL 74

**MOHSIN RASHID KHAN**

Transmission Engineer
Saudi Electricity Company, Aramco Projects
P.O.Box 5190, Dammam 31422
Email: mrkhan4@se.com.sa
B.Sc (EE), AJKU 94

**MUBASHAR HASSAN**

Sales Director
Schneider Electric
PO Box 3789, Al-Khobar 31952
B.Sc. (EE) UETL 99

**MUBASHIR ZAWAR HUSSAIN**

Electrical / Cathodic Protection Engineer
ILF Consulting Engg.
Riyadh
Email: mubashir.zawar@ilf.com
BSc EE, UETL 10

Electrical Engineers

**MUDASSIR MASOOD**

Assistant Professor
KFUPM
Electrical Engineering, Building 59, KFUPM, Dhahran
Email: mudassir.masood@gmail.com
MS KFUPM 05, PhD King Abdullah U. of Science and

**MUHAMMAD ABDULLAH ARAIN**

Senior ICT/ELV Engineer
Saudi Consulting Services
Riyadh
Email: m.abdullah@saudconsult.com
BE Telecom QUEST (Quaid-e-Awam University of Eng Sciences & Technology) Nawabshah

**MUHAMMAD AKHTAR CHAUDHRY**

Transmission Engineering Specialist
Saudi Electric Company (EOA)
Tower A2 Floor 14 Ghernatah, P. O. Box 22955, Riyadh KSA
Email: akhtarc@hotmail.com
B.Sc.(EE) UETL 84, M.E KFUPM 88

**MUHAMMAD AMMAD FEROZE**

Sr. Elec Ddesign Engineer
REDCO INTERNATIONAL KSA
DUBA
Email: ammad.feroze.89@gmail.com
BE (Mech) NED UET 11, MBA IOBM 15

**MUHAMMAD ASIM KHAN**

Project Control Engineer
Bin Quraya
Khobar
Email: asimk2828@gmail.com
Bachelors in Electrical

**MUHAMMAD ATIQULLAH**

Senior Electrical Engineer
Saudi Consolidated Engineering Company
Alkhobar
Email: matiq54@hotmail.com
BE NED 79

**MUHAMMAD FAROOK KHAN**

Department Manager
SIEMENS
Raja tower P.o.BOX 719, Khobar 31952
Email: farook.khan@siemens.com
B.E. (EE) NED 97

**MUHAMMAD HAMID**

Director, Fire and Safety Training Center
Jubail Industrial College, RC
PO BOX 10099, Jubail Industrial College, Jubail 31961
Email: sadekmh@gmail.com
BE NED Kar 99, MS KFUPM 01

**MUHAMMAD ABDUL WASAY**

Telecom Engineer
Manaret Shahbaa Contruction Group
Riyadh
Email: wasay15@gmail.com
B.E NW PolyTech U. Zian, China 2017

**MUHAMMAD ADNAN**

Telecom Engineer
Saudconsult
P.O.Box 2341, Riyadh 11451
Email: m.adnanilyas@yahoo.com
BE Hamdard U ISB 15

**MUHAMMAD ALI RAFI**

Assistan Engineer
AETCON
Bldg 6803/14, Dist Shuhada Garnata, Riyadh
Email: alirafiawan@gmail.com
B.Sc (EE), Cecos U Peshawar

MUHAMMAD ASIF CHAUDHRY**MUHAMMAD ATIF BAIG**

Engineering Manager
MEMF Electrical Industries Co.
Hay Alwazarat
Email: atif.baig@memf.com.sa
BE UETL 02

**MUHAMMAD AZEEM**

Data Network & ELV Engineer
Saudi Consulting Services
Email: mazeem@saudconsult.com
BS Telecom Universty of Lahore

**MUHAMMAD HAMID**

Lead Infrastructure Engineer - Roads
SYSTRA
Wizarat, Riyadh
Email: ashk123.sa@gmail.com
B.E Elec NED Khi 93

**MUHAMMAD IMRAN SAIR**

Site Manager UGTL
M/S Siemens Arabia LTd.
Riyadh
Email: sair45@gmail.com
B.Sc. Mechatronics & Control Engg, UETL 04

Electrical Engineers

**MUHAMMAD KASHIF FAHIM**

Project Manager MEP
V3 International Engineering Consultants
P.O. Box 3207 Central Post, Riyadh
Email: kashif_fahim@yahoo.com
B.Tech. (EE) NICE 07

**MUHAMMAD QIASH**

Protection Engineer
Aljazirah Engg & Consultant
Riyadh
Email: qiaashyaqub@gmail.com
B.Sc. (EE) UETPK 75

**MUHAMMAD RIZWAN**

Electrical Engineer
Saudconsult
P.O.Box 2341, Riyadh 11451
Email: mrizwan@sauconsult.com
BE Uni of South Asia, LHR 12

**MUHAMMAD SALAHUDDIN KHAN**

Project Engineer
SEC, EHV Projects Riyadh
Email: salahuddin268@gmail.com
B.E. (EE) NED 03

**MUHAMMAD SALEEM SABIR**

System Information Specialist
SEC
PO Box 606, Abha
Email: ssabir74@hotmail.com
B.E. (EE) NED 86

**MUHAMMAD SAUD SARWAR**

Chief Sales Officer
National Advanced Systems Co. Ltd
Alkhobar
Email: m.saudsarwar@gmail.com
BE NUST 05

**MUHAMMAD SHAHID**

Protection & Automation Engineer
SIEMENS
P.O.Box 4521, Jeddah
Email: engr.shahid26@gmail.com
B.Tech Hons (EE), Preston U 12

**MUHAMMAD SUHAIL**

Sr Electrical Engineer
Naizak Global Engineering Systems
Makkah St Thuqbah Alkhobar
Email: msuhail_k@yahoo.com
B-Tech (Hon) Preston Inst 10

**MUHAMMAD TAHIR**

Electrical Engineer
Al-Qahtani Pipe Coating Industries
P.O.Box 1980, Dammam 31441
Email: engineertahirawan@gmail.com
BE NED Karachi 05

**MUHAMMAD TAHIR ANSARI**

Design Engineer
Al-Tuwairqi Group
Dammam
Email: tahirjee_76@yahoo.com
B.E. (EE) MUET JAM 00

**MUHAMMAD TAYYEB TAHIR**

Project Engineer (Telecom)
Magyece Consulting House
Email: tayyabtahir1964@yahoo.com
B.Sc UET AJK 89

**MUHAMMAD UMR IRFAN**

Project Engineer
Al-Jazirah Engineers & Consultants (AJEC)
Mishrifah -Jeddah
Email: umerirfan07@gmail.com
BS Sir Syed UET 09

MUHAMMAD USMAN RAFI

Divisional ENGINEER
AETCON
P.B.NO 172, DAMMAM - 31411
Email: Usman_15608@yahoo.com
B.E EE, UETL 12

**MUHAMMAD YASIR ABDU**

Electrical Section Head
Nomac-ACWA Power
Rabigh, KSA
Email: linkyasir1@hotmail.com
BE Elec. NEDUET 08, ME NEDUET 11

**MUHAMMAD ZESHAN JOIYA**

Commissioning Engineer
Royal Tech
Riyadh
Email: mzeshanjoiya648@gmail.com
MSc Electrical Power Systems Engineering

**MUJAHID AHMAD**

Senior Electrical Engineer
Mobiley
P.O. Box 69179, Riyadh 11423
Email: m.mumtazahmad@mobily.com.sa
B.Sc. (EE) UETL 76

Electrical Engineers

**MUKESH KUMAR**

Senior Electrical Engineer
Al-Bassam Contracting & Commerce
P.O. Box 24, Al-Khobar 31952
B.E. (EE) NED 83

**MUMTAZ ALI SHAIKH**

Project Engineer (Elect)
Radicon Gulf Consultant
Khobar
Email: mumtaz01_pk@yahoo.com
BE (EE) MUET JAM 98

**MUNEEB AHMED ANSARI**

Sr. Electrical QA/QC Engineer
Albawani Construction Company
Ar Rabwah, Jeddah
Email: muneebansari@yahoo.com
BE Electrical NED UET 98

**MUNIR AHMAD HASRAT**

Electrical Engineer
Raghadan Company
Projects Dept., Room 248, Riyadh 11146
B.Sc. (EE) UETL 74

**MUSHARRAF ALI KHAN**

Director
PLASCOM
P.O. Box 18595, Riyadh 11425
B.E. CEI 76, MIQA IQA 81

**MUSHIR AHMED SIDDIQUI**

Head of Electrical Department
SHARACO
P.O. Box 5500, Riyadh 11422
Email: mushirsiddiqui@hotmail.com
B.E. (EE) NED 76

**MUSHTAQ AHMED AZAD**

Senior Transmission Engineer
Saudi Electricity Company (SEC)
Transmission Building No. C, Al-Marooj, Riyadh
Email: mushtaqazad@hotmail.com
M.Sc.(EE) UETL 90, B.Sc (EE) UETL 76

**MUSHTAQ AHMED M. BHUTTO**

Telecom Engineer
Saudi Electric Company SEC-SOA
P.O. Box 616, Abha
Email: bhuttomushtaq@hotmail.com
B.E. (EE) MUET 90

**MUSHTAQ AHMED SOOMRO**

Unit Engineer "A" Prot. Sec.
Saudi Electric Company (CRB)
PP3, Prot. Sec. P.O. Box 57, Riyadh 11411
B.E. (EE) MUET 85

**MUZAFFAR UL HASSAN**

Distribution Engg. Specialist
Saudi Electric Company
P.O. Box 57, Riyadh 11411
Email: muzaffar_ul_hassan@hotmail.com
B.E (EE) NED 75

**NAEEM AZIZ BHATTI**

Engineering Manager
SCADO
Alkhobar
Email: naeembhatti11@gmail.com
BSc UET Lahore 1976

**NAEEM UD DIN**

Electrical Maintenance Eng.
Saudi Electric Company
P.O. Box 57, Riyadh 11411
B.Sc. (EE) UETL 73

**NAEEM ULLAH SHEIKH**

Operations Manager
B.P Solar Arabia Ltd
P.O. Box 191, Riyadh 11383
Email: naeem@bpsarabia.com.sa
B.Sc. (EE) UETL 88

**NASIR SHARIF**

Manager Engg & Development
TIEPCO
PO Box 2705, Dammam 31461
Email: nasir@altuwairqi.com
B.E. (EE) NED 88

**NAVEED AHMAD, PMP**

Operations Manager
Hitachi Energy
P.O. Box 414, Riyadh 11383
Email: engr.naveedahmad@yahoo.com
B.Sc.(EE) UETL92, MS(EE) ICUL95, PMP, MCPM G'

**NAVEEL QAYYUM HASHMI**

Electrical Engineer
SEC
SEC Head Office Dammam
Email: naveelhashmi@yahoo.com
BSc Engg UET Taxila 11, MSc Engg ICBS LHR 16

Electrical Engineers

NEELAM ABDUL HASEEB

Street 5, Al Tobaishi, Dammam -32233
Email: neelam.arshad86@gmail.com
BE NED Kar 08, MS NED 11

NISAR AHMED

Project Engineer
Al-Othman Consultant (SEC)
Substation 9019 at PP# 9, Riyadh
B.E. (EE) MUET 91

NOOR MOHAMMAD KHAN

Electrical Engineer
Saud Consult
SEC-COA, P.O. Box 57, Riyadh
Email: inkhan3@se.com.sa
B.Sc. (EE) NWFP UET 68

OMER QASIM

Near East Univ, TRNC 08
ELECTRICAL DESIGN ENGINEER
AL-JAZIRAH ENGINEERS AND CONSULTANTS
Email: omerqasim@hotmail.com
B.Sc. (EE) UETL 08

QAMARUL HAQUE SIDDIQUI

Sr. Electrical Engineer
BEMCO
P.O. Box 3143, Jeddah 21471
Email: qamarul@sbg-ipp.com
B.Sc. (EE)

RANA SARFRAZ AHMED

Program Manager
Mathar North Riyadh
Email: ror13502@gmail.com
B.E UCET TAXILA 1986, MBA Virtual Univ 2008

RASHEED A. BHUTTO

TRANSMISSION Engineer
Saudi Electric Company SEC-SOA
P.O. Box 616, Abha
Email: engr_rasheed@hotmail.com
B.E. (EE) MUET 93

RAZAUH RAHMAN

Business Development Manager
Schneider Electric
P.O. Box 89249, Riyadh 11682
B.Sc. (EE) UETL 83

NISAR AHMAD PIRACHA

Design Engineer
TIEPCO
P.O. Box 2705, Dammam 31461
B.Sc. (EE) UCET AJK 00, M.Sc. (EE) UETL 06

NISAR BALOCH

Riyadh Branch manager
Schneider Electric
P.O. Box 89249, Riyadh 11682
B.E. (EE) UETL 89

OMAR MUHAMMAD AKHTAR

Services Supervisor
Gulf Power Distribution Systems Co.
PO Box 3298, Dammam 31952
Email: omar.akhtar@gpds-gex.com
B.Sc. (EE) UETL 05

OSAMA MOHAMMAD KHAN

Electrical Engineer
Al Fanar Electrical Systems
P.O. BOX 867, AL-KHOBAR - 31952
Email: osamahkhan91@gmail.com
B.Sc KFUPM 16

RAFIQ AHMED

Senior Engineer
AETCON
P.O. Box 250974, Riyadh 11391
B.E. (EE) MUET 89

RAO ABDUL RAQEEB KHAN

Engineer (Switching)
Saudi Telecomm. Company (STC)
STC Headquarters, Mursalat, Riyadh
B.Sc. (EE) UETL 87

RASHID AYUB QURESHI

Field Engineer
GE Meelsa
Email: engrrash@yahoo.com
B.E. (EE) UET KPK 04

RIZWAN AHMAD

General Manager
Naba International Enterprises
P.O. Box 31163, Al-Khobar 31952
Email: rizwan_asr@yahoo.com
B.E. (EE) NED 74

Electrical Engineers

RIZWAN AHMED ANSARI

Quality Assurance Manager
WESCOSA
P.O Box 2389, Dammam - 31451
Email: rizwan@wescosa.com
B.E. (EE) MUET 91



S. AFZAL HASAN KAZMI

Electrical Engineer
Meezan Technical Services
P.O. Box 84391, Riyadh 11691
B.E. (EE) SU 71

SAEED A. KHAN

Principal Electrical Engineer
SABIC (E & PM)
P.O.Box 11425, Jubail Industrial. City 31861
Email: khansa59@hotmail.com
B.Sc. (EE) UETNWFP 84 & MS USA 87



SAEED WARIS

QA/QC ENGINEER
AECC Advance Electricity Contracting Company
Dammam
Email: saeedwaris417@gmail.com
BSc Electrical Engg. USA Lahore 2014

SAFDAR IQBAL AWAN

Unit Engineer
Saudi Electric Company
P.O. Box 57, Riyadh 11411
Email: safdar777@hotmail.com
B.Sc. (EE) UETL 76



SAGHIR AHMED

E & I Manager
Water and Power System Technology
P.O. Box 8064, Jubail 36136
Email: saghir55@hotmail.com
B.Sc. (EE) UOP 79

SAIFULLAH KHAN

Project Engineer
Marafic
Yanbu
Email: engineer.saifkhan@gmail.com
B.Sc. (EE) UETP 06



SAJJAD AHMAD SAJID

Senior Project Manager
Arabia Electric Ltd (Siemens)
P.O. Box 4621, Jeddah 21412
B.Sc. (EE) UETL 76

SALMAN FAISAL



SALMAN MAHMOOD

SALMAN YOUNAS

Project Engineer
AETCON
Jeddah
Email: salmanyounas72@yahoo.com
B.Sc(EE), U of Central Punjab 10

SAMAN RASHID

Transmission Engineer
Saudi Electricity
Riyadh
Email: samanrasheed@hotmail.com
MSc Elect. Engg UET Lhr. 2011

SAQIB SHAH

Sr. Electrical Engineer
Rashid Engineering
P.O. Box 4354, Riyadh 11491
Email: shah28083@gmail.com
B.Sc.(EE) UOP 72

SARA FURQAN

Email: sarafurqanabid@gmail.com
B.Sc (EE), UET Lahore 09

SARFRAZ MAHMOOD

Network Planning Engineer
Saudi Telecomm. Company (STC)
STC Headquarter, Mursalat, Riyadh
Email: sarfraz47@hotmail.com
B.Sc. (EE) UETL 74



SARMAD ALI

Electrical Design Engineer
Cepco
Dammam
Email: sarmad.ali45@gmail.com
B.Sc. Electrical (Power) Engineering

Electrical Engineers

**SHAFIQUE AHMED**

Electrical Consultant
NOR Consult Telematics
King Fahd Rd, NG SEC HQ, Dammam
Email: engr.shafiqahmed@gmail.com
BE UET Mehran Jamshoro 91

**SHAFQAT ZIA**

Project Engineer
Al Fanar Co.
Nothern Ring Road b/w Exit 5 & 6, Al-Nafl, Al Fanar E
Email: shafaqat.zia@alfanar.com
B.E. (E), QAUEST 05

**SHAH FAISAL**

Senior Electrical Engineer
Tamimim operation and maintenance company
Yanbu
Email: emgr.faisal277@gmail.com
BE Electrical Engg. SUIT Peshawar 2012

**SHAH NAWAZ KHAN**

Sr. Engr (Maintenance)
Saudi Electric Company SEC-SOA
P.O. Box 616, Abha
Email: abu_saadnawaz@hotmail.com
B.Sc. (EE) UOP 76

**SHAH ZAMAN PANHWAR**

Projects Manager
Al-Sharif Group (ASG)
DAMMAM
Email: shah_szp@yahoo.com
B.E. (EE) MUET 86, MIS CQU 94

**SHAHID MEHBOOB**

Electrical Engineer
SESCO
P.O.Box: 11941, Al-Jubail 31961
Email: engr_786@hotmail.com
B.E. (EE) NED 98

**SHAHID MHMOOD ALVI**

Electrical Engineer
Sadara Chemicals
Jubail
Email: shahid.118@gmail.com
B.Sc. (EE) UETL 95, MBA PIMSAT 04

**SHAHZAD ALI BAIG**

Commissioning Engineer
ABB Service Co. Ltd.
P.O. Box 2873, Al-Khobar 31952
B.E. (EE) NED 94

**SHAKEEL AHMAD**

Project Manager
Cogalex - Alsthom
P.O. Box 87200, Riyadh 11642
B.Sc. (EE) EPUET 71

**SHAMIM ALAM KHAN**

Electrical Engineer
Saudi Telecomm. Company (STC)
Eng. Plng., STC HQ, P.O. Box 87912, Riyadh 11652
Email: sakhn@stc.com.sa
B.Sc. (EE) EPUET 65

**SHAQIF AZAM**

Sr Electrical Engineer
ABV Rock Group Ltd
Riyadh
Email: shaqif_azam@yahoo.com
BE NED Kar 08

**SHARIQ AHMED KHAN**

Project & Planning Engineer
Gulf Consolidated Contractors Co.
Al Rakah Ash Shamaliyah
Email: Shariqahmedkhan94@outlook.com
B.E Comsats Univ. Wah 2018

**SHAUKAT ALI**

Engineer - I
KFUPM
KFUPM Box 1882, Dhahran 31261
Email: ashaukat@kfupm.edu.sa
B.Sc (EE) UOP 75

**SHEIKH MAHMOOD AHMED**

Electrical Engineer
Saudi Electric Company
Jubail
B.Sc. (EE) UETL 91

**SHEIKH QAISAR ABBAS**

Senior Engineer
Al-Suwaidi Co
Jubail
Email: qaisar1472@gmail.com
B-Tech UET Lhr 04, C Eng IET (Engg council UK) 18

**SHOAIB AHMAD**

C.E.O.
M.A.Al-Azzaz Contracting
P.O. Box 31234, Al-Khobar-31952
B.E. (E) NED 74

Electrical Engineers

SIKANDER H. BHATTI

CEO
Energy & Infrastructure
P.O. Box 91357, Jeddah
Email: si@wj-co.com
B.Sc. (EE)

SYED ADNAN MOID

Electrical Engineer
General Electric Company
Riyadh
B.E. (EE) NED 96

SYED ANEEQ ALI BOKHARI

Estimation Engineer
Electrical & Electronics Industries Corp.
PO Box 1684, AL-Khobar 31952
Email: aneeq85@gmail.com
B.S. (EE) USA 07, MS (EE) USA 08

SYED FARASAT ABBAS

Senior Design Engineer
TIEPCO
P.O. Box 2705, Dammam 31461
Email: farasat_70@hotmail.com
B.Sc. (EE) UETL 02

SYED MOHAMMAD NASEEM NAVAID

Electrical Engineer
Dar Al-Handasa Consulting Engineers
P.O. Box 60212, Riyadh 11545
B.E. (EE) NED 80

SYED MUBASHIR UL HAQUE

Network Engineer
Getronics / AGCN
P.O. Box 2645, Riyadh 11461
B.E. (EE) NED 99

SYED NAVED HAIDER

Director Sales & Bus Dev.
Construction Material Valley (CMV)
PO Box # 5129, Dammam-31422
Email: snhj1@yahoo.com
B.E. (EE) NED 91

SYED SHABBIR AHMED

Sector Head
SEC-CRB Saudi Electric Company
PP8, P.O. Box 57, Riyadh 11411
B.Sc. (EE) UETL 80

SIRAJ UR REHMAN

Business Development Manager
Energy Shield
DAMMAM HOUSING (ASKAN)
Email: SIRAJSHAHID@GMAIL.COM
BS Hamdard U 10

SYED AFZAL HUSAIN

Sr. Electrical Engineer
Consulting Engineering Group
P.O. Box 1604, Riyadh 11311
B.E. (E) NED 74

SYED FAHEEM AHMAD

Electrical Engineer
AMAC
Jubail
Email: shaheem64@yahoo.com
B.E. (EE) NED 87

SYED FARAZ AHMED

Research Assistant
KFUPM
PO Box 8611, Dhaharan 31261
Email: faraz107@gmail.com
B.E. (EE) NED 08, MS KFUPM 10

SYED MOHAMMED MURTAZA

Electrical Engineer
GULF CONSULT ARCHITEC & ENGINEERS
AQRABIYA, AL KHOBAR
Email: murtazarizvi93@gmail.com
BSc Multimedia Univ Malaysia 2016

SYED MURSHID PERVEZ

Area Sales Manager
Saudi Transformer Co.
P.O. Box 968, Riyadh 11421
B.E. (EE) NED 82

SYED SARFRAZ ALI

Project Manager
AJEC
PO Box 17918, Riyadh 11494
Email: samedni@hotmail.com
B.E. (EE) UOS 67, MS PW USA 92

SYED SHAHERYAR A SHAH

Head of Electro Mech. Dept.
Al-Rashid Trading & Contracting (RTCC)
P.O. Box 307, Riyadh 11411
B.E. (EE) POU 74

Electrical Engineers

**SYED SHAHID HUSSAIN**

Engineering Specialist
SAUDI ELECTRICITY COMPANY
Building A-2, Floor-14; Garnada, Riyadh
Email: meetshahidhussain@yahoo.com
B.E EE 82, MS EE 93, UETL

**SYED TALHA NADEEM**

Sales Engineer
Green Solutions Trad. & Cont. Co.
Khobar Iskan
Email: syedtalhanadeem@gmail.com
BSc U. of Central Punjab 2016

**SYED TASNEEM HUSAIN**

Senior Design Engineer
ABB Electric Industries Ltd.
P.O. Box 8796, Riyadh 11492
B.Tech. (Hons) NED 86

**SYED UMER MOIZ**

Electrical Engineer
King Saud University
P.O. Box 2454, Riyadh 11451
B.E. (EE) SU 72

SYED ZAFAR WAHAB

Planning Engineer
Saudi Electric Company (ERB)
Dammam
B.Sc. (EE) KU 70

**TAHIR BARLAS**

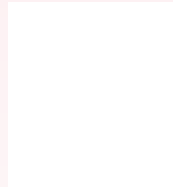
Manager
ATG
Email: tbarlas5sa@gmail.com
B.E. (EE) UWO CAN 05, ME (EE) UWO CAN 07

**TALHA ISHTIAQ**

Site Manager
Silver Star Co. Ltd.
Al Dilam, Al Kharj, Riyadh
Email: talha.electrocad@gmail.com
BSc Electrical Engg. FAST 2016

**TAOUS AZMAT**

Electrical Design Engineer
Saud Consulting Services
Email: taous.azmat@hotmail.com
B.E. Hamdard University 2013

**SYED SHUJAAT KHURSHED**

OHTL Tendering Manager
SSEM Co. Ltd
Al-Rashid Center, Maater Street, Riyadh
Email: shujaatpk@yahoo.com
B.Sc. (EE) NWFP UET 90

**SYED TARIQ MUHAMMAD**

Sales Manager
S&A Abahsain Co. Ltd.
P.O. Box 209, Al-Khobar 31952
Email: syedtar@hotmail.com
B.E. (EE) NED 03

**SYED TOUSEEF AHMAD RIZVI**

Sr Electrical Engineer
Dar-Alhandasah Shair and Partners
P.O. Box: 6310, Makkah 21955
Email: touseefrizvi@yahoo.com
B.Sc. (EE) UETL 98

**SYED WAJID HUSSAIN**

Electrical Engineer
Al-Noble Est. & Contracting
P.O. Box 1237, Al-Khobar 31952
Email: engwajid@yahoo.com
B.E. (EE) NED 92

**SYED ZAHID HASSAN RIZVI**

Protection Engineer - PP4
Saudi Electric Company (COA)
P.O. Box 57, Riyadh 11411
B.Sc. (EE) UETL 86

**TAHIR SAEED MIRZA**

IMC Systems Specialist
Kafou technical Services
Dammam
Email: tahirsmirza@hotmail.com
B.Sc. (EE) UETL 78, M.Sc. (EE) KFUPM 82

**TALHA KHAN**

Automation and electrical engineer
Obeikan
Riyadh
Email: ktalha504@gmail.com
Bachelors in electrical engineering

**TARIQ MUSHTAQ QURESHI**

Senior Engineer
RGCK
Khobar
Email: tmq20@yahoo.com
B.E. (EE) UETL 73

Electrical Engineers



TASADDUQ TAHIR

Procurement Engineer
AES Arabia LTD
PO Box 105689, Riyadh 11656
Email: tasaytahir@hotmail.com
B.Sc. (EE) UAJK 07



UMAIR SHAHID AZIZ

Principal ICT/ELV Engineer
Saudi Consulting Services
Email: uaziz@saudconsult.com
BS Telecom Hajvery Universty Lahore



UMER ATTA I NASEER NIAZI

Sr. Engineer (Process Control) E&PM
SABIC
Khobar
Email: umerniazi@gmail.com
B.Sc Electrical Engineering



USMAN AHMED

Specification Manager
Saint Gobain
Office # 204, Rolaco Bldg, Makkah Rd, Riyadh
Email: usman.ahmed@saint-gobain.com
B.E UET Lahore 2009, MBA Lahore School of Econom



UZAIR MIRZA

Electrical Engineer
ASSYSTEM RADICON
Alkhobar
Email: m.uzair94@gmail.com
Beng.EEE U. of Derby UK 2015, MSc U. OF NOTTINGHAM 2016



WAJAHAT HUSSAIN SIDDIQUI

Senior Electrical Engineer
Noor MOHD Jukdar
P.O. Box 9887, Jeddah 21423
Email: wajahat1946@gmail.com
B.E. (EE) NED 74



WAQAS AHMAD

Care Program Management Head
Nokia Solutions & Networks (NSN)
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: waqasahmad@hotmail.com
BE NUST 98



YASIN KHAN, DR.

Assistant Professor (Elect)
King Saud University, Riyadh
Deptt. Of Elect Engg. KSU, Riyadh
Email: yasink@ksu.edu.sa
B.Sc. (EE) NWFP UET 93, M.Sc. (EE) 97, Ph.D. KU J



ZAFAR IQBAL, PMP

General Manager
Hussain Ali Hussain Co.
Riyadh
Email: zafar@hahest-ksa.com
B.Sc. (EE) UETL 89



ZAFAR SHAMEEM

Senior Project Engineer
Solutions Valley Company - Saudi Electricity Company
Malaz, Riyadh
Email: enr.zafarsaifi@live.com
BE Electrical NEDUET 13



ZAKAULLAH

Electrical Engineer
Saadullah Khan Brothers
Al-Rossais Commercial Center, Riyadh
B.E. (EE) MUET 95



ZAKIR RAZA

Sales Engineer
Al-Nassar Co.
P.O. Box 1246, Riyadh 11431
B.E. (EE) UOT 85



ZAMIR MANZOOR

Vice President
Habib Rafiq (Pvt) Ltd
PO Box 220135, Riyadh 11311
Email: zamirmanzoor@habibrafiq.com
B.Sc. (EE) UETL 84



ZEESHAN SAMI

TEAM LEAD ELECTRICAL (Royal Commission Divi:
Saud Consulting Services
Riyadh
Email: zss84@hotmail.com
B.E., NED Karachi 2006



ZUBAIR AHMED

Senior Engineer
AETCON
P.O. Box 250974, Riyadh 11391
Email: zubairahm@hotmail.com
B.E. (EE) NED 92



ZULFIQAR AHMED BHATTY

Manager S. Centre/Logistics
Digital Natcom Co.
P.O. Box 7190, Riyadh 11462
B.Sc (EE) UETL 83



Electronics Engineers

**ABDUL BASIT**

Telecom Engineer
Nokia AlSaudia
Riyadh
Email: abasit_pk@yahoo.com
B.E NED Univ. Karachi 1990

**AMIR HUSSAIN QURESHI**

Manager IPBB/ISP/Security
Nokia Solutions & Networks
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: amirhq@gmail.com
B.E. (Electronics Eng), GIK 99

**ARIF ISLAM BUTT**

Section Manager
Mitsubishi Electric Saudi Ltd.
P.O. Box 14166, Jeddah 21424
B.E.(Ecs) NED 94

**ARSHAD MOHSEN BHOPALI**

Manager Eastern Region
Basic Electronics Co. Ltd.
P.O.Box 1402, KHOBAR 31952
Email: arshadbhopali1@gmail.com
B.E. (EE) NED 92

**ATIF AMAN**

ICT Engineer
Systra
Riyadh
Email: atifaman@outlook.com
BSc Elect. Engg. Intl. Islamia Uni Isb 2009

**FAISAL JAMAL**

Product Engineer (Smart Metering)
MEMF Electrical Industries Riyadh
New Industrial Area, Riyadh
Email: faisal.jamal@memf.com.sa
BS EE International Islamic Univ. Isl 12, MSEM Superi
Lhr 21

FAZLE RAFAY

Tendering Manager
Hitachi Energy
Riyadh
Email: frafey@yahoo.com
BSc (EE) USA 96

HAFEEZ-UR-REHMAN

Sales Manager
Siemens
P.O. Box 9510, Riyadh 11423
M.Sc. (Ecs) QAU 86

**AHSAN AHMED RANA**

iSeries Tech. Support Engineer
SBM / IBM
P.O. Box 818, Riyadh 11421
Email: arana@stc.com.sa
B.E. (Ecs) NED 78

**AMJAD IQBAL**

I & C Sys Engr.
Petrokemya
P.O. Box 10002, Jubail
B.Sc. (EE) EMU 93

**ARSHAD HUSSAIN**

Instrument Engineer
Riyadh Water Works
P.O. Box 2464, Riyadh 11451
B.E. (Ecs) DCET 69

**ATIF ALI KHAN**

Area Manager
STESA-THALES Co.
P.O. Box 10502, Jubail 31961
Email: khanatifali@yahoo.com
B.E. (EE) NED 96

DEEDAR ALI

Telecom Engineer
Saudi Telecomm. Company (STC)
STC Headquarters, Room 107, Mursalat, Riyadh
Email: dshah@stc.com.sa
B.E. (Ecs) NED 87

**FAISAL NASRULLAH**

Solutions Consultant
Nokia Solutions & Networks (NSN)
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: nasrullah.faisal@nokia.com
BE (Electronics), UETL 00

**FURQAN ALI SIDDIQUI**

Sr. Telecommunication Engr.
Saudi Electricity Co.
P.O. Box - 5190, Dammam
Email: furqan_as@yahoo.com
B.E. (EE) NED 99, M.S (Tel) NED 05

**HAMZAH ASHRAF**

Business Support Manager
PCS Instruments and Controls
Riyadh
Email: Hamzah.Ashraf@yahoo.com
B.Sc. Engr, SSUET, 99

Electronics Engineers

**IFTIKHAR AHMED HAJI**

District Engineer
Saudi Telecom Co. (STC)
P.O. Box 220169, Riyadh 11311
Email: ihaji.c@stc.com.sa
B.E. (Ecs) Osmania 93

**IMRAN ASHRAF**

Sr. Engr. Network Security
Etihad Etisalat (Mobily)
P.O. Box 9979, Riyadh 11423
Email: imranrhl@yahoo.com
B.Sc. (EE) SSUET 02

**IQBAL AHMED SIDDIQUI**

Telecommunication Engineer
Royal Saudi Air Defence Forces
P.O. Box 16431, Riyadh 11464
B.E. (Ecs) NED 79

**IRFANUDDIN AHMED**

Sales & Marketing Engineer
Model Time Technical Systems
P.O. Box 9270, Jeddah 21413
Email: irfanuddinahmed@gmail.com
B.S. (EE) EMU Turkey 01, MBA PAF-KAIET 04

**JAVED M. AHSANI**

General Manager
Four Corners International
P.O. Box 62877, Riyadh 11595
B.E. (Ecs) KU 77

**KHALID NADEEM**

Support Engineer
Al-Faisaliah Group
P.O. Box 122209, Jeddah 21332
B.E. (Ecs) DCET 87

**MAJID LATIF**

Group General Manager
Arabic Computer Systems Ltd.
P.O. Box 2645, Riyadh 11461
B.E. (Ecs) DCET 75

MANZOOR AHMAD

Project Engr.
SIEMENS
Khobar
Email: manzuur.ahmad@gmail.com
B.Sc. (EE) GIKI 03

**IJAZ AKHTAR**

Project Manager II
STC Solutions
STC HQ, Mursalat, Riyadh
Email: ijazak@hotmail.com
BE (EE) NED 96

**IMRAN SHAIKH**

System Engineer
AMPS
Al-Khobar
Email: smimran@gmx.com
B.E. (EE) SSUET 09

**IRFAN ALI SIDDIQUI**

Service Manager
Saleh & Abdul Aziz Abahasan Co. Ltd.
P.O.Box 209, Khobar
Email: irfan_alisiddiqui@yahoo.com
B.E. (EE) NED 02, MBA Abacus 11

**ISHTIAQUE AHMAD KHAN**

Managing Engineer
Siemens
Siemens Office Riyadh
Email: ishtiaqueak@gmail.com
B.E(Electronics)

**KAMRAN ASIF ASLAM**

Mktg & Tech Support Manager
Beit Al-Etisalat
P.O. Box 90209, Riyadh 11613
Email: kaaslam@hotmail.com
B.E. (Ecs) SSUET 99

**M. FARAZ UDDIN QURESHI**

Senior Network & Security Engineer
DETECON Al-saudia Co. Ltd
P.O. Box 1038, DQ, Riyadh 11431
Email: qureshim@ARABSAT.com
B.Sc. (EE) SSUET 01

**MANSOOR JAMIL**

Instrument Engineer
JANA Chemical Industries
P.O. Box 10661, Jubail 31961
Email: mansoor_10609@yahoo.com
B.E. (Electronics) DCET 96

**MILHAN TARIQ AZIZ**

Lead Engineer
Al-Jubail Petro Chemical Co. (KEMYA)
PO Box 10084, Jubail 31961
Email: milhantariq@hotmail.com
B.Sc. (EE) UETL 93



Electronics Engineers



MOHAMMAD HANIF

Quality Control Manager
A.B.B Electrical Industries Co. Ltd.
P.O. Box 251, Riyadh 11383
B.E. (Ecs) NED 83



MOHAMMAD IMRAN

Communication Engineer
SIEMENS
Al-Raja Tower, Khobar
Email: aleyimran@yahoo.com
B.E. (EE) NED 02, MBA PIMSAT 05



MOHAMMAD IRFAN

Project Engineer
Al-Jazirah Engineers & Consultants (AJEC)
P.O. Box 616, SEC-SOA Project Deptt Abha
Email: irfan1963@hotmail.com
B.Sc. (EE) DCET 89, MBA (Finan) IBA PU



MOHAMMAD KHALID SYED

Testing Engineer
Al-Tuwairqi Group
Al-Khobar
Email: khalid.syed@altuwairqi.com
B.E. (EE) NED 93



MOHAMMAD ZEESHAN GHOURI

Security Project Systems
Maaden Aluminium
Ras Al Khair
Email: ghourim@maaden.com.sa
B.E. (EE) NED 96



MUHAMMAD AHMED

Head of Vertical Sales
Siemens
P.O.Box 719, Alkhobar
Email: ahmed77@gmail.com
BE GIKI 00



MUHAMMAD DAWOOD

Sr. Electrical Engineer
Arail construction and Industrial Co. Ltd.
Riyadh
Email: muhammaddawood1398@gmail.com
BSc Electrical GCU Faisalabad 2016



MUHAMMAD IMRAN

Chief Engineer
Saudi Ministry of Defence
1st Floor, 45-Saud Alkabeer Bin Abdul Aziz Rd, Riyadh
BE, NED 93



MOHAMMAD ILYAS MUGHAL

Instrument & Control Sys Engr.
Petrokemya
P.O. Box 10002, Jubail
Email: mughalmi@yahoo.com
B.E. (E) UET AJK 89



MOHAMMAD IQBAL TAREEN

Computer Network Engineer
King Saud University Computer Center
P.O. Box 2454, Riyadh 11451
Email: mitareen@ksu.edu.sa
B.E. (Ecs) NED 86



MOHAMMAD IRFAN AHMAD

Projects Engr Transmission
MOBILY
P.O. Box:5663, Jeddah :21432,KSA
Email: i.ahmed@mobily.com.sa
B.E. (EE), MS (Comm) UK



MOHAMMAD NISAR ASAAD

Senior Instrument Engineer
S.W.C.C.
P.O. Box 8264, Jubail 31951
Email: nisarasaad@hotmail.com
B.E. (Ecs) DCET75, M.Sc. (Avn) CIT UK 79



MOSHTAQ AHMED CHEEMA

Unit Engineer Scada System
Saudi Electric Company
P.O. Box 57 ECC Building, Riyadh 11411
B.E. (Ecs) NED 79



MUHAMMAD BILAL SHAHID

Electronics Engineer
WASHMI GROUP
Khobar
Email: mbilalshahid@gmail.com
B.S. (EE) IIUI 08



MUHAMMAD IMMAD ANSARI

Sales Accounts Manager
AA Turki Corporation
Dammam
Email: engr.iansari@gmail.com
B.Sc. (EE) SSUET 08



MUHAMMAD KHALID

Production & Testing Engineer
International Electrical Products Company
Dammam Industrial Area
Email: khalid.syed@tiepc.com
BE NED 93

Electronics Engineers



MUHAMMAD SHAKIB MALIK

AMO FO Engineer
MobiCom
Al Maifa , Alyarmouk
Email: shakib.malik@engineer.com
B.E. Usman Institute of Technology 2007



MUHAMMAD YASIR ANJUM

Automation Solutions Engineer
The Integrated Control Mitsubishi Electric
Riyadh
Email: myan786@gmail.com
BE Hamdard Uni 09



MUSAB NAEEM

Electronics & Instrumentation Engineer
Sinsina Corner Company
Makkah St, Jubail
Email: engr.musab63@gmail.com
BE Dawood U. of Engg & Tech 13



NABEEL AHMAD SIDDIQUE

Access Network Instal. Engr.
Ericsson AB
P.O. Box 6121, Riyadh 11442
Email: nasonline@gmail.com
B.Sc. (EE) NEU 03



NAZIR AHMAD UJAN

Distribution Engr.
Suadi Electricity Co. (SEC)
PO Box 221671, Riyadh 11311
Email: nazeerujjan@hotmail.com
B.E. (EE) NED 82



NUSRAT PERVEZ

General Manager Medical Div.
Modern Scientific & Electronics Corp.
P.O. Box 1938, Riyadh 11441
B.E. (Ecs) DCET 80



OMER AKHTAR

Engineer
SIEMENS
PO Box 719, Khobar 31952
Email: omer.akhtar1@gmail.com
B.E. (EE) SSUET 07



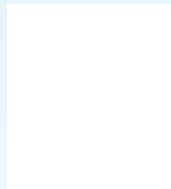
RIAZ AHMED

Field Service Engineer
Philips Healthcare Saudi Arabia Ltd
P.O. Box. 9844, Riyadh 11423
Email: riazahmed111@gmail.com
B.E. (EE) DECT 93



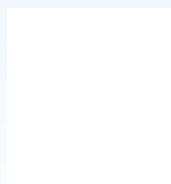
MUHAMMAD SHEHZAD

Operations Manager
Quality Core Contracting Services
Industrial Services Division, Khobar
Email: ind.services@qccs-sa.com
B.E. (EE) SSUET 02



MURAD ALI SHAH

LAN Administrator
Tecnicas Reunidas
Email: Mashah@trsa.es
B-Tech (Hon) Sarhad U. of sScience & Info Tech Peshawar



MUZAFFAR AHMED

Project Engineer
SIEMENS
P.O.Box 719 Al-Khobar 31952
Email: muzaffar.ahmed@siemens.com
B.E. (EE) NED 01



NAYER AZAM

Senior Project Manager
Ebtikar Technology
P.O. Box 52908 , Riyadh 11 573
Email: nayer.azam@gmail.com
B.E. (ECS) NED 78

NIDA ADIL

Email: rqnida1@hotmail.com
BS Sir Syed University 10



OBAID HABIB

PMO Manager
Zain Saudi Arabia
Riyadh
Email: obaidhabib@gmail.com
BE (EE) GIKI 00, MBA UTNETH 05



OMER SAEED

Tech Sales Engr.
SESCO
PO Box 3298, Khobar 31952
Email: omi683@hotmail.com
B.E. (EE) SSUET 01, MS (Telcom) UB UK 05

RIAZ HUSSAIN

Transmission Specialist
Saudi Telecomm. Company (STC)
P.O. Box 87912, Riyadh 11652
Email: riaz_47@yahoo.com
B.Sc. (Ecs) LU 73



Electronics Engineers

**SALMAN MEHMOOD**

Support Engineer
YOKOGAWA
P.O. Box 3422, Dammam 31471
Email: s_mehmood@yahoo.com
B.E. (Ecs) GIK 98

**SALMAN SAEED**

Engineering Manager
"ENGIE - Tihama PowerGeneration"
Khobar
Email: salman.saeed@tihamaapower.com
Masters

**SHAHID WAQAS CHAUDHRY**

General Manager
Yokogawa Saudi Arabia Company
P. O. Box 3368, Dhahran TechnoValley, Al-Khobar 315
Email: shahid.waqas@sa.yokogawa.com
B.S. (EE) GIKI 99

**SHAIKH ASRAR AHMED**

CEO
Ather Technology Pvt LTD.
P.O. Box 87021, Riyadh 11642
Email: shaikh@ather-telecomsolutions.com
B.E. (Ecs) NED 80

**SYED ADNAN ALI**

Lead Aix System Administrator
Riyad Bank
Olaya Oprs. Centre, P.O. Box 22622, Riyadh 11416
B.Sc. (Ecs) UOS 81

**SYED AFFAN ALI HASHMI**

Senior Technical Officer
Arabian Elect Transmission Line Const Co.
PO Box 172, Damma 31411
Email: affan@hotmail.com
BE SSUET 99, MS Energy GER 05, MS Comp SSUET

**SYED AMMAR IQBAL AHMED**

Wireless Engineer
Huawei Technologies
Riyadh
Email: syedammari@yahoo.com
BE, NED Karachi 2010, M.Sc IT, U of Stuttgart, Germany

**SYED ASHFAQUE MAZHAR**

Executive Manager
Computer & Engineering Specialists Co.
P.O. Box 14918, Jeddah 21434
B.E. (Ecs) MUET 79

SYED KHURSIED ABBAS

Instrument & Control Engin
Royal Commission For Yanbu Project
P.O. Box 30144, Yenbu
B.E. (Ecs) NED 80

**SYED MESUM RAZA**

Sales Engineer
SIEMENS
Al-Khobar
Email: syed.raza@sa.abb.com
B.E. (EE) DECT 05

**SYED NAZEEF AKHTER**

Elect. Estimator Engr.
Elseif Engineering Contracting Est.
P.O. Box 2774, Riyadh 11461
B.E. (Ecs) NED 92

**SYED SHAKEEL AHMED**

Electrical Site Engineer
Saud Consultant
Riyadh
Email: shakeelahmed2000pk@yahoo.com
B.E. (EE) SSUET 01

**TASADDUQ HUSSAIN GILANI**

Senior Engineer
SIEMENS
P.O. Box 27503, Riyadh 11423
B.Sc. (EE) UCET 93, M.Sc (Ecs) UET 97

**TASNEEM AHMED**

Area Manager - Eastern Region
Salem Agencies & Servoces Co. (SAS) - System Engg
P.O. Box 3033, Khobar 31952
B.E. (Ecs) DCET 87

**WAHEED AKHTER**

Project Manager
Saudi Technical Engineering System Ass.
PP9, P.O. Box 5463, Riyadh 11422
B.E. (Ecs) NED 89

**ZAHID KHAN**

Electrical Shift Engineer
Saudi Electric Company SEC-SOA
P.O. Box 616, Abha
B.E. (EE) NED 88

Electronics Engineers



ZAHIR SAEED SHEIKH

Radio Technical Expert
Nokia Solutions & Networks (NSN)
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: zahir.sheikh@nokia.com
BE (Electronics), GIK 04



ZEESHAN YAQOOB

Electronics Engineer
Al - Qahtani Pipe Coating Industries
Al Khalidian Al shamaliah, Dammam
Email: Zeeshany88@gmail.com
B.E Iqra University 2011



ZIA UREHMAN

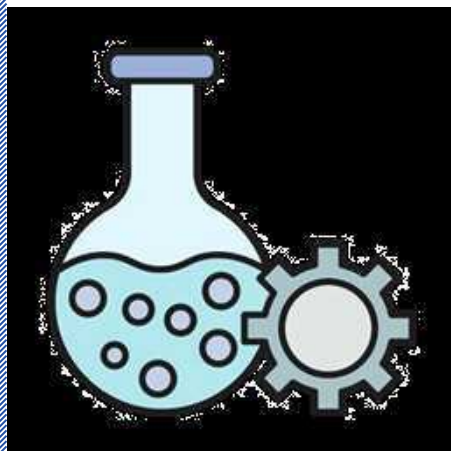
Electronics Engineer
AETCON
Khobar
Email: Zia_6188@yahoo.com
B.Sc. (EE) NWFP UET 08



ZOHAIB SHAHZAD

Instrumentation & Control Engineer
JACOBS Zate
Jubail
Email: engr.zohaibshahzad786@gmail.com
B.Sc COMSATS 11

What if your presence was the very thing that made the world's reactions possible?



In our daily drive for professional excellence, we often forget the most efficient law of nature: the catalyst. A catalyst does not struggle to move; it enables movement. It lowers the energy required for change, sparking transformation in others without losing a single part of itself.

When we apply this to our routine lives, we stop just moving forward and start multiplying. To help a neighbour grow or a colleague succeed is not a subtraction of your time—it is an addition to our collective momentum.

True impact is not found in moving alone, but in becoming the force that reduces friction for everyone else. Be the element that simplifies the complex and clears the path. Do not just exist; be the catalyst that ensures every life you touch moves forward faster than you found



Mechanical Engineers



ABDUL GHAFUR RIZVI

Principal Engineer
Olayan Descon Industrial Co.
PO Box 10108, Jubail 31961
Email: agrizvi@olayandescon.com
B.Sc. (ME) UETL 04



ABDUL QADIR AKBANI

Engg. & Facility Develp. Mgr.
Al-Qahtani Pipe Coating Industries
P.O. Box 1980, Dammam 31441
Email: abdul.qadir@aqpci.net
B.E. (ME) NED 71



ABDUL WAHEED

Project Engineer
Saudi Electric Company (ERB)
2-210 W, SEC-HQ, P.O. Box 5190, Dammam 31422
Email: aamian@se.com.sa
B.Sc. (ME) UETL 74



ABDULSATTAR SAGHIR AHMAD

Engineer Sr. Planning
Gulf Consolidated Contractors Co.
Automoto Building (B) Al-Rakah, P.O.Box. 895, Dammam
Email: asattar0514@gmail.com
B-Tech. (Hons), Preston U Kohat 2017



ADEEL ALI KHAN

Sales Engineer
Byrne Equipment Rental
POBox 30770 Al Khobar 3195
Email: adeela@byrnerental.com
BE NUST - PNEC 2016



ADIL BIN RAUF

Staff Process Engineer
Petrokemya
P.O. Box 10002, Jubail
Email: mt1ar@petrokemya.sabic.com
B.E. (ME) NED 87



ADNAN SHAHEEN ABBASI

Mechanical Engineer
Al-Qahtani Pipe Coating Industries
P.O.Box 1980, Dammam 31441
Email: adnan.shaheenn@gmail.com
BS HI-TEC U. Taxilla 14

AHAD AHMAD

Planning Engineer
Sadara
B.E UET Lahore 2007



ABDUL MAJID

Project Manager
Mustang-HDP
King Abdulla St., Khobar
Email: engr.majid@gmail.com
B.Sc. (ME) UETL 03



ABDUL SATTAR



ABDUL WAJID

Lubricant Technical Advisor
Aljomaih & Shell Lubricating Oil Company
Shell Office 202, AlJomaih Building, King Khalid Stree
Email: mianabdulwajid@gmail.com
BE MUET, Jamshoro 09



ABU ZEESHAN BARI

Assistant Professor
Taibah University
Madinah
Email: bari_zeeshan@yahoo.com
B.E. Mech 01, ME. NED UET 06, PhD Uni. of Salford



ADEEL FEROZ

Sr. Principal Mech. Engr.
Mcdermott Arabia
Al Khobar
Email: adeel_feroz2006@yahoo.com
BE (Mech) NED UET 06



ADNAN AHMAD MUHAMMAD SADDIQUE

Mechanical engineer
Siemens Energy
Dammam
Email: adnan546@gmail.com
BSc Mechanical Engineering



AGHA ZIA-UL-HASSAH

Principal Liaison Engineer
NESPAC
P.O. Box 50344, Riyadh 11523
B.Sc. (ME) UOP 80



AHMAD JAMAL

Assistant Professor
Royal Commission for Jubail and Yanbu
109 Lulu 18, Apt 10, Jubail
Email: jamalah@ucj.edu.sa
B.Sc UET Lahore 98, PhD McGill University, Canada

Mechanical Engineers

**AHMAD RAZA KHAN RANA**

Execution Engineer
Olayan Descon Industrial Company
Yanbu
Email: ahmad.raza141@gmail.com
B.Sc. (ME) UETL 09

**AHMED RAZA**

Repair Technology Engineer
GE Manufacturing Technology Center (GEMTEC)
Dammam 2nd Industrial City. P.O.Box 191 Dammam 3
Email: engraraza@yahoo.com
BE UET Lahore 02

**AHSAN ALI LOONA**

Head of Mech. Engg. Dept.
Al Fouzan Trading Co.
P.O. Box 8300, Riyadh
B.Sc. (ME) UETL 80

**AHTSHAM AHMED**

Engineering Section Manager
Mitsubishi Electric Saudi Ltd.
P.O. Box 3682, Makkah
B.E. (ME) NED 93

**ALI HASSAN**

Welding QC Inspector
MEFCO
Jubail
Email: alihasan31746@gmail.com
Bachelor of Science in Mechanical Engineering from U

**ALI KHURSHEED SIDDIQUI**

Lecturer
Al Imam Mohammad Ibn Saud Islamic University
Sheikh Abdullah Al Makhdub Street, Al Falah, Exit 7
Email: aksiddiqui@imamu.edu.sa
BE NED 03, ME NED 06

**ALI ZIA**

Project Engineer
Sinsina Corner Company
Makkah St, P.O.Box 2674, Jubail 31951
Email: ali.zia@outlook.com
B.Sc UET Lahore 13

**ALLAH BAKHSH NIZAMI**

Service Director
General Electric Company
GE Manufacturing Technology Center (GEMTEC), Dar
Saudi Arabia
Email: engrnizami@gmail.com
B.Sc. (ME) UETL 08, MBA UMT Lhr 22

**AMIR IRSHAD**

Quality Engineer
Dar Al-Riyadh
PO Box 20753, Al-Khobar 31952
B.Sc. (ME) NECIET 03

**AMJAD ALI SHAH**

Site Engineer
Olayan Descon Industries Co.
Jubail
Email: amjad_ali_shah@hotmail.com
B.Sc. (ME) UET KPK 96

**AMMAR MIR MOHAMMAD**

Production Manager
Abdul Aziz Ibrahim Al-Oufy, Cont. and Trading
Al Khobar
Email: marketing@masadur.com
BE Hons. Uni. Of Derby 2021

**ANWAR KHALIL SHEIKH DR.**

Professor of Mechanical Eng.
King Fahd Univ. of Petroleum & Minerals
KFUPM# 284, Dhahran 31261
Email: anwarks@kfupm.edu.sa
B.Sc.(ME) UETL 70, M.E WSU 75, Ph.D MTU 78

**ANWAR SAAED KHAN**

General Manager(Projects)
FAB Consulting Engineers
Mohammad Ali Jinnah Rd, Riyadh
Email: ask52@yahoo.com
B.E. (ME) NED 75

**ANWAR SHAUKAT ANSARI**

General Manager
GSTIC-Gulf Sahar Trad. & Ind. Co
PO Box 5266. 31422-Dammam
Email: anwar.ansari@gsticgroup.com
B.S.(ME) MTIH GER 71, PhD Greenlake USA 13

**ASAD DANISH SIDDIQUI**

STATIC EQUIPMENT ENGINEER
ALBAYRONI FERTILIZER SABIC
DAKHIL MEHDOOD, ALJUBAIL, KSA
Email: engr.asad364@gmail.com
BE NED Karachi 02

**ASAD UR REHMAN**

Construction Engineer
Sinsina Corner Company
Makkah St, P.O.Box 2674, Jubail 31951
Email: asad.ur.rehman17@gmail.com
BS Inst of Space Tech Isb 17



Mechanical Engineers

**ASGHAR ALI**

Mechanical Engineer
International Contracting Resources Co.
Thuqbah Alkhobar
Email: asghar.asgharali@gmail.com
B.Sc UET Taxila 06

**ASIF ZAFAR**

Sales & Marketing Engineer
ISCOSA (Siemens - Westinghouse)
P.O. Box 752, Abha
B.E. (ME) NED 94, MBA IBA 97

**AUSAF AHMAD**

Senior Sales Engineer
Assan Mohammad Hassan Al Mahroos Trading Co
Al-Khobar
Email: ausaf1993@hotmail.com
B.E (ME) Nanjing U of Aeronautics and Astro 2015

**AYAZ MEHMOOD ANJUM**

Procurement Officer
Al Fanar Technical Services
Riyadh
Email: ayaz.sardarali@alfanar.com
B.Tech 06 (ME)

**AZMAT MUJTUBA**

MECHANICAL MANAGER
Al-Ittefaq Steel Products Co.
P.O. Box 7600, Dammam 31472
B.E. (ME) NED 95

FAHEEM RAZZAK

Project Coordinator
SAMREF
Yanbu
B.E UET Lahore 2008

**FAISAL MALIK**

Marketing Manager
Carrier Saudi Arabia - Arabian Air Conditioning Co
P.O. Box 9784, Riyadh 11423
Email: faisal.malik@carrierSaudi.com
B.Sc. (ME) UETL 97, MBA Al-Khair U 97

**FAIZAN NAEEM**

Assistant Operator
Shandong Electric Power & Construction Corp SEPCO
Ras Al-Khair Power Plant, Alkhafji
Email: office@sepcoc3.com
B.E Nanjing U. of Aeronautics and Astro 2015

**ASIF MAQSOOD SHEIKH**

Maintenance & Service Manager
Agricultural Development Co.
P.O. Box 5244, Riyadh 11411
Email: asifmaqsood@hotmail.com
B.Sc. (ME) UETL 91

**ATIQ WALIULLAH SIDDIQUI**

Assistant Professor
Imam Abdulrahman Bin Faisal University
Email: awsiddiqui@iau.edu.sa
MS KFUPM 01, PhD Memorial U of Newfoundland, C

**AYAZ ALI KHAN**

Lead Engineer
SABIC
Email: engineerss_ned@hotmail.com
BE (Mech) NED UET 02

**AZFAR ISHAQ**

Mechanical Engineer
Saudconsult
Sulaimaniyah, Riyadh
Email: azfar.ishaq.7@gmail.com
BSc, GIKI 14

BADAR JAMAL

Project Manager
Olayan Descon
Jubail
B.E UET Lahore 2004

FAISAL MAHMUD

Rotating Equipment Specialist Engineer
Tecnicas Reunidas
AlKhobar
Email: finahmud75@yahoo.com
BSc UET Lahore 1997

**FAISAL SHAHZAD MEER**

QA/QC Manager
Gulf Consolidated Contractors
P.O.Box 895, Dammam 31421
Email: fmeer@gccksa.com
B.Sc UET Lahore 01

**FAKHAR ZAMAN**

Supply chain consultant
Solventure
Ghent- Belgium
Email: eng.fakhar@gmail.com
BSc UETL 14, MS Industrial Management 17

Mechanical Engineers

**FAREED AHMED**

Area Sales Manager
Arabian Air Conditioning Co. Carrier
P.O. Box 9784, Riyadh 11423
Email: fareed.ahmed@carriersaudi.com
B.E. (ME) NED 90

**FARHAT ALI**

Safety Officer
Effex Biotech Arabia
Al Khobar
Email: farhatali890@gmail.com
DAE Mech. Tech 08

**FAYYAZ MUDDASSIR MUBEEN**

DESALINATION DIVISIONAL MANAGER
DESALINATION ENGINEERING SERVICES (DES)
603 DAR AL AMIRI BUILDING, CORNISH ROAD, S
U.A.E
Email: fayyazmubeen@hotmail.com
B.E. (ME) NED 77, MS (ME) KFUPM 81, PGD ITALY

**GHULAM SARWAR**

HVAC Engineer
Rashid Engineering
P.O. Box 4354, Riyadh 11491
B.Sc. (ME) UOP 74

**HABIBULLAH TALPUR**

Unit Engineer
Saudi Electric Company, PP4
P.O. Box 57, Riyadh 11411
B.E. (ME) SU 73

HAFIZ MUHAMMAD USMAN

Planning Team Lead
Gulf Consolidated Contractors Co.
6719 Awf bin Qasit Street, Raka Janubiya, Khobar
Email: usmanstar@gmail.com
B.E UET Lahore 2004

**HAMID MAHMOOD SHAH**

Sr. Procurement Officer
Hilal Hussein Al-Tuwairqi
P.O. Box 2705, Dammam 31432
B.Sc. (ME) UETT 2000

**HAROON SALEEM QAZI**

RTD Analyst II
Schlumberger
P.O. Box 2836, Al-Khobar 31952
Email: haroon_sq@hotmail.com
B.E. (ME) NED 03, M.S. (TEL) NPUL 05

**FARHAN HAMID**

Lecturer
Jubail Industrial College Royal Commission
Dept of Mechancial Engg Jubail Industrial College
Email: fh_farhan@yahoo.com
B.Sc UET Lahore 96, M.Sc KFUPM 00

**FAYYAZ AHMED KHAN**

MMS Specialist
Zuhair Fayeze Partnership
P.O. Box 9486, Riyadh 11413
B.S. (ME) DIT 79

**GHULAM HUSSAIN KHAN**

Engineer
King Saud University
P.O. Box 800, Riyadh 11421
B.Sc. (ME) UETL 71

GOHAR NAEEM SHAH

Mechanical Design Engineer
Tecnicas Reunidas
Alkhobar
Email: gnaeems@gmail.com
B.E GIKI 2005

**HAFEEZ UR REHMAN**

Deputy General Manager
Saadullah Khan Brothers
Al-Rossais Commercial Center, Riyadh
Email: dgm@skb-ksa.com
B.Sc. (ME) UETL 74

**HAFIZ MUHAMMAD WASEEM**

Sales Engineer
Mitsubishi Electric Saudi Ltd.
P.O. Box 14166, Jeddah 21424
B.Sc. (ME) UOP 90

**HAMMAD IFTIKHAR MUSTAFA**

Inspection Team Lead / Lead Auditor
RICI Co. Ltd.
P.O.Box 31172, Al-Khobar 31952
Email: hammadifi@gmail.com
B.Sc (ME), Near East U, Cyprus 08

**HASSAN RASHEED**

Projects Manager - HVAC Building Efficiency
Johnson Controls
Riyadh
Email: hassan.rasheed@jci.com
BE UET Taxila 04

Mechanical Engineers

**HUMAYUN AKHTAR**

Proposal Manager
JGC Gulf International
Email: humayun_akhtar@yahoo.com
MSE, U of Michigan, Ann Arbor USA 88

**HUZAIFA WASEEM MALIK**

Planning Engr.
Tamimi Industrial Services
Jubail
Email: huzaifawm8@gmail.com
BS Mech. Capital Uni. Science & tech. 21

IJAZ BASHIR

Director Project Management
Zamil Metal Works
Jeddah
B.E UET Lahore 1999

**INAM MUHAMMAD**

Lecturer Mech. Engg. Dept.
KFUPM
P.O. Box 1252, Dhahran 31261
Email: inamgm@kfupm.edu.sa
B.E. (ME) NED 80, M.S KFUPM 84

**IRFAN AHMED KHAN**

Sr. Technical Professional
Olayan Descon Engineering Co.
PO 10108, 31961 Al-Jubail Industrial City
Email: khanirfan1942@gmail.com
B.Sc. ME) UETL 99, M.Sc. US GER 99

**IRFAN ALI KHAN**

Chief Engineer
Institute of Public Administration
P.O. Box 205, Riyadh 11141
Email: khani@ipa.edu.sa
B.Sc. (ME) AMU Aligarh 77, M.S (ME) AMU Aligarh

**IRSHAD RASOOL**

Mechanical Engineer
Sinsina Corner Company
Makkah St, P.O.Box 2674, Jubail 31951
Email: irshad.rasool@alsinsina.com
B.Sc UET Lahore 07

**ISLAM MUSHEER KHAN**

General Manager
Al-Aswad International
P.O. Box 2153, Dammam 31451
Email: islam.m.khan@gmail.com
B.E. (ME) NED 75

**ITLAQUE AHMAD KHAN**

Sr. Mechanical Inspector
M.A. Al-Azzaz Inspection & Testing Svcs
P.O.Box: 31172, Khobar-31952
Email: itlaque@gmail.com
B.Sc. (ME) UETL 79

**JAMIL A. WARSI**

Project Director
Al-Zaid Engineering Consultants
P.O. Box 20179, Riyadh 11455
B.E. (M) NED 74

JAVERIA ASAD

HVAC design Engineer
Email: jav_azhar@hotmail.com
NED Kar 03

**JAWAID IQBAL**

Area Sales Manager
Arabian Air Conditioning Co. (Carrier)
P.O. BOX 11728, Jeddah- 21463
B.E. (M) NED 79

**JAWWAD UR RAHMAN**

Estimation Engineer
CAMERON NATCO AL-RUSHAID
PO Box 11179, Jubail 31961
Email: jawwadurrahman@yahoo.com
B.Sc. (ME) UETL 06

**KASHIF AZHER**

PhD Student
King Fahad University of Petroleum & Minerals
Dhahran
Email: kashifazher92@gmail.com
BE (Mech) NED UETL 16, MSc NTUST 20

**KASHIF ZIA**

General Manager
Petromen Corp.
P.O. Box - 7720, Dammam - 31472
Email: kashiftotal@hotmail.com
B.E. (ME) NED 93, MS (CS) NED 98, MBA IBM 98

**KHALID ALI**

Material Purchasing Engr.
Saudi Electric Company SEC-SOA
P.O. Box 2012, Abha
B.Sc. (ME) UETE 86

Mechanical Engineers



KHALID LATIF

Project Manager
SABIC
P.O. Box 10002, Jubail 31961
B.Sc. (ME) UETL 76



KHAWAR IQBAL KHAN

Sr. Mechanical Engineer
FAKIEH Group
P.O. Box 7797, Makkah
Email: khawar51@yahoo.com
B.Sc. (ME) UETL 75



LIAQAT ALI SAHI

Unit Supervisor
Saudi Aramco
P.O. Box 968, Dhahran 31311
Email: liaqat.sahi@aramco.com
B.Sc (ME) UETL 79



MAHMOOD BUTT NAZIR

Senior Mechanical Engineer
Gulf Consolidated Co.
Dammam
Email: mhmdbutt@yahoo.com
B.Sc. (ME) UETL 85



MIAN GHULAM HAIDER

Mechanical (Field Engineer)
Sin Sina Corner Co.
PO Box 1050, Jubail 31951, Jubail
Email: mianhaider@gmail.com
B.Sc. (ME) GIKIES 10



MIR ZAMAN KHAN

Chief Engineer(Mechanical)
Zuhair Fayeze Partnership
P.O. Box. 5445, Jeddah 21422
Email: khan_mir55@hotmail.com
B.Sc. (ME) UP 76



MOHAMMAD ANWAR DAWOOD MEMON

S.Quality Assurance Specialist
Royal Saudi Naval Forces
P.O. Box 22463, Riyadh 11495
Email: admemon@hotmail.com
B.E. (M) NED 71

MOHAMMAD ARSHED JAVAID

Material Purchasing Engr.
Saudi Electric Company SEC-SOA
P.O. Box 616, Abha
Email: malikarshed@hotmail.com
B.Sc. (ME) UETL 84



KHALID MASOOD BARLAS

Mechanical Engineer
Saleh Abal Khail Consulting Engrs.
P.O. Box 4296, Riyadh 11491
B.E. (ME) SU 69



KHURRAM NADEEM

National Sales Sr. Director
AlKhorayef Lubricants Company
Alkhubar
Email: khurramnadeem369@yahoo.co.uk
B.E NED Univ. Karachi 1995, MBA Preston Univ. Kar.



M. IMRAN ASGHAR

Section Head (Planning/Proj)
National Industrial Gases Co. (GAS)
P.O. Box 10110, Jubail 31961
Email: imran1312@hotmail.com
B.E. (ME) UETL 90, CCE 2000, CIMSC 2005, CIA 20



MIAN ABDUL REHMAN SARWAR

Senior Engr. Production
Al-Tuwairiqi(National Steel Co.)
P.O. Box 3869, Al-Khubar 31952
Email: mars_uetian@hotmail.com
B.Sc. (ME) UETL 04



MIAN SHAMIM AHMAD

Sr. Mech Engineer
Rashid Engineering
P.O. Box 4354, Riyadh 11491
Email: mianshamim@hotmail.com
B.Sc. (ME) UOP 74



MOHAMMAD ABBAS ANSARI

Field Engineer (Mechanical)
MARAFIQ
MARAFIQ, Potable Water Facility Tareeq-113, Jubail
B.Sc. (ME) UETL 93



MOHAMMAD ARSHAD

Material Engineer
Grain Silo And Flour Mill Organization
P.O. Box 3402, Riyadh 11471
Email: arshad@gsfmo.gov.sa
B.E. (ME) NED 80



MOHAMMAD ASGHAR MUGHAL

Staff Engineer, Maintenance
PETROKEMIA
P.O. Box 10002, Jubail 31961
B.E. (ME) NED 79



Mechanical Engineers

**MOHAMMAD ASHRAF ZIA**

Project Engineer
ABWA Co. Ltd.
P.O. Box 10460, Riyadh 11433
Email: ashrafzia76@hotmail.com
B.Sc. (ME) UETL 92

**MOHAMMAD FEROZE ALAM**

Mechanical/Piping Engineer - I
Saudi Consolidated Engineering Co. (SCEC)
P.O. Box 1713, Al-Khobar 31952
B.E (ME) NED 84

**MOHAMMAD ISHAQUE QAZI**

Mechanical Engineer
Int'l Airports Projects, KKIA
P.O. Box 12531, Riyadh 11483
B.Sc. (ME) GCET 62

**MOHAMMAD JUNAID YOUNUS**

Field Operations Supervisor
Al - Qahtani Pipe Coating Industries
Al Khalidiah Al shamaliah, Dammam
Email: junaid.y@msn.com
B.E Nanjing U. of Aeronautics & Astro 2016

**MOHAMMAD SAAD ARSHAD**

Regional Sales Mgr. MEA and Pak
Circor/YBA Kanoo
Rakah, Khobar
Email: saad.arshad86@yahoo.com
BSc Mechatronics Uni. Of Wah 2009

**MOHAMMAD SAGHIR**

Executive Manager
Alqan Contracting Est.
P.O. Box 221314, Riyadh
Email: saghir@ea.net.pk
B.Sc. (ME) UC 87, M.Sc Brunel U 00

**MOHAMMAD TARIQ**

Sr. Reliability Engr.
Petrokemya
P.O. Box 10002, Jubail
Email: tariqstaa@yahoo.com
B.Sc. (ME) UETL 85

MOHAMMAD TARIQ FAQUIH

Operation Engineer
Saudi Electric Company (CRB)
Power Plant No 9, P.O. Box 57, Riyadh 11411
B.E. (ME) NED 76

**MOHAMMAD FAHEEM WAJID**

Construction Manager
Abdullah AlNemshan Contr. Co.
Jubail
Email: fahimwajid@yahoo.com
B.Sc (ME) UETL 97

**MOHAMMAD IRSHAD**

Mechanical Engineer
SABCO
P.O.Box 10011, Jubail,
Email: irshadm@rcjubail.gov.sa
B.E. (ME) NED 69, ME Chicago 80

**MOHAMMAD JAMSHAI MEER**

Suprv. Proj. Coord. Unit
Saudi Aramco
P.O. Box 13761, Dhahran
Email: mohammad.meer@aramco.com
B.Sc. (ME) UETL 80

MOHAMMAD MUDABBIR QURESHI

Service Sales Engineer
Carrier Saudi Service Company
Salah ud Din Ayubi rd, Riyadh
Email: m_mudabbir@hotmail.com
BE Mech, UETL 03, MBA BU Malaysia 09

**MOHAMMAD SAEED AKHTAR**

Manager Contracts & Procurment
Imad Company
P.O. Box 677, Al-Khobar 31952
Email: saeedakhtar@gmail.com
B.Sc (ME) UETL 74, M.Sc. AIT 77

**MOHAMMAD SULAIMAN LALA**

Mechanical Engineer
Saline Water Conversion Corporation
P.O. Box 5968, Riyadh 11432
B.E (ME) NED 71

**MOHAMMAD TARIQ**

Mechanical Engineer
Dar Al-Majd Consulting Engineers
P.O. Box 60212, Riyadh 11545
B.Sc. (ME) MMU 80

**MOHAMMAD YAQUB**

Lecturer
KFUPM
KFUPM Box 767, Dhahran 31261
Email: myrahim@kfupm.edu.sa
B.E. (ME) 84, M.S KFUPM 90

Mechanical Engineers



MOHAMMAD YOUNAS

Lecturer ME Dept.
KFUPM
P.O. Box 196, Dhahran 31261
Email: myounasa@kfupm.edu.sa
B.Sc. (ME) UETL 78, M.S KFUPM 84



MOHAMMAD ZAFAR SAGHIR

Senior Engineer
Saudi Electric Company (SEC-COA)
P.O. Box 57, Riyadh 11411
Email: zafar_saghir@hotmail.com
B.E. (ME) MUET 80



MOHAMMAD ZAHID SOHAIL

National Sales Manager
Arabian Auto Agency
P.O. Box 2111, DAMMAM-31451
Email: mzsohail@yahoo.com
B.Sc. (ME) UETL 78



MOHAMMED SAAD NAEEM

Inspection Engineer
Bureau Veritas
Al-Khobar
Email: saad.naeem79@gmail.com
BE (Mech) NED UET 14



MOHD EI HAB UR RAHMAN KHAN

Assistant Operator
Shandong Electric Power and Construction Corporation
SEPCO III Office, Ras Al-Khair Power Plant, Alkhafji
Email: office@sepco3.com
B.E Nanjing U. of Aeronautics & Astro 2015



MOHIUDDIN AHMED

Lecturer
KFUPM
P.O. Box 102, Dhahran 31261
Email: mohiudin@kfupm.edu.sa
B.Sc. (ME) UETL 80, MS KFUPM 84



MOHSIN ALI ZAIN

PMO Advisor
Saudi telecom
Email: mohsinaz@gmail.com
"Bsc Mechanical - UET LAHORE MS Engineering Mar
UET LAHORE A"



MOHSIN MUNIR SHAIKH

Sr. Planning Engr.
Assystem Radicon
Khobar Shumaliyah
Email: mohsin_ShaiKh88@hotmail.com
Industrial Engg. UET LHR 2012



MUDASAR ALI

Planning Engineer
Olayan Descon Industries Co. Ltd.
Jubail
Email: mudasar_aquarian@hotmail.com
B.E. (ME) NED 06



MUDASSAR AHMED

Lead Engr - BID
DAR International Engineering Consultancy
Dammam
Email: mudassar_bhinder@yahoo.com
BSc Mechanical Engg. UET Lhr. 2002



MUHAMMAD AASIM

MEP Engineer
Blue Star Company
SFMC Project Ministry
SFMC Project Ministry of Interior Riyadh KSA
Email: muhammadaasim785@gmail.com
BE Mech NED UET 1



MUHAMMAD ABDUS SALAM

Senior Resource Manager
Schulumburger
Al Khobar
Email: engrsalam@gmail.com
BSc Mechanical Engg. UET Lhr. 2004



MUHAMMAD ABID KHALID

Bucket Specialist IV
GE Vernova
Dammam
Email: khalidabid@gmail.com
BE (MECH) NED UET 08



MUHAMMAD ADEEL

QA/QC
GEMTEC
Madinal-ul Amal, Alkhobar
Email: mu.adeel@outlook.com
B.Sc GIKI Topi Pak 15



MUHAMMAD ADIL BIN SALEEM

unemployed
Jubail
Email: madilbsaleem02@gmail.com
Bachelors in Mechanical Engineering



MUHAMMAD ADNAN AHMED

Piping Engineer
Wood Group
Al-Khobar
Email: adnan.nedian@gmail.com
B.E. (ME) NED 03

Mechanical Engineers

**MUHAMMAD AKHTAR**

Technical Sales Manager
Thyssenkrupp Saudi Arabia
P.O.Box 1454 Riyadh 11431
Email: akhtarabc@yahoo.com
B.E., UETL 92, M.Sc., UETT 03

**MUHAMMAD ASIF BAIG**

Country Sales Manager
AJASCO
Khobar Mall, Al Khobar
Email: asifbaig466@hotmail.com
BE (Mech) NED UET 93

**MUHAMMAD ASSAD AHMED**

Staff Project Engr.
SABIC Argi-Nutrients
Jubail
Email: assad.muhammad@gmail.com
BE (Mech) NED UET 2000

**MUHAMMAD BILAL**

Planning Engr.
Tamimi Industrial Services
Jubail
Email: awanzogdel@gmail.com
BS Mech. UET Taxila 17

MUHAMMAD HASSAN KAMAL

Piping Stress Analysis Engr,
JGC Gulf International Ltd
P.O. Box 2257 Al-Khobar 31952
Email: hkamal68@gmail.com
B.E. (ME) NUST 05

**MUHAMMAD IJAZ ALLAH WASAYA**

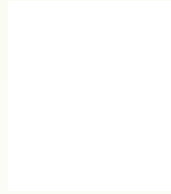
Procurement Quality Control Supervisor (PQCS)
Awad Saad Binzafrah Contracting Riyadh KSA
Tabuk
Email: mech.engr06@gmail.com
BSc Mechanical Engineering

**MUHAMMAD JAVED**

Team Leader (Corrosion & Inspection)
Saudi Aramco Jubail Refinery (SASREF)
Jubail
Email: javedintegrity@gmail.com
BSc Mechanical Engineering

MUHAMMAD NASRULLAH

QAQC MANAGER CORPORATE
OLAYAN DESCON IND. CO. LTD.
JUBAIL
Email: mnasrullah@olayandescon.com
B.Sc UET Lahore 99

**MUHAMMAD ALI JAVED**

Lead Inspection Engineer
SABIC AGRI NUTRIENTS
Jubail
Email: engr.alijaved@gmail.com
BE NED UET 03

**MUHAMMAD ASIM BAIG**

CEO
Meridian Quality Management
Off. No. 1195, Bldg 574, Road 31, Area Alhamriya, Bal
Email: ceo@meqmp.net
B.E. (ME) NED 95

**MUHAMMAD ATTA ULLAH KHA**

Planning Engr.
Tamimi Industrial Services
Jubail
Email: mattaullahkhan1997@gmail.com
ME Mech. Nust 19

**MUHAMMAD FIAZ**

NDT/Welding Specialist
Sadara Chemical Company
Jubail
Email: mfiaz7@yahoo.com
BE UET Lahore 96, ASNT NDT Lvl 3 #190850

**MUHAMMAD HASSAN KAMAL**

Piping Engineer
JGC Gulf International
P.O. Box 2257 Al-Khobar 31952
Email: hkamal68@gmail.com
BE (ME) NUST 05

**MUHAMMAD IRFAN RIAZ**

Assistant Engineer
Tamimi Industrial Services
Jubail
BSc Mech. Comsat Isl 23

**MUHAMMAD MUNIR BAIG**

Sr. Mechanical Engineer
Aljazira Engg & Consultants
PO Box 17919, Riyadh 11494
Email: munir.baig9@gmail.com
B.Sc. (ME) UEL 71

**MUHAMMAD NOMAN SHAHZAD**

Assistant Project Engr.
Tamimi Industrial Services
BSc Mech. Comsat Sahiwal 20

Mechanical Engineers



MUHAMMAD PERVAIZ HAMAYOUN

Commercial Manager
Olayan Descon Engg Co.
P.O. Box 10108, Jubail Industrial City 31961
Email: mphamayoun@olayandescon.com
B.Sc. (ME) UETL 96, MBA LUMS 00



MUHAMMAD RAZA CHEEMA

Design Engineer
Zamil Industrial
Alkhobar
Email: mrcheema@live.com
BSc UET 2009, MSc UET 2014



MUHAMMAD TAHIR

Senior Trainer
Dairy & Food Polytechnic
P.O.Box 52, Alkharj 11492
Email: tahir_eng88@yahoo.com
Btech ME, Indus Uni 11



NADEEM UZ ZAFAR KHAN

Project Engineer
SABIC
Jubail
Email: khannz@sabic.com
B.E. (ME) NED 91



NAVEED IQBAL QURESHI

Mechanical Engineer
Ministry of Defense and Aviation
P.O. Box 58303, Riyadh 11594
B.Sc. (ME) UETL 84



OSMAN JAVED NAGRA

CEO
AIRFLOW HVAC CO
Dhahran
Email: xs2nagra@gmail.com
Bachelor



PIR ABDUL MAJID

Sales Engineer
Arabian Auto Agency
PO Box 2111, Dammam 31451
Email: pir999111@gmail.com
B.Sc. (EE) NWFP UET 04



RAFEH NAQEEB

Project and Sales Engineer
Abahsain Cope S.A. Co. Ltd
Dammam
Email: rafeh_naqeeb@live.com
BE (Mech) NED UET 18



MUHAMMAD RAMZAN

Senior Reliability Engineer
Tasnee
Jubail Industrial City
Email: engrramzan@gmail.com
BSc Mechanical Engg. UET Lhr. 2004



MUHAMMAD SHAHID NADEEM SABIR

Project Engineer
RCC
Abha
Email: engrmadeemsabir@gmail.com
M.Sc. Design and Manufacturing Engineering



MUHAMMAD TALHA

Planning Engineer
Sinsina Corner Company
Yanbu
Email: talha0321@hotmail.com
B.Sc UET Lahore 16



NAJIB REHMAN

Head Mechancial Dept.
Zuhair Fayez Partnership
P.O. Box 5445, Jeddah 21422
Email: najibrehman@yahoo.com
B.E. (ME) NED 80



NISHAT AHMAD

Manager Business Development
Sin Sina Corner Co.
PO Box 1050, Jubail 31951, Jubail
Email: nishat.ahmad@alsinsina.com
B.Sc. (ME) UETL 99, MBA IUBWP 05



PERVAIZ AKBAR

General Manager - Plant Services
Abdullah A. Al-Barrak & Sons Co.
Jubail
Email: pakbar@abis.com.sa
B.Sc. (ME) UETL, 75



QAISAR ABBAS

Design Engineer III
FLUOR ARABIA LIMITED
Email: qaisar.ali@fluor.com
B.E UET Taxila 2003



RAFIQ AHMED LAGRIAL

Jubail Area Manager
Ground Engineering Contractors
P.O. Box 1053, Al-Khobar 31952
Email: gec@zajil.net
B.E. (Mech) NED 94



Mechanical Engineers



RAHEEL AQEEL QURESHI

Area Manager
XYLEM
Riyadh, KSA
Email: raheelaqeel@gmail.com
B.Sc. (ME) UETL 07



RAJA RIZWAN IMTIAZ

Sr. Reliability Engineer
Petrokemya
P.O. Box 10002, Jubail
Email: imtiazrr@petrokemya.sabic.com
B.Sc. (ME) NWFP UET 88



RANA MUHAMMAD ZAHID

General manager
Etch20-Environmental Equipment Company
Khobar
Email: zahis_med@yahoo.com
BE (Mech) NED UETL 07



RAO ABID IKHTIAR

Project Engineer
Petrofac Saudi Arabia Ltd.
Al Khobar 31952,
Email: rabidrao@yahoo.co.uk
B.Sc. (ME) UETL 02



REHAN NOOR KHAN

Lecturer
Imam AbdulRahman Bin Faisal University
PO Box 2397, Dammam 31451
Email: rehannoor@gmail.com
BSc UETL 78, MSc KFUPM 82



REHMAT ALI

Executive Manager
Hajaris Genral Contracting Est.
Al-Baha Trading Building, Jiddah Street, Jubail
Email: rali@hajaris.com
B.Tech (ME) UETL 99



RIZWAN KHAN

Mechanical Engineer
Banderyah Commercial Center
Alkhobar
Email: rizwankhan170@gmail.com
B.E NED 14



RIZWAN ZAFAR SIDDIQUI

Production Engineer
Al-Tuwairqi Group
PO Box 1323, Damamm
Email: rzs_786@hotmail.com
B.Sc. (ME) UETL 05



ROHAIL HUSSAIN KHILJI

Rotating Equipment Specialist
Saudi Aramco
Riyadh Refinery Residential Compound
Email: rohail.khilji@gmail.com
BSc Mechanical Engg. UET Lhr. 2004



S. ABID HUSSAIN

Product & System Supp. Manager
Arabian Airconditioning Co. (Carrier)
P.O. Box 690, Riyadh 31932
Email: abid.hussain@carriersaudi.com
B.E. (ME) NED 89



SAAD ABDUL JAWAD

Project Services Engineer
Akon International
PO Box 69753 Riyadh 11557, Saudi Arabia.
Email: saadabduljawad@outlook.com
B.Sc UET Lhr 16, M.Sc KFUPM 20



SAIF UR REHMAN

Sales Manager CCR
Arabian Air Conditioning Co. (Carrier)
P.O. Box 9784, Riyadh 11423
Email: saif.rehman@carriersaudi.com
B.E. (ME) NED 90, MBA (Mar) PUK 97



SAIF UR REHMAN MAAN

TECHNICAL ADVISOR
Saudi Aramco
DHAHRAN
Email: saif1434@gmail.com
BE (Mech) NED UET 02



SAIFULLAH SALEEM

CEO
Powerex International (Pvt) Ltd.
P.O. Box 221481, Riyadh 11311
Email: powerexksa@hotmail.com
B.Sc. (ME) UETL 91



SAJID ALI

Assistant Professor
Imam Abdulrahman Bin Faisal University (IAU)
Raka
Email: sakzada@iau.edu.sa
M.Sc UET 13, PhD KFUPM 18

SAJID BALOCH

Equipment Maint. Div Head
Olayan Descon
Jubail
B.E UET Lahore 2004

Mechanical Engineers



SALMAN AHMAD

Sr. Planning Engr
Tamimi Industrial Services
Jubail
Email: engr.salman.ahmed@outlook.com
BE Mech. Uni. Of Sargodah18



SALMAN ZAFAR

Sr. Mech. Engr.
Dammam
Email: mech.engr.4221@gmail.com
BE Mech Air Univ. Isl. 14



SAQIB NAZIR

Production Engineer
Olayan Descon Engineering Co. Jubail,KSA
P.O Box 10108,Jubail 31961KSA
Email: saqibnazir21@hotmail.com
B.Sc. (ME) NWFP UET03



SARFRAZ HUSSAIN SELANI

Rechnical & Operation Manager
Kanoo Tank Services
Jubail
Email: sarfarazselani@yahoo.com
BE Mech NED UET 91, ME Uni. Mi



SARFRAZ AHMAD MALIK

Maint. Trg. Coordinator
PETROKEMMYA
P.O. Box 10002, Jubail 31961
B.Sc. (ME) UETL 79



SHABBIR AHMED SIDDIQUI

Senior Mechanical Engineer
Saudconsult
P.O. Box 2341, Riyadh 11451
Email: shabbir_ahmed74@hotmail.com
B.E. (M) NED 75



SHAHEER AZAM

Technical Coordinator
MAAZ
B.Sc UET Lahore 16



SHAHER YAR

Project Control Engineer
Sinsina Corner Company
Makkah St, Jubail 35514
Email: ucetbzu81@gmail.com
B.Sc Bahaiddin Zakariya U. Multan 15



SHAHID MASOOD

Mechanical Designer
Al-Hugayet Est
c/o Aramco, So. Area Design Service Dept., Abqaiq
Email: shahid_masood@hotmail.com
B.Sc. (ME) UETL 94



SHAHZAD AHMAD NAEEM

Vendor Inspection
AMO & Partner Engg. Co.
Khobar
Email: sanaeem@gmail.com
B.Sc. (ME) UETL 02



SHAKOOR ALAM

Operations Manager
Ground Engineering Contractors
P.O. Box 2870, Al-Khobar 31952
Email: gec@zajil.net
B.Sc. (ME) UETL 89



SHAMEEM AHMAD

Sr. Power Engineer
Saline Water Conversion Corporation
P.O. Box 8068, Jubail 31951
Email: shamim91@yahoo.com
B.E. (M) NED 77



SHAMIM UDDIN

Chief Mechanical Engineer
Rashid Engineering
P.O. Box 4354, Riyadh 11491
Email: shamim_uddin@yahoo.com
B.E. (ME) NED 72



SHAMS-UR-REHMAN

Technical Manager
Hydro Power Support Est.
P.O. Box 86658 Dammam 31452
Email: engrshamss@hotmail.com
B.Sc. (ME) NWFP UET 99



SHAUKAT PERVAIZ

Division Manager Mech.
Dunya Establishment.
P.O. Box 2483, Riyadh 11451
Email: shaukat36@hotmail.com
B.Sc. (ME) UETL 89



SUHAIB AHMED KHAN

Senior Maintenance Engineer
Al Kuhaimi Metal Industries Ltd.
Prince Sultan St #15, Alkhobar
Email: suhaib_khan24@yahoo.com
B.E Nanjing U. of Aeronautics & Astro 2016



Mechanical Engineers

**SYED AHMED MAHMOOD**

Senior Mechanical Engineer
Arabian BEMCO
Jeddah
B.E. (ME) NED 75

**SYED ARSHAD RAZA**

Assistant Professor
Imam Abdulrahman Bin Faisal University
Rakah Alshimaliah
Email: saraza@iau.edu.sa
BE NED Kar 97, MSc ICS KFUPM 01, PhD MIS Edith 02

**SYED EHTESHAM AZHAR**

Service Manager
Demag cranes & components
P.O.Box 31235 Al Khobar
Email: ehtesham35@gmail.com
B.Sc. (ME) UETL 97

**SYED KHALID UMER**

PROJECT DIRECTOR
ALMARASIM GATE CONT&TRAD
P.O. Box 16558, Riyadh 11471
Email: khalidumer2002@yahoo.com
B.E. (ME) NED 76

**SYED MANZAR HASNAIN**

Senior Mechanical Engineer
Dar Al-Majd Consulting Engineers
P.O. Box 60212, Riyadh 11545
B.E. (ME) NED 78

**SYED MUHAMMAD ALI**

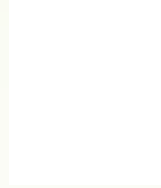
Lead Drilling Engineer
Saudi Aramco
Abqaiq
BE (ME) NED 05, MBA IOBM 13, PgD NED 25

**SYED NASIR UDDIN**

Technical Support Manager
Gulf Elevators and Escalators Co Ltd
Riyadh
B.E. (ME) Mehran UET Hyderabad 95

**SYED SAJID HUSSAIN**

Mechanical Engineer
Saudi Oger
P.O. Box 1938, Riyadh 11441
B.E.(ME) NED 85

**SYED ALI ABID**

Sales Engineer
Arabian Air Conditioning Co.
P.O. Box 9784, Riyadh 11423
B.E. (ME) BUET Khuzdar 98

**SYED ASIM ATHAR**

Project Engineer
Jana Chemical Industries, Jubail
Jubail Ind City 31961,
Email: a_athar@hotmail.com
B.Sc. (ME) UETL 1993

**SYED KAFIL AHMED HASHMI**

Superintendent Transportation
Saudi Cement Com.
P.O. Box 3394, Dammam 31471
Email: kafil_hashmi@hotmail.com
B.E. (ME), NED 74

**SYED KHURRAM AHMED**

Lead Project Engineer
Saudi Aramco
Hayi AlJohra Al Jubail City
Email: syed.ahmad31@aramco.com
B.E. (ME) NED 00

**SYED MOHAMMAD ZUBAIR**

Professor, ME Dept.
KFUPM
P.O. Box 1474, Dhahran 31261
Email: smzubair@kfupm.edu.sa
B.Sc. (ME) UETL 78, M.E KFUPM 80, Ph.D GT 85

**SYED MUHAMMAD PERVEZ**

HVAC Engineer (Design)
Saudi Consulting Services
Malaz, Riyadh, KSA
Email: engr_smp@yahoo.ca
B.E. (ME) NED 98

**SYED SAFDAR RAZA NAQVI**

MESC Engineer (Mechanical)
Saline Water Conv. Corp. (SWCC)
P.O. Box 60889, Riyadh 11555
Email: swccnaqvi@hotmail.com
B.E. (ME) NED 83

**SYED SHAHANSHAH HUSSAIN**

Contract Management Specialist
China National Petroleum Corporation
Email: hussain-bukhari@hotmail.com
B.Sc Swinburne U. of Technology Australia 12

Mechanical Engineers

SYED WALIULLAH HUSAINI

Procurement Manager
Arabian Bemco
P.O. Box 3143, Jeddah 21471
B.E.(ME) NED 72

**SYED ZIKRUR REHMAN**

Research Assistant
King Saud University
P.O. Box 800, Riyadh 11421
Email: szrehman@ksu.edu.sa
B.E.(ME) NED 83, M.E UOD 88

**TAHIR RASHID KHAN**

Mechanical Enginner
Eastern Petrochemical Co.
P.O. Box 10035, Jubail 31961
B.Sc (ME) UETL 78

**TAHSEEN AHMED QAZI**

Production Manager
META Switchgear Co
P.O.Box 355988, Riyadh-11383
Email: tahseenqazi@gmail.com
BE Mech NED 92, MS Env NED 04

**TARIQ JAVED**

General Manager B2B Sales
Petromin Corporation
Jeddah
Email: tjaved@petromin.com
B.Sc. (ME) UETTaxila 03, MBA UoT Canada

**UMER AHSAN**

Mechanical Inspection Engr.
Al-Azzaz
P.O.BOX 31172 KHOBAR 31952
Email: umar@maaz.com.sa
B.E. (ME) UETL 10

**USAMA BIN AHMED**

Senior Schedule Controller
JGC Gulf International Pvt Ltd
Al Khobar
Email: engr.usama@hotmail.com
BE NED Kar 08

**USMAN AHMAD**

Production Manager
M/S Al-Shahrani Factory/MOTS
P.O. Box 8620, Riyadh 11632
Email: usman@mots.com.sa
B.Sc. (ME) UETL 07

**USMAN WAHEED ASLAM**

Associate Consultant
StretgicGears Management Consulting
KFUPM Box 557 Dhahran 31261
Email: usmanwaheed98@gmail.com
BS KFUPM, Dhahran 20

**WALEED AFZAL**

Sr. Piping Engineer
China Petroleum Engineering and Construction Copora
(CPECC)
Riyadh
Email: waleedbinafzal@gmail.com
B.Sc. Mechanical Engineering

**WAMIQ AL-HUSSAINI**

Inspector
RICI-MAAZ
BE PNEC-NUST 17

WAQAR AZEEM

Project Control Specialist
Fluor Arabia Limited, Jubail
B.E UET Lahore 2007

**WARIS ALI**

Estimation Engineer
Sinsina Corner Co.
PO Box 1050, Jubail 31951
B.Sc. (ME) UETL 05

**YASIR IRSHAD**

Engineer
Olayan Descon Industrial Company Ltd.
P.O. Box. 10108, Jubail 31961
Email: nust_yasir@hotmail.com
B.E. (ME) NUST 06

**YASIR MAZHAR**

Sr. Executive Engineer
S&A Abahsain Co. Ltd.
P.O. Box 11766, Jubail
Email: yasir_mazhar@yahoo.com
B.E. (ME) NED 94

**ZAFAR AHMED TALPUR**

President
Al-Hamrani - Fuchs Petroleum Ltd.
P.O. Box 7103, Jeddah 21462
Email: ztalpur@fuchs.com.sa
B.Sc. (ME) UETL 66

Mechanical Engineers

**ZAHEER AHMED**

Manager Marketing
HAJARIS Gen Cont
PO Box 101018, Jubail City, 31961
Email: zaheer@hajarais.com
B.Sc. (ME) RFU 81, M.Sc. (ME) RFU 83

**ZAHEER UDDIN AHMAD**

Director
Saudi Plastic Factory
P.O. Box 759, Riyadh 11421
B.Sc (ME) UETL 76

**ZAIN UL ABIDEEN IMRAN**

QA/QC Mechanical Inspector
Meridian Quality Management Professionals
Khobar Shumaliya, Khobar
Email: zainimran2244@gmail.com
BSc Mechanical Engg. NED UET 2022

**ZAMAN TALIB**

Mechanical Engineer
Ulaish, Riyadh
Riyadh
Email: zamantalib31@gmail.com
B.Sc Mech Comsats Sahiwal 19

**ZEESHAN ALI**

SENIOR ENGINEER
AL-JAZIRAH ENGINEERING CONSULTANTS
B.Sc UET Taxila 06

**ZUBAIR AKHTAR**

Senior Mechanical Engineer
SWCC
P.O. Box 5968, Riyadh 11432
B.E. (ME) NED 76

**ZUBAIR UR REHMAN**

Sr. Heavy Lift Engineer
Saudi Aramco
Email: zubair_w821@hotmail.com
BE (Mech) NED UETL 05, MEM KFUPM Dhahran 21

**ZULFIQAR AHMED KHAN**

National Parts Manager
ROLACO Automotive
Dammam
Email: szak_khan@hotmail.com
B.Sc. (ME) UETL 91, MBA Preston U 98



Metallurgy Engineers

ABDUL RAHEEM MEMON

Sr. Procurement QA/QC Supervisor
ARKAD Engg & Construction Co.
Alkhobar, Dammam
Email: abdulraheem_44@yahoo.com
BE, Mehran UET, Jamshoro 07

ATEEQ UR REHMAN KAILANI

Executive Manager
Paradise Import Export Company
P.O. Box 220702, Riyadh 11311
Email: kailani@hotmail.com
B.Sc. (MET) UETL 86

DAUD TAHIR

NDT INSPECTOR
RICI MAAZ
DAMMAM
B.Sc UET Lahore 13

FAZAL-UR-REHMAN AWAN

Staff Scientist
Sabic Research & Technology
P.O. Box 11669, Jubail 31961
B.E. (MET) NED 83, Ph.D (MET) IC UK 94, MBA IB

KHURRAM SHAHZAD

QA/QC Manager
Gulf Consolidated Contractors Co
Rakkah Dammam 31421
Email: khurram0723@gmail.com
B.Sc. (MET) ICET PU 99

MUHAMMAD HASNAIN JAMIL

Asst Manager
V-Line Saudi Arabia Ltd.
Jubail
Email: hasnain@v-line.com
B.Sc. (MET) GIKI 07

MUHAMMAD SALMAN

Production Engineer EAF
Altuwairqi group
Al Khobar shumaliya
Email: salmanbutt84@gmail.com
B.Sc U. of Punjab Lhr 08

SAKANDAR HAYAAT

Sr Project Engineer
Titanium & Steel Mfg Company
Khobar
B.Sc. (MET) ICET UP 05

ABDUL RAZZAQ

Manager Refractories
Al-Tuwarqi National Steel Dammam
Industrial Area 2
B.Sc. (MET) UETL 88

AZIZ ULLAH KHAN

Branch Manager
Arab Inspection Company
P.O. Box 3306 Dammam 31471
Email: aziz_inspection@yahoo.com
B.E. (MET) NED 78

FAWWAD ALI BHATTI

Area Manager
Petromin
PO Box 1323, Dammam
Email: fawwad.bhatti@petromin.com
B.E. (MET) DCET 04, ME (MET) NED 09

HASEEB AHMED

Sr. QA/QC Engr.
Olayan Descon Industrial Company Ltd.
P.O. Box. 10108, Jubail 31961
Email: haseebahm@gmail.com
B.Sc. (MET) UETL 07

KHURRAM SHAHZAD

Manager QA/QC
GCC-Gulf Consolidated Contractors Company
PO. 895 -Dammam-31421
Email: khurram0723@gmail.com
B.Sc Inst Of chemical Engg. Lhr 99, TQM Inst Of chem
Lhr 04

MUHAMMAD NAEEM

Production Engineer
Al-tuwairqi Group of Companies
P O Box 2705 Dammam 31461
Email: mnbasra@yahoo.com
B.E Metallurgy, Dawood College 05

SADAQAT ALI

Lecturer
Imam Abdulrahman Bin Faisal University (IAU)
Rakah
Email: sadali@iau.edu.sa
MS Univ of Punjab 12

SYED FAHEEM AHMAD ZAIDI

QA/QC Engineer
RICI MAAZ
Email: faheem.ahmed@maaz.com.sa
BE UET Lahore 07

Metallurgy Engineers



SYED M. JAMIL-UL-HAQUE

Researcher
SABIC
PO Box 1169, Jubail 31961
Email: jamilsh@sabic.com
B.E. (MET) NED 78



TAJAMMAL HUSSAIN

Assistant Manager (Shift)
National Steel Co.
P.O. Box 7922, Dammam 31472
B.Sc. (MET) PU 94



TARIQ MEHMOOD

Senior Researcher (RP)
SABIC (Research & Technology)
PO Box 11669, Jubail City
Email: mehmoottq@sabic.com
B.E. (MET) NED 79



ZAFAR IQBAL

Production engineer EAF
Altuwairqi group Arab steel
Al Khobar shumalia
Email: zafar35met@gmail.com
B.Sc Chemical Engg U. of Punjab 09

Prompt Engineering

Cheat Sheet

Are you using AI but finding yourself frustrated with generic or off-target results? If you aren't getting the output you need, the missing link isn't the technology—it's the prompt.

Getting the best out of AI is a unique blend of art and science; it requires the logical structure to guide the machine's "brain" and the creative nuance to articulate exactly what you want.

To turn AI from a basic chatbot into a high-level professional tool, you have to move beyond just "talking" to it and start engineering your requests.

The Prompt Engineering Cheat sheet

Goal	Keyword / Phrase	What it does
Context	"Act as a..."	Assigns a specific persona (e.g., Senior Marketer) to set the expertise level.
Precision	"Strictly avoid..."	Sets negative constraints to filter out fluff or unwanted topics.
Structure	"Tabular format"	Organizes data into rows and columns for instant clarity.
Reasoning	"Step-by-step"	Forces the AI to show its logic, leading to more accurate results.
Style	"Use a [Tone]"	Defines the vibe (e.g., 'Professional yet witty' or 'Clinical')
Refinement	"Ask me questions"	Tells the AI to interview you to gather missing details

Engineers from Other disciplines

**ABDUL AZIZ SAQIB**

Sr. Staff Telecom. Advisor
Royal Saudi Air Force
P.O. Box 59742, Riyadh 11535
B.E. (Aero) NED 77, M.A.(Economics) KU PK

**ABSAR AHMED BHATTI**

Environmental Manager
Awad Saad Bin Zafrah Co
Tabuk
Email: absar634@gmail.com
Masters in Environmental Engineering

**AHMAR SHAFI**

Director Telecomm. Dept.
KFUPM
KFUPM
Email: ahmar@kfupm.edu.sa
B.E. (EE) NED 97, MS KFUPM 99

**AKBAR ALI**

Project & Turnaround Engineer
YASREF, Yanbu
Email: akbar.nus@gmail.com
B.E. NED 06, M.Sc. NU SPR 09

**BILAL WAHEED ASLAM**

Consultant
Elixir Management Consulting
KFUPM Box 557 Dhahran 31261
Email: bilal.w@elixir.com.sa
BS KFUPM, Dhahran 15

**FARHAN AHMED**

Email: farhan_1232@hotmail.com
B.E. Petroleum, NED 13

**HAFIZ IMDADULLAH**

Expediting Engineer
Snamprogetti Saudi Arabia
AL-HUGAYET TOWER, AL-KHOBAR 31952
Email: hafiz.engineer@hotmail.com
B.Sc. (Petr) UETL 07

**HUZAIFA FOUAD FARUQUI**

Application Engineer & Dilip Specialist
Saudi NAPESCO
Badiyah, Dammam
BE Petroleum NED UET 19

**ABID ALI**

Senior RF Optimization Engineer
Saudi Networker Services
Nuzha District, Riyadh
Email: abidaliuet@gmail.com
b. Sc. Telecommunication, UET KPK 2008

**AHMAD NAEEM**

Costing & Planning Engr.
Sinsina Corner Co.
PO Box 1050, Jubail 31951
Email: ahmad.naeem@gmail.com
B.Sc. (Mechatronics) UETL 04

**AHMED TAHIR**

Planning Engineer Jr.
GCC-Gulf Consolidated Contractors Company
GCC COMPP Office, Abqaiq
Email: ahmed.tahir.mughal@hotmail.com
B.Sc UET Lahore 19

**ANWAR-UL-ISLAM**

System Analyst
Specialized by STC
Riyadh, KSA
Email: anwar.zahoor@stcsc.sa
MSc (Comp Sc) 2001

**FAHAD MAHBOOB**

Technical Support Manager
PELCO
Riyadh
Email: eng_fahad_mahboob@hotmail.com
B.E. (ES Opt Comm) GIKI 02

**FAROOQ SAEED**

Associate Professor and Renewable Energy Consultant
Imam Abdulrahman bin Faisal University
2942 basher Ibn Burd St., Al Olaya, Khobar, 34447-725
Email: fsaeed@iau.edu.sa
MS U of Illinois-USA, PhD U. of Illinois-USA

**HAROON HAIDER KHAN**

Manager Business Dev
Alsanad Co. Ltd
PO Box 1834, Al-Khobar 31952
B.E. (Mechatronics) NUST 02

**IFTIKHAR ALI**

Telecom Engr
Saudi Consulting Services
Email: iffi.ali.pak@gmail.com
BE Telecom, Air Univ, ISB 09

Engineers from Other disciplines

**IFTIKHAR HUSSAIN SABIR**

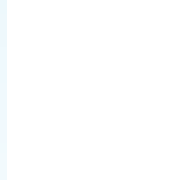
Technical Services Consultant
Special Environmental Projects (SEP)
Al Shiblan Tower, 5th Floor, King Fahd Road, Al Khob
Email: sabiriftikhar@hotmail.com
B.Sc Eng U of Agriculture Faisalabad 81, M.Sc., Ph.D I
U of Natural Sc 2001

**IFTIKHAR NADEEM**

Advisor, Information Tech.
KFUPM
P.O. Box 531, Dhahran 31261
Email: ifti@kfupm.edu.sa
M.Sc. (Sys E) KFUPM 92

**IMRAN KHAN MALIK**

Planning Engineer
Olayandescon
Jubail
B.E. (Ind.E)) MUET Jam 03

**IQRA MESHAL CHAUDARY**

Potable Water Distribution Engineer
Surbana Jurong Pvt Ltd. Riyadh
Riyadh
Email: chaudhryiqra981@gmail.com
PGD Environmental Engg. UET Lhr. 2012

**KAHEEL AMEEN KHAWAJA, DR.**

Production Engineer
Turky Trading & Contracting Ltd.
P.O. Box 31269, Al-Khobar 31952
Email: kafeel.khawaja@talk21.com
B.E. KCL 97, M.Sc KCL 98, PhD 05

**KHURRAM MURAD**

Cybersecurity Expert
Specialized by STC
Riyadh
Email: khurramjaral@gmail.com
B.Sc. (SE) UET Taxila, 03

**KHURRAM SHEHZAD**

Sr. Geotechnical Engineer
Ground Engineering Contractors (GEC)
P.O.Box 1053, AlKhobar- 31952
Email: gec-kho@gecsaudi.com
B.Sc Asian Inst. Thailand 08, M.Sc U of Alberta, Can 1

**MAAZ SHOAIB****MAQBOOL HUSSAIN**

Environmental Engineer
Saudi Consulting Services
P.O. Box 2341, Riyadh 11451
Email: maqboolsa@yahoo.com
M.Sc. (Env E) MSU98, M.Sc (Chem) QAU 92

**MAZHAR MUZAFFAR**

SMT Engineer
Comptel
Mursalat Compound, Riyadh
Email: mazharshariq@hotmail.com
B.Sc (CS), NICE U, Karachi 00

**MOHAMMAD ARSALAN JAWED**

Industrial Engineer
Saudi Readymix Concrete Company
Al Bandariyah, P.O. Box 31839, Al Khobar 31952
Email: arsalanjawed45@gmail.com
BE PNEC, NUST (Karachi) 15

**MOHAMMAD AZAM RANDHAWA****MOHAMMAD JAMAL-UD-DIN**

I&C Engineer
Weatherford
Email: jamal.mct@gmail.com
B.Sc.(Mechatronics) UETL 08

**MOHAMMAD OMAR BAIG**

Calibration Engineer
Muhammad Abdullah Al Azzaz
Alkhobar
Email: omerbaig2009@gmail.com
BE Industrial Engg, U of Mgmt & Tech 15

**MOHAMMAD USMAN LATIF**

Sales Director
SIEMENS
PO Box 719, Khobar 31952
Email: usman.latif@gmail.com
B.E. (Ind. E) NED 98

**MOHAMMED ZIAUL ISLAM**

Training Specialist
JV of SABIC & Mitsubishi
Jubail 31961
Email: islammz@gas.sabic.com
B.Sc. (Ind. Eng) MEU 77

Engineers from Other disciplines

MUDASAR SHAFIQUE

Senior Road Design Engineer
DAR International for Engineering Consultancy, Riyadh
Moraba, Riyadh
Email: dmudasar@gmail.com
BSc Transportation Engg, UET Lahore, 2012

MUHAMMAD ASIF

Manager, SLA & Reporting
STC Solutions
Hanafi Street, Ishbiliyah, Riyadh
Email: asif.arshed@gmail.com
BE Telecom, AIOU 2007, MBA Virtual Univ 2016

MUHAMMAD AZMAT

Technical Specialist
STC
Email: Engineer_azmat@hotmail.com
BE Mechatronics, UET Lahore 2004

MUHAMMAD DANISH FARAZ

Procurement Engineer
Olayan Descon Industrial Company Ltd.
P.O. Box. 10108, Jubail 31961
Email: engr.danish@hotmail.com
B.E. (Ind.E) DCET 07

MUHAMMAD JAWAD ALI

General Manager
Sealand Maritime Group
Dammam, Saudi Arabia
Email: jawadali29@hotmail.com
BSc Industrial & Manufacturing, UET Lahore 06, MBA 10

MUHAMMAD NAVEED FARUQUI

Manager Plant and Equipment
AETCON
Riyadh
Email: navedefaruqui37@gmail.com
B.E. NED 96

NADEEM RAHIM BAKHSH

Urban Planner
Saudconsult
Hara, Riyadh
Email: nadeembaksh@yahoo.com
BSc City Plan. 00, MSc 02, UETL

NOMAN ULLAH

Master Student
KFUPM
KFUPM Student residence
Email: nomanullah786@yahoo.com
BE I&ME NUST 14

MUDASSAR YASIN SIDDIQI

Project Manager-II
STC Solution
Riyadh
Email: mudassar_wac@hotmail.com
B.E. AIOU 06

MUHAMMAD ASLAM BROHI

Construction Engineer
AETCON
P.O.Box 250974, Riyadh 11391
Email: aslambrohi@hotmail.com
B.E. (Ind) MUET 93

MUHAMMAD BILAL AHMAD

Senior Engineer, Q & I
Ghazlan Power Plant, Rahima, Ras Tanura
Email: 91602@se.com.sa
BSIE, Adamson U 95, MSME, U of ST, Philippines 97

MUHAMMAD IRFAN SULEMAN

Lead Auditor & Trainer
Bureau Veritas
Al Khobar
Email: misulemanmeo@gmail.com
BE Environmental, UETL 09

MUHAMMAD KASHIF

IT Infrastructure & Software Lead
Specialized by STC
Riyadh
Email: netdiscussion@hotmail.com
BS. Computer Science (VU Lahore)

MUHAMMAD SHAKIL

Project Engineer
SIEMENS
Al-Rajhi Tower 7th fl Dammam-Khobar Highway
Email: muhammad.shakil@gmail.com
B.E. NED 01, M.Sc. KFUPM

NASIR ABBAS

Lab Engineer
KFUPM
Khobar
Email: nasir.abbas@kiu.edu.pk
Masters in Mining

RIAZ UL HAQ

Mechanical Engineer
JACOBS ZATE Engineering Consultant
AlJubail
Email: engr_riaz26@yahoo.com
B.E Industrial Dawood Univ Karachi 2010

Engineers from Other disciplines

**SAAD MEHMOOD SIDDIQUI**

QA & QC Engineer
Obeikan Technical Fabrics
Industrial City , Riyadh
Email: sms6683@gmail.com
B.Sc. (Textile Engg) TIP 07

**SALMAN SAEED**

Engineering Manager
ENGIE - Tihama Power Generation
Khobar
Email: salman.saeed@tihamapower.com
B.S Electronic Sir Syed UET 04, MEM NED UET 12

**SHEIKH ZUBAIR KHALID**

Sr. Technical Sales Engineer
Avanceon Arabia
Malaz, Riyadh, KSA
Email: zbisheikh484@gmail.com
B.Sc Mechatronics, UET Lhr 18

SUMIYA EBRAHIM

Email: sumaiyachotani@gmail.com
BCIT NED Kar 15

**SYED HARIS ALI**

Planning Engineer
Olayan Descon Industrial Co.
Jubail, KSA
Email: sharisalis@hotmail.com
B.E. DCET 06

**SYED OMAIR**

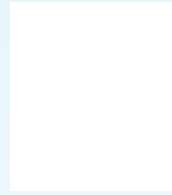
Head Data Center Facilities Consulting
Flint International
Qurtubah, Riyadh, KSA
Email: omaisryed@live.com
BS Telecom, Fast Nucs 09

**TARIQ SHAHZAD ALI AHMED**

Manager Operations
Al-Shareef Factory for Cartoon Containers
Rabwa, Riyadh
B.Sc. (Ind. Engg) UETL 03

**UMAIR RAZA**

Mechatronics Engineer
Tetra Tech Trading & Contracting Ltd.
Riyadh
Email: umairraza1820@gmail.com
Bachelors in Mechatronics & Control Engineering

**SAHER AFTAB AHMED**

Email: saher_aftab2006@hotmail.com
BS Textile Engg 15

**SARMAD ZAFAR KHAN**

Engineer-1
KFUPM
Khobar Iskan
Email: sarmadzafar@gmail.com
Masters in Petroleum

**SOHAIB ZAMAN KHAN**

Project Engineer
Yokogawa Saudi Arabia Co.
PO BOX 3368, Al-Khobar 31952
Email: suhaibzamank@hotmail.com
B.S. (Mechatronics) UETL 04

**SYED AMMAR HAIDER ZAIDI**

Mechanical project engineer
Naizak Global Engineering Systems
20th cross prince bandar street, Khobar
Email: syedammar21@gmail.com
BE (Material) NED UET 16

**SYED MOIZ AHMED**

Applications Engineer
Wheat Herford
Khobar
Email: moiz.ahmed@wheatherford.com
BE Industrial & Manufacturing NED UET 08

**TARIQ HUSSAIN YOUSAF ALI**

Riyadh
Email: tariq.hussain16@gmail.com
BE EE, UET Lahore 2007

**TAZIM HUSSAIN KAZMI**

Instructor
General Authority of Civil Aviation (GACA)
P.O. Box: 15441, Jeddah 21444
Email: tazimkazmi@yahoo.com
B.E. (Avionics) PAF KU 71, MBA USA 97

**UMAR MUNIR**

S&S Engineer
TIG-TESCO
Khobar
Email: engr.umer@tig-tesco.com
B.E. (Mechatronics) AIRU 08

Engineers from Other disciplines



USAMA BIN WASEEM

Operational Analyst
Muhammad Abdullah Al Azzaz
Dammam
Email: usamawaseem23@gmail.com
BE Petroleum, UET Lahore 14



USAMAH BIN TARIQ

System Engineer
Ather Telecom
Olaya
Email: usamah.bin.tariq@gmail.com
B.Sc. (TELCOM) MAJU 10



WAQAR AHMAD

ISP Engineer
Nokia Solutions & Networks (NSN)
Tatweer Towers B2, P.O. Box 340, Riyadh 11351
Email: waqar_ahmad@hotmail.com
B.Sc (CS), Preston U 06



ZAHEER FAZAL

Area Sales Manager
Konecranes Saudi Arabia
Yanbu
Email: zaheerfazal786@gmail.com
Bachelors

Do you know that Saudi Arabia's new **Personal Data Protection Law (PDPL)** now gives you legal ownership your digital footprint?

It means companies can no longer
use your information
without **clear consent**



and you have the absolute right to
see, correct, or even delete your data
from their systems.



This shift turns **privacy** from a **luxury**
into a **protected right**,
shielding you against unauthorized
sharing and data misuse.

Take a moment to **check the privacy settings** on your favorite apps today—
your data is now your power, so make sure you're the **one**



Write for YOUR Journal

IEP-SAC Journal is published every year at the occasion of its Annual Seminar. The Editorial Board welcomes articles for publication which could further the Journal's mission to keep professional engineers abreast of current trends and practices in engineering sciences and technology and to promote exchange of scientific and technical knowledge. Articles should be written in a serious but not over formal academic style at a level informative to other workers in the area and also accessible to engineers active in other fields of engineering.

The Editorial Board solicits manuscripts of the following types from prospective authors:

“Review” type papers suitable for reading by practicing engineers to give a first-class introduction to a subject with which they are not familiar.

Articles presenting key features of some new technology or system that is of general engineering interest.

Articles taking a new look at old problems readable by those outside the field.

Articles for the specialist recording an advance in the field, but readable by non-specialists also.

Scope

Broad interest articles pertinent to any discipline of engineering or related fields.

Manuscript Requirements

1. Papers can be 3000 words in length excluding diagrams and tables.
2. A short abstract of 150 words should be provided.
3. Manuscript may typically include five or six illustrations. These along with captions should be inserted at the appropriate places within the manuscript.

Refereeing

Acceptance of manuscripts is subject to peer review by the Editorial Board or other reviewers and conditional upon revisions made in light of comments from the review process. Authors are nevertheless responsible for the accuracy of statements made in the paper. Where applicable, authors are also responsible for obtaining clearance from their employers.

Due Dates

Articles should be submitted to the members of the Editorial Board electronically no later than 15-March 2027. Please ensure that IEP-SAC acknowledges with the receipt of the manuscript.

Please send your papers at email address (info@iep-sa.org)



THANK YOU ADVERTISERS



Al Qahtani Pipe Coating Industries

Inside Cover



GULF CONSULT ARCHITECTS & ENGINEERS

Inside Cover



GSSC Arabia

Back Cover



GEC
GROUND ENGINEERING CONTRACTORS

1



AL WAHBI GROUP

2



Insight Travel & Tourism

4



New Mavericks

4



Abdullah Khuraif Group
(Rehab & Water proofing)

7



International contracting

7



Attiq Ur Rehman Contracting co.

32



Kirby. The world's largest Manufacturers

32



Overseas interior

33



ATMAG

164

IEP SAC Journal

is one of the most prestigious publications in the engineering community.

Want to promote your business and reach a wider audience in KSA?

Get in touch to collaborate and grow your impact.

 **+966 50 297 7788**

IEP Membership Form



The Institution of Engineers, Pakistan

HQ Office, Engineering Centre, Liberty Roundabout, Main Boulevard., Gulberg III, Lahore 54000.

Ph: 042 – 35754043 / 35750699 Email: iephqr@gmail.com

(www.iep.com.pk)

1.	Name in Full in Block Letters		Affix latest passport size photograph
2.	Father's Name		
3.	NIC Number		
4.	Date of Birth		
5.	Permanent Address		
6.	Present / Postal Address		
7.	Telephone Number	Office Residence	
		Mobile Email	
8.	Basic Education		
	Certificate/Degree Obtained		Year
	College / University		
9.	Engineering Education		
	Degree Obtained		Year
	College / University		
10.	Post-Graduate Education		
	Degree Obtained		Year
	College & University		
11.	Professional Training &		
	Names of Organizations		
	where Obtained		
12.	Membership (s) of other		
	Professional Bodies, If Any		

13. Practical Experience:

Sr. No.	ORGANIZATION	POSITION HELD	FROM	TO	Total Years
1.					
2.					
3.					
4.					
5.					

PLEASE ATTACH A COPY OF DETAILED BIO-DATA

14. Class of membership in which admission is sought

☐ Chartered Engineers ☐ Fellow ☐ Member ☐ Associate ☐ Affiliate ☐ Subscriber

Current Membership Number

PEC Registration Number

Applicant's Signature



Building Excellence Since 2007

Delivering Engineering Excellence Across Saudi Arabia

ABOUT US

"At ATMAG, we are proud to be one of Saudi Arabia's trusted names in construction, delivering industrial, commercial, and residential projects. Since 2007, we have consistently provided high-quality construction and project management solutions across the Kingdom. Our reputation is built on commitment, innovation, and client satisfaction – ensuring every project reflects safety, efficiency, and excellence.

Today, we go beyond building structures; we engineer the future of the Saudi landscape. By integrating advanced technology with decades of on-ground expertise, we turn complex challenges into seamless realities. Our 100% Commitment to Quality is not just a promise—it is the foundation upon which we stand and the standard by which we lead."

OUR PROJECTS



KEY SERVICES

- Civil Works Execution
- Construction Management
- Project Management
- Fabrication & Erection
- Electromechanical Works (MEP)
- Smart Solutions
- Building Automation Systems (BAS)
- Security Systems Systems (ELV)
- ICT Infrastructure
- Finishing & Fit-out
- Sustainability & Energy
- Facility Management (FM)
- Value Engineering

OUR IMPACT

20+ Years Experience	32+ Major Clients	27+ Projects Completed	150+ Professionals	2+ Offices
100% Commitment to Quality	100% Technical Efficiency	100% Precision & Safety	100% Professional Supervision	100% On-Time Delivery & Quality Assurance

CONTACT US

+966 13 8899 100

+966 555 200 695

INFO@ATMAG.SA

Al Khobar - Eastern Province - Saudi Arabia



Scan for more information

WWW.ATMAG.SA

NO:70142209360 | CR: 2050056559 | VAT: 300559061400003 | AL KHOBAR 34443 | KINGDOM OF SAUDI ARABIA



GULF CONSULT ARCHITECTS & ENGINEERS

ABOUT US

GULF CONSULT ARCHITECTS & ENGINEERS (GC A&E), is a Saudi Arabian Consulting company, owned by Eng. Ali Al-Harbi and it is part of ALIKA GROUP, offers its clients more than Forty-Five (45) years of combined experience in the field of Engineering Design, Coordination for Authorities approval and Construction Supervision & PMC services in construction industry. GC incorporates an innovative and unique approach to Architectural and Engineering design by providing a comprehensive service that integrates all features of a Building project, Specializing in Industrial, Residential, Infrastructure, Retail, Health/ Medical, Hospitality and Commercial sectors.

OUR SERVICES

- Engineering Design
- Program Management / PMC
- Pre-Tendering & Post-Tendering
- Architect of Record (AOR)
- Specialist Studies (EIA, TIS, Hydrology, Sustainability)
- Fire & Safety Engineering
- BIM & GIS Services
- Construction Supervision

GC IN NUMBERS



GLOBAL PRESENCE

- SAUDI ARABIA
- PAKISTAN
- EGYPT



ABDULLAH MAGBOUL
General Manager



ALI AL HARBI
Group Chairman



SHAUKAT ABBAS
Operations Director



Scan the QR codes to visit our Website & Profile

gc-eng.com



Follow us on LinkedIn



- ✦ Scaffolding
- ✦ Skilled manpower
- ✦ Civil works & construction
- ✦ Equipment & machines installation
- ✦ Painting and sandblasting
- ✦ Electrical and instrumentation
- ✦ Road and asphalt
- ✦ Steel fabrication - welding and erection
- ✦ Airport equipment installation services
- ✦ Fire prevention & protection system
- ✦ Housekeeping and industrial cleaning
- ✦ Hvac and plumbing installation
- ✦ Landscaping and excavation

شركة غلام شبير سراج الدين للمقاولات
Ghulam Shabbir Sirajuddin Contracting Co.

CONTACT US

☎ +966 12 432 1002 ✉ info@gssc.sa