The Institution of Engineers (India)

(Established 1920, Incorporated by Royal Charter-1935)

Qatar Chapter

(Under the aegis of Embassy of India) **Affiliated with IBPC**

Patron: H.E. The Ambassador of India

(Licensed with Qatar Financial Centre (QFC)

53rd ENGINEERS' DAY 2020

SOUVENIR

100 YEARS 1920-2020

NEW

GEBERIT

GEBERIT SUPERTUBE

THE SPACE GAINING SYSTEM

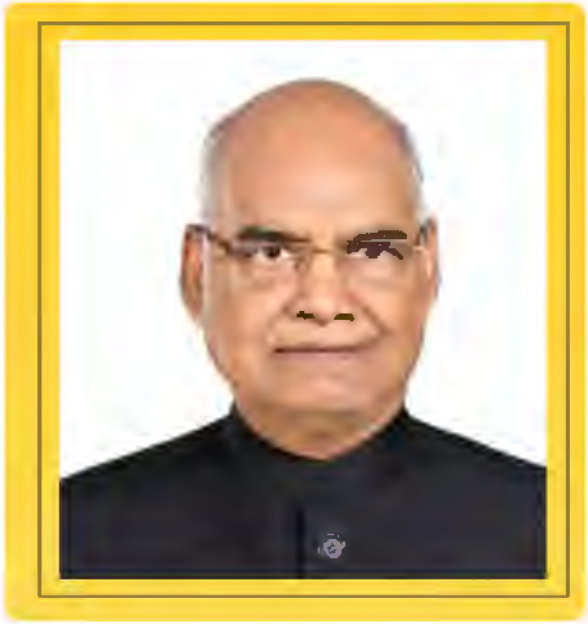
KNOW HOW INSTALLED

With less space required for drainage and more added value throughout the building, Geberit SuperTube is the innovative technology for hydraulically optimised drains in high-rise buildings. Three sophisticated fittings create a constant column of air in the drainage pipe, meaning a separate ventilation pipe is no longer required. Additional space is also created thanks to the optimally designed pipe diameters and horizontal offsets of up to 6 metres in length, which can be laid without a slope.

www.international.geberit.com/SuperTube

H.H. SHEIKH TAMIM BIN HAMAD AL-THANI
Amir of the State of Qatar

H.H. SHEIKH HAMAD BIN KHALIFA AL-THANI
Father Amir



H.E. RAM NATH KOVIND
President of India

H.E. NARENDRA MODI
Prime Minister of India

Dr. Sir Mokshagundam Visvesvaraya

September 15 is celebrated every year in the country since the year 1967 as "Engineers' Day" to commemorate the birthday of the legendary engineer Sir Mokshagundam Visvesvaraya. Sir Visvesvaraya, an eminent Indian engineer and statesman was born in a remote village of Karnataka, the State that is incidentally now the Hi-tech State of the country. Due to his outstanding contribution to the society, Government of India conferred "Bharat Ratna" on this legend in the year 1955. He was also called the precursor of economic planning in India. His learned discourse on Economic Planning in India, Planned Economy for India and Reconstructing India, was the first available document on the planning effort of the country and it is still held as the parent source matter for economic planners.

A theme of national importance is chosen every year by the Council of the Institution and deliberated at its various State/Local Centres to educate the engineering fraternity in g neral and the society in particular. This year the 53rd Engineers' Day will be celebrated all over the country on the theme "Engineers for a SelfReliant India" to mark the occasion.

Government of India is taking several steps to ensure that we are well prepared to face the challenges and threats posed by COVID-19.

India has faced the COVID-19 situation with fortitude and a spirit of self-reliance that is evident in the fact that from zero production of Personal Protection Equipment (PPE) before March 2020, India today has created a capacity of producing _ 2 lakh PPE kits daily, which is also growing steadily.

Additionally, India has demonstrated how it rises up to challenges and uncovers opportunities therein, as manifested in the re-purposing of various automobile sector industries to collaborate in the making of lifesaving ventilators. The clarion call given by the Hon'ble PM to use these trying times to become self-reliant has been very well received to enable the resurgence of the Indian economy.

The Indian engineering community subscribes to the above philosophy and has done itself proud. "Leadership" in India would come by only when all those who have authority and money, use them not only for their own gains but also for the benefit of those who lack them.

Participative "governance", rather than merely government. can drive the change. Public participation, continuous and tireless hard work, are the instruments that only could provide India the leadership baton where the world will watch the country as an embodiment of vibrancy, equity, and intellect in a market-driven economy in an all-inclusive environment. Redistributions from richer and more powerful groups to poorer groups that may face limited opportunities should be pursued. The ultimate goal should be reduction of poverty through equitable pursuit of prosperity and the engineering community will harness and manage the natural resources with equity lens and demand level-playing field.

Efforts at the required reforms must be accompanied by safeguards as appropriate for a country of the size and income disparity such as India. Also, policy initiatives that contribute to the growth of agricultural and manufacturing sectors, and therefore create employment, must be pursued rigorously.

There is a clear path to lead India to global leadership in engineering and technology and become self-reliant in these spheres. The country has the resources, the institutions and the mindset too. Engineers do need to work towards a fusion of our positive achievements. This is the essential condition for India's path towards self-reliance and emergent role in global engineering and technology. With the seamless engineering and technology capabilities, tempered by the social and political systems, Indian engineers can be the harbinger to the development of economy of the country in the post-pandemic regime.

The Institution of Engineers (India)

AN ISO 9001 : 2008 CERTIFIED ORGANIZATION (ESTABLISHED 1920, INCORPORATED BY ROYAL CHARTER 1935)
HEADQUARTERS: 8 GOKHALE ROAD, KOLKATA 700 020, INDIA

How does the Institution serve the Engineering Community?

The services rendered by The Institution of Engineers (India) to its Members are primarily through a variety of technical activities and functions such as :

- Dissemination and updating of engineering and technological knowledge and diffusion among its members, the information on all matters affecting engineering, through Technical Activities, such as seminars, symposia, continuing education courses, workshops, paper meetings, conventions, conferences, etc at both national and international levels;
- Providing access to R & D activities and engineering practices through engineering and technological disciplines;
- Focusing on new developments, techniques, products, processes and other issues of topical interest;
- Highlighting emerging engineering and technological scenario through comprehensive coverage in the tabloid IEI News published monthly along with authoritative discourses and state-of-the-art reviews on specialized engineering issues in the Technorama published annually;
- Extending engineering information and library services at its Headquarters and at the State and Local Centres;
- Inculcating and promoting amongst engineers and technologists a growing commitment to the social objectives of the profession;
- Fostering national and international cooperation in engineering and technology;
- Acting as an accreditation body for courses in engineering;
- Acting as qualifying body and conducting examinations under its non-formal education programme, to cater to the needs and aspirations of prospective entrants to the profession;
- Recording appreciation of and extending recognition to individual achievements and activities in advancing the art and science of engineering and technology;

MESSAGE

Ambassador

भारतीय राजदूतावास
السفـــارة الهنـــدية
EMBASSY OF INDIA
P.O. BOX 2788, DOHA-QATAR
Tel.:(+974) 4425 5703, Fax :(+974) 4467 0448
E-mail :amb.doha@mea.gov.in
Homepage :http://www.indianembassyqatar.gov.in
Twitter : @IndEmbDoha

MESSAGE

I am delighted to extend my warm greetings and best wishes to the Institution of Engineers (India) Qatar Chapter (IEI,QC) on the 53rd Engineers Day Celebration (19th December 2020), with "Engineers for a Self-Reliant India" , a relevant theme in present context.

It is heartening to note that IEI,QC has been celebrating this special Day since its inception in 1991 to commemorate the birth anniversary of Sir Mokshagundam Visvesvraya, a recepient of Bharat Ratna ,a legendary engineer and architect of modern India who dedicated his life to country's development.

IEI, QC is an active and important forum for showcasing the capabilities and achievements of Indian engineers working in the state of Qatar and promoting India-Qatar cooperation in various engineering sectors. Afterall, at its heart, Engineering is about using Science to find creative & practical solutions, building bridges to connect people and societies.

On the occasion, I congratulate the Indian Engineers fraternity here in Qatar for their stellar contributions and wish them the very best in their future endeavors.

(Deepak Mittal)

MESSAGE

NATIONAL BOARD OF ACCREDITATION

NBCC Place, East Tower, 4th Floor, Bhisham Pitamah Marg,
Pragati Vihar, New Delhi-110 003
Tel: +91 11 2436 0620-22, 2436 0654 Telefax: +91 11 2436 0662
Website: www.nbaind.org

Ambassador

NATIONAL BOARD of ACCREDITATION

Message

I am happy to note that The Institution of Engineers (India), Qatar Chapter is celebrating the 53rd Engineers' Day on 19th December, 2020 and is bringing out a digital Technical Souvenir on the occasion. IEI Qatar is one of the most active associations of Indian professionals in Qatar.

The theme "Engineers for Self-Reliant India" is very relevant in the context of rapid technological development and disruptive innovation which have become all pervasive in many aspects of society.

Engineers Day is the day of reverence and conscientious thinking for all Engineers. This day belongs to the Engineering community and all Engineers shall feel proud to be associated with this highly important and noble profession.

I am sure that the deliberations in these areas of Interest would be relevant and fruitful.

I take this opportunity to congratulate all fellow engineers on the occasion of the 53rd Engineers Day and wish them a great success.

(Prof K K Aggarwal)
Chairman, National Board of Accreditation, India

MESSAGE

National Design and Research Forum
The Institution of Engineers(India)
3, Dr. B.R. AmbedkarVeedhi
BANGALORE - 560001

NDRF

Dr. Mylswamy Annadurai
Chairman, Board of Governors

With my recent association with Institution of Engineers (India) Qatar chapter, I have come to know the level of professional networking the chapter brings in to refresh the latest practices, challenges and opportunities among it's professional members of practicing engineers keeping it's century old parental institution's legacy. I am equally happy to know that the Qatar chapter of IEI is bringing out a souvenir as a mark of 53 rd Engineers day 2020 celebrations. I convey my bes t wishes for the success of the celebrations and for all the future endeavors of IEI - Qatar.

My greetings to Chairman Er Abdul Sathar, FIE, all office bearers and members of IEI -Qatar Chapter. All of their efforts during the latest COVID-19 pandemic is really laudable.

Bangalore
5 Dec 2020

(Dr Mylswamy Annadurai)

E-mail:ndrf@ieindia.org|ndrf85@gmail.com|www.ndrf.res.in|Ph: 080-22264336 | 9901903336

MOU SIGN WITH OUC | LIVERPOOL JOHN MOORES UNIVERSITY

MESSAGE

The Institution of Engineers (India)

MESSAGE

(Established 1920, Incorporated by Royal Charter 1935)

Er. Narendra Singh, FIE

BE(Civil), P.G.D., FIE(India)

President - IE(I), Kolkata

Head Office : 8 Gokhale Road, Kolkata-700020

Residence : C-101, Alaknanda Apartment 51B, Rajpur Road, Dehradun

Contact : 0135-2712167, 9412051590

Email : president@ieindia.org nsinghieindia@rediffmail.com

"A Century of Service to the Nation"

1920-2020

It is my immense pleasure to note that Qatar Chapter of The Institution of Engineers (India) is celebrating the 53rd Engineers' Day on 18 December 2020 at Qatar University, West Bay on the theme "Engineers for a Self-Reliant India". The Chapter would also bring out a Digital Technical Souvenir to commemorate the celebration.

India has been facing the COVID-19 situation with resilience and a spirit of self-reliance which is evident from various measures that the Government of India has taken to face the challenges and threats posed by COVID-19 pandemic across the globe. Indian engineers are playing a pivotal role during such crisis situation to lead India to global leadership in engineering and technology and become self-reliant in these spheres. I am sure that the Guest Speakers will highlight more on the topic for updation of the participants.

I convey my hearty greetings to the participants and send my congratulations for the efforts of the members of Qatar Chapter of the Institution in celebrating the 53rd Engineers Day.

I wish the event a grand success.

President, IEI

Er. Narendra Singh, FIE

MESSAGE

Dr T M GUNARAJA
Chairman
Technical Committee - Information & Communication

Dear Fellow Engineers,

I am happy to note that The Institution of Engineers (India), Qatar Chapter is celebrating the 53rd Engineers' Day on 19th December, 2020 and is bringing out a digital Technical Souvenir on the occasion.
IEI Qatar is one of the most active associations of Indian professionals in Qatar.

The theme " Engineers for Self-Reliant India" is very relevant in the context of rapid technological development and disruptive innovation which have become all pervasive affecting all aspects of society .
It is also imperative that societies like the Institution of Engineers (India) Qatar Chapter continue to engage in academia, helping to educate and produce the highest level of engineers.

I am sure that the deliberations in these areas of Interest would be relevant and fruitful.

On behalf of World Federation of Engineering Organization – CIC , I wish you all the very best on Engineers Day 2020.

Dr. TM Gunaraja FIE
Chairman, WFEO-CIC

Maison de l'UNESCO 1, rue Miollis 75015 Paris, France Tél: +33 (0)1 45 68 48 46 Fax: +33 (0)1 45 68 48 65
email: secretariat@wfeo.org Website: www.wfeo.org

MESSAGE

The Institution of Engineers (India)

AN ISO 9001 : 2015 CERTIFIED ORGANISATION
(ESTABLISHED 1920, INCORPORATED BY ROYAL CHARTER 1935)
8 Gokhale Road, Kolkata-700 020
http://www.ieindia.org

H R P Yadav, FIE
Secretary & Director General - I/C

Ph. Direct : (91) (33) 2223 8230
Fax : (91) (33) 2223 8345
E-mail : sdg@ieindia.org

A Century of Service to the Nation

MESSAGE

I am happy to note that Qatar Chapter of The Institution of Engineers (India) is celebrating the 53rd Engineers' Day on 18 December 2020 at Qater University, West Bay on the theme **"Engineers for a Self-Reliant India".**

The them of the 53rd Engineers' Day is apt to the ongoing COVID-19 pandemic situation globally. The role of engineers to meet the challenges due to this Pandemic is of paramount importance. I am sure that the participants would make best use of the opportunity to update themselves on the subject through this celebration and the recommendations that will come out of the deliberations of the Guest Speakers would be useful for stakeholders and implementing agencies.

I convey my best wishes to the organizers and wish the celebration a grand success.

Dr H R P Yadav
Secretary & Director General – I/C

INDIAN BUSINESS AND PROFESSIONALS COUNCIL

PROMOTING BUSINESS AND TRADE BETWEEN INDIA AND QATAR

Date: 13th December 2020,

I am happy to note that The Institution of Engineers (India), Qatar Chapter is celebrating the 53rd Engineers' Day on 19th December, 2020 and is bringing out a digital Technical Souvenir on the occasion.

IEI Qatar is one of the most active associations of Indian professionals in Qatar.
The theme " Engineers for Self-Reliant India" is very relevant in the context of rapid technological development and disruptive innovation which have become all pervasive affecting all aspects of society .

It is also imperative that societies like the Institution of Engineers (India) Qatar Chapter continue to engage in academia, helping to educate and produce the highest level of engineers. I am sure that the deliberations in these areas of Interest would be relevant and fruitful.

On this blissful and charming day of 53rd Engineers Day, on behalf of IBPC I wish the President, Managing Committee and all Council Members of IEI good health, prosperity and may you continue the journey of success with pride!

Thank You & Warm Regards

Azim Abbas
President
Indian Business & Professionals Council
Under The Aegis Of Embassy Of India Doha Qatar

Indian Business & Professionals Council LLC (G)
Under the aegis of Embassy of India, Qatar
P.O Box: 2388, Doha-Qatar,Tel: 44660259,Fax: 44680804(M) 55500797, (M) 66127451
www.ibpcqatar.com, Email: president@ibpcqatar.com, info@ibpcqatar.com
[Licensed under the Qatar Financial Authority, QFC No: 00359]

President, IEI HQ visited H.E. Ambassador of India to Qatar

Excom IEI - Qatar

IEI - Qatar Chapter, 51st Engineers Day, Celebration

MESSAGE

PMA
PROJECT MANAGEMENT ASSOCIATES
(a not for profit registered society)

Indian member of
PMA India | IPMA International project management association

Dr. A Sivathanu Pillai
(Padma Bhushan Awardee)
President, PMA, India
Former CEO & MD, BrahMos Aerospace
Former Chief Controller R&D, DRDO

(a not for profit registered society)
FC-33, Plot Nos. 1 & 2, Periyar Centre
3rd Floor, Institutional Area, Jasola
New Delhi – 110025
Mob.: +91 9811024674, 9711631540
Email : president@pma-india.org
Website: www.pma-india.org

Message from Dr. A. Sivathanu Pillai, Distinguished Scientist, Founder & CEO, Brahmos Aerospace, President, Project Management Associates, India

I am delighted to know that Institution of Engineers (India) Qatar Chapter is celebrating 53rd Engineers' Day on 18 th Dec 2020 and on this occasion, publishing a Technical Souvenir containing many valuable technical articles.

Institution of Engineers (India) which celebrated its century, hundred years of great service to Engineers has spread its wings in Qatar through IE(I) Qatar Chapter which has been rendering excellent service to Indian Engineering Community in Qatar since 1992. It's purely due to the dedicated efforts of IE(I) Qatar, our professionals in Qatar are connected, share their knowle dge and successes and also come out with innovative solutions to the various challenges.

Engineers lay the foundation and build for a better tomorrow. They are the backbone for all development work that we are witnessing today. Therefore, acknowledging th contributions made by all Engineers by celebrating Engineers' Day is commendable.

PMA as a Member of IPMA, International Project Management Associates has partnered with IE(I) to promote Project Management Competence Development to all the Engineers in Qatar. I take this opportunity to convey my best wishes and offer our support for all activities of IE(I) Qatar.

With best regards

Dr. A Sivathanu Pillai

MESSAGE

Inspiration to innovate starts with the thought of changing something. Realising what needs to be done, developing an understanding of the underlying factors that influence the situation and then courageously taking the steps towards making things better are key elements of innovation leadership. Human life has turned out to be more complex than ever with unprecedented paradigm shifts, disruptions and extremely demanding situations.

Engineers drive such transformation and innovations for humanity to deal with these situations. The role of Indian engineers in the greatest transformations of our century across the world has been an inspiration across all industries and sectors all over the world. The Qatar chapter of the Institute of Engineers (India) has been one of the key partners of OUC with Liverpool John Moores University, Qatar since inception.

We have come together to celebrate and propagate the common aspiration to promote knowledge, research and innovation among the communities we serve. The annual publication of the IEI Qatar chapter is another milestone in its history and will enrich the thoughts and knowledge of the community about the past, present and the future. The students and the staff at OUC with Liverpool John Moores University, Qatar are proud to be a part of it. Congratulations to the members of the IEI- Qatar chapter and all Indian Engineers for their contributions to humanity.

Azmy Ameer
President /Executive Director
OUC| Liverpool John Moores University, Qatar

53rd Engineers Day Photos on 27th Sep 2019 at Al Dana Club - Qatar

MESSAGE

The Institution of Engineers (India)

(Established 1920, Incorporated by Royal Chapter 1935)
Affiliated to IBPC, Under the aegis of Embassy of India - Qatar Chapter
P.O Box: 18523, Doha-Qatar, E-mail: ieiqatar@gmail.com, Website: www.iei.qa

Celebrations throughout the world are taken to great heights and strides during the Engineers day in remembering the realized past and visualizing the future of the tenets set out by reversed visionary Bharat Ratna Sir M. Visvesvaraya.

Being part of such Celebration for the year 2020 gives me sense of great pride and privilege, as I write this message from my desk at the Doha Chapter.

As the country of Qatar has very well progressed in the last decade as one of the foremost and fastest developing countries in the world, especially welcoming of 2022 FIFA World Cup, blessed.

The Qatar Chapter of IEI is indeed happy to publish this technical Souvenir on the 53rd Engineer's Day to mark the birthday of Bharat Ratna Sir M. Visvesvaraya, the doyen of Engineering fraternity whose creative genius nearly revolutionized the concepts of planning for community welfare of both the rural poor as well as urban masses.

I wholeheartedly commend all the enthusiastic dynamic & dedicated Engineer Member of all the past and present Executive Committees, who have made a name in the engineering fraternity for their selfless services in uplifting the status of Engineer & Engineering profession. But the task is growing more and more complex, with ever expanding technological development and advancement of engineering field and applications.

The theme chosen for this year's commemoration is "Engineers for a Self –Reliant India". This is a very relevant topic in the current context. 'Change' is the most important challenge faced by the Engineers of a developing India. I have profound optimism that discussions on the Engineers Day Theme will emerge into exiting ideas, developments and opportunities for the Engineers in the coming years.

In year 2019-2020, IEI Qatar Chapter signed Two Memorandum of Understanding with OUC | Liverpool John Moores University and International Project Management Associations. This day belongs to the Engineering community and all Engineers shall feel proud to be associated with this highly important and noble profession.

I take this opportunity to express my sincere thanks and gratitude to our well-wishers and supporters for their guidance and support which has enabled the IEI Qatar Chapter to function as a truly professional body in Qatar. I also take this opportunity to congratulate all fellow Engineers on the occasion of the 53rd Engineers Day and wish a great success.

Er. Abdul Sathar FIE, MBA,
Hon. Chairman

International Engineering Congress - Opening of Science Exhibition on 26th Sep, 2019

International Engineering Congress - Opening of Science Exhibition on 26th Sep, 2019

Chief Guests

Dr. Deepak Mittal,
H.E Ambassador of India
to the state of Qatar.
& Patron of IEI Qatar Chapter

Prof. K.K. Aggarwal
Chairman,
National Board of Accreditation (NBA), India
Former President, Computer Society of India

Guest of Honour

Dr Mylswamy Annadurai,
Chairman, National Design and Research Forum,
Vice President, Tamil Nadu State Council for Science and Technology

Er. Nasser Jeham Al Kuwari,
Former Chief Executive Officer of Qatar Chemicals (QChem) & Qatar Fuel Additives Company (QAFAC)

Dr. TM GunaRaja FIE
Chairman , World Federation of Engg. Organization - CIC,
Immediate Past President
The Institution of Engineers (India)

Dr. Abdulla Y. Al Sayed
President of Lean Construction Institute- Qatar.
Chief Development & Project Delivery Officer - Asia & Africa,
Qatari Diar

Mr. Azmy Ameer
President and Executive Director
OUC | Liverpool John Moores University, Qatar

Dr. Homaid Abdulla Al Madfa,
Chairman of the Board of Directors, OUC|Liverpool John Moores University, Qatar
Former Vice President of Administrative Affairs and CFO of Qatar University

Ms. Sunitha Shyam
Founding Partner and CEO
VERITADYNE Strategic Consulting

Er Ahmed Jassim Al Jolo
President, Arab Engineers Forum
Former President, Qatari Society of Engineers

Welcome Address
Er. Abdul Sathar FIE
Chairman,
The Institution of Engineers (India)
Qatar Chapter

The Institution of Engineers (India)

53rd Engineers' Day-2020

World Federation of Engineering Organizations
Fédération Mondiale des Organisations d'Ingénieurs
WFEO-CIC
Committee on Information and Communication (CIC)
Hosted by The Institution of Engineers (India) Qatar Chapter

Satellite Applications in the post Pandemic world

Chief Guest
Er. Narendra Singh FIE
President,
The Institution of Engineers (India)

Introduction
Dr. TM Guna Raja FIE
Chairman , WEFO-CIC,
Immediate Past President
The Institution of Engineers (India)

Key note Speaker
Dr. Mylswamy Annadurai - (Moon Man of India)
Program Director - for the project of CHNDRAYAN & MANGALYAN ,
Vice President, State Council for Science and Technology (TNSCST),
Chairman, Board of Governors, NDRF – India

Guest of Honour
Er Ahmed Jassim Al Jolo
President, Arab Engineers Forum
Former President,
Qatari Society of Engineers

Welcome Address
Er. Abdul Sathar FIE
Chairman,
The Institution of Engineers (India)
Qatar Chapter

Guest of Honour
Mr. Azmy Ameer
President / Executive Director
OUC in partnership with
Liverpool John Moores
University

www.wfeo.org

WFEO-CIC Technical WEBINAR on 12th Nov at 6:00-7:30 PM (Qatar Time)

zoom Zoom : Meeting ID: 968 2653 8144 Passcode: IEIQatar

iei.qa

BEACH CLEANING

DELAYS TO CONSTRUCTION PROJECTS

Er. Sajeet George
B.E, MIE, C.Eng(I), PMP, ACIArb

Er. Sanjay Jain
B.E., M.I.E, PMP, ACIArb

Preface

While Contractors or Client never want a delay to actually happen in the project schedule, as time is money, delays unfortunately do happen. It's a fact that time is one of the most critical factors that needs to me managed in any Construction Project Schedule.

Despite engaging professional companies, implementing proper planning and adequate preventive measures during various phases of the project life cycle, projects do experience time overruns for various reasons.

Based on industry experience, 50 to 60% of the Construction Projects, known to us and or where we are directly involved, have incurred time overrun, ranging from 20% to 40% or more of the Scheduled timelines.

Impact of Delays

Foremost impact of the Delay in simple terms is additional days of Work that would involve more man hours and machine hours for completion of a Project, in comparison to the planned duration. This would lead to escalation in project cost.

There are several adverse impacts associated due to Time overrun, some of these are listed below:

- Cost overrun,
- Information delays,
- Undue Disputes, Negotiations, Arbitration and Litigation,
- Abandonment of the Project,
- Delays in Payment to Contractors and other Parties, Liquidated Damages,
- Funding Problems, Client Frustration,
- Poor Project Management, Compromise in meeting required Quality Standards,
- Compensation Issues and Disagreement on the Valuation of Work Done,
- Negative Social Impact,
- Idling Resources.

All of these above impacts are significant enough to affect the profitability of the Project and various stakeholders, and also by and large to the Construction Industry itself.

Reasons for the delays

There are multiple reasons that could factor into the delay of projects. Generally, the most significant factors that could cause project delays are as follows:-

- Poor Original Planning / Unrealistic Duration

This is most common factor and occurrence in the Construction Industry that causes project delays. In tendering stage, Contractors are sometimes inexperienced, others knowingly and unknowingly quote short timelines during bidding in the spirit of competitiveness, but end up agreeing to the deadlines that cannot be practically met. In some other cases, Client award Contractors projects with predetermined timelines that are unrealistic and hard to meet with the given terms and conditions of the Contract.

- Lack of Information about the Project

Lack of full information about a Project is also one of the foremost reason for the project delays, which is usually a shortcoming on the Client's side or stakeholders. Incomplete drawings & design documents; lack of information about the Construction site and working conditions and delayed timely approvals are certain examples. Lack of such vital Information during the design and in particular early stages of construction often leads to delays.

- Changes to the Contract Specifications during the Execution Phase

Changes to the initial specifications are common and certain adjustments may be made to the original design, or material choice depending on the Client's needs or as per the Contractor's recommendations for various valid reasons. However, if not done in a timely manner, it often affects the already tight schedule. Also, it is seen in many instances that such changes have financial implications, which cannot be immediately met and agreed between Client and the Contractor, that lead to the delay and sometimes result in stalling of the project in part or full.

- Resources Availability

The other common factor for the delay is the Contractor's failure to mobilize Manpower, Plant and Equipment's in a timely manner to meet the project schedule. Delays include delayed procurement of material and inadequate skilled & unskilled labour, poor productively, lack of adequate plant and machinery encountered during the construction phase. These factors often lead to insufficient rate of progress and or impact to the critical path of the Project. Sometimes, the unnatural causes like Covid-19 in recent times, which are exceptional also lead to lack of resources and project delays.

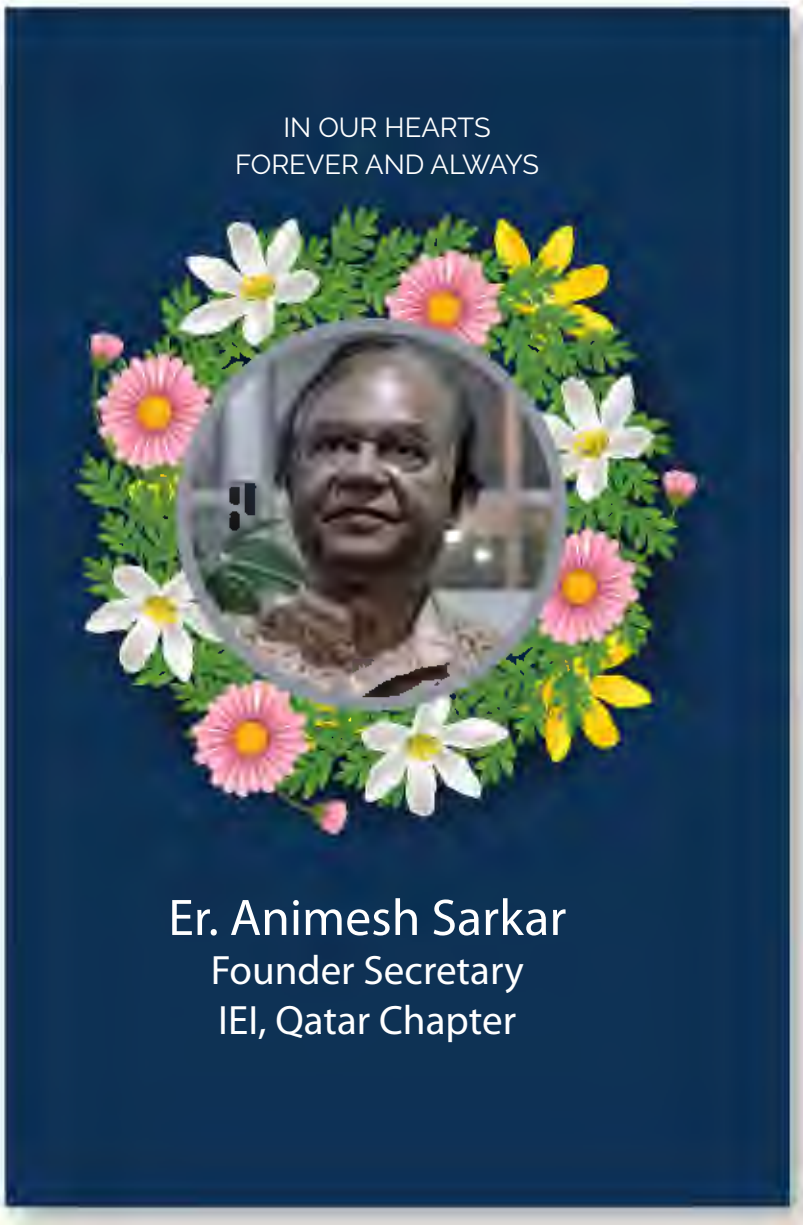
Possible Ways to Mitigate the Delays

Whilst the delays must be avoided, it is not practically possible on the Construction projects to prevent every delay. However, certain steps must be undertaken to avoid the critical delays, to mitigate the damage from delays that do occur in order to keep your project on track. Some of these measures are listed below:-

- Set Realistic Goals for the Project
- Ensure that the right and well experienced people participate in project planning, Design and Tendering Stages
- Gather Accurate and Complete information about the Project, Local Conditions and Regulations
- Understand any Outside Support that may be needed throughout the life cycle of the Project
- Proactive and Continuous Effective Communication amongst Key Stakeholders at every stage of the Project
- Implement Strong Project Controls and Project Monitoring Team

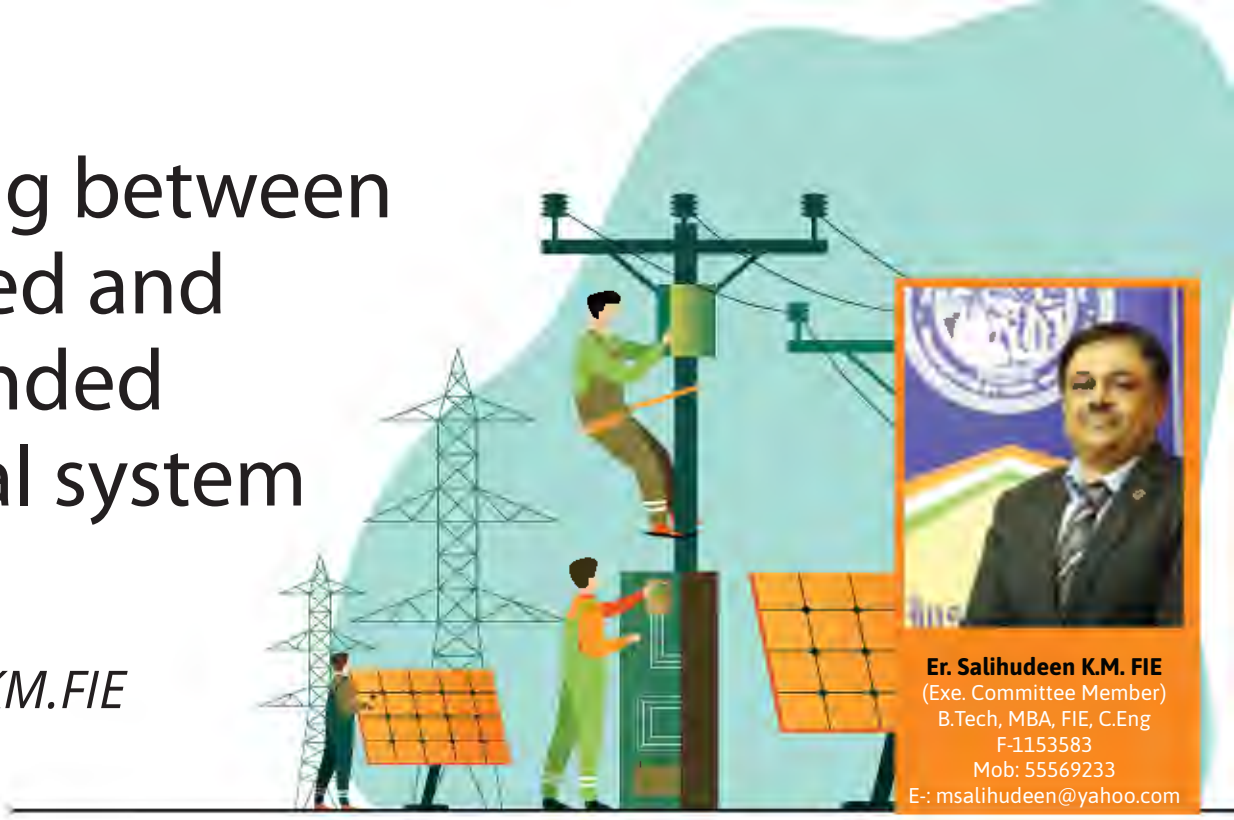
Conclusion

It is a well-known fact that the delays in construction projects are inevitable and the occurrence is high, notwithstanding that the key Stakeholders are aware of this including the several reasons that cause these delays. It is therefore important for all Parties / Key Stakeholders to ensure risk identifications and control measures planned and factored in advance of the various stages of the project based on the lessons learned from the previous projects, including availability of relevant information and documents before the start of the Project, and subsequent implementation of adequate mitigation measures in a timely manner in case of any delay.



Choosing between grounded and ungrounded electrical system designs

Salihudeen.KM.FIE



Er. Salihudeen K.M. FIE
(Exe. Committee Member)
B.Tech, MBA, FIE, C.Eng
F-1153583
Mob: 55569233
E-: msalihudeen@yahoo.com

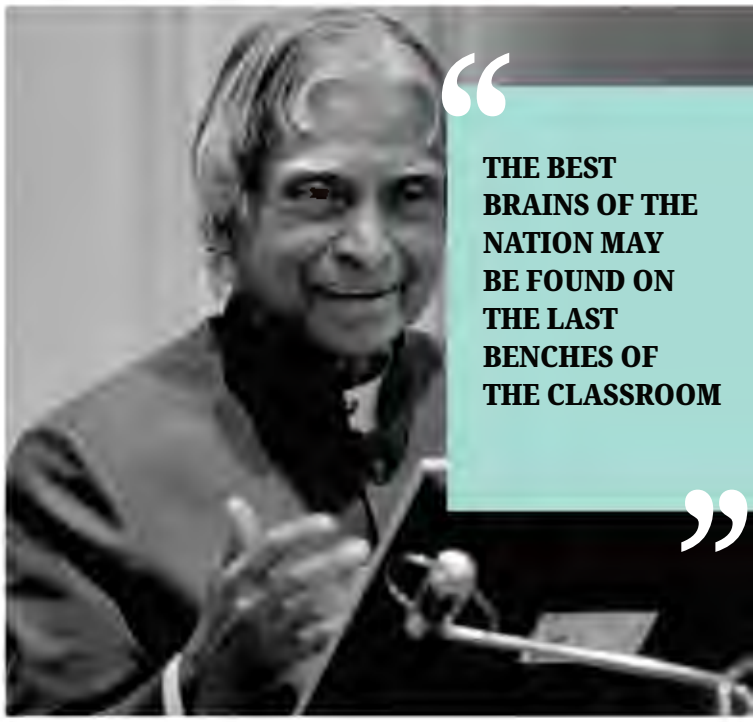
Understanding both grounded and ungrounded electrical systems enables engineers to apply the appropriate grounding topology for the electrical system requirements.

Grounding and shielding electrical systems are of key importance to electrical engineers. Understanding the basic operations between grounded and ungrounded electrical systems is necessary for matching the appropriate grounding topology to the desired electrical system performance.

Selecting the proper grounding topology for an electrical distribution system is important to ensure facility occupant safety and health as well as reliable and safe electrical equipment operation. According to NFPA 70: National Electrical Code (NEC), Article 250.4(A)(1), the purpose of electrical system grounding is, "To limit the voltage imposed by lightning, line surges, or unintentional contact with higher-voltage lines that will stabilize the voltage to earth during normal operation." The focus of Article 250 is to describe the grounding topologies available among grounded and ungrounded systems and how they operate.

The purpose of grounding the electrical system as stated in NFPA 70: National Electrical Code (NEC) is, "To limit the voltage imposed by lightning, line surges, or unintentional contact with higher-voltage lines that will stabilize the voltage to earth during normal operation." To achieve these goals, the NEC provides the framework for the selection of grounding methodologies in Article 250. The focus of this article is to describe the grounding topologies available among grounded and ungrounded systems and how they operate.

The importance of providing a solidly grounded circuit for safety was recognized in the early editions of the NEC. According to "IAEA Soares Book on Grounding," 100 years ago, the 1913 NEC committee required that "transformer secondaries of distributing systems must be grounded, provided the maximum difference of potential between the grounded point and any other point in the circuit does not exceed 150 V and may be grounded when the maximum difference of potential between grounded point and any other point in the circuit exceeds 150 V." The code committee recognized that when a fault occurs on a grounded circuit, the grounded conductor maintains the system voltage at a stable source voltage rather than floating up to a higher potential. This protects individuals from being exposed to a potentially lethal shock were they to touch a faulted line, equipment, or chassis.



Solidly grounded systems

Today, because grounded systems offer greater voltage stability, most of the systems described in Article 250.20 of the NEC require a grounded system, whether it is a solidly grounded system or an impedance grounded system. Historically, the most commonly used system is the solidly grounded system (see Figure 1).

The NEC allows up to 25 ohms of ground resistance, recognizing different soil resistivities found across the U.S. However, the lower the ground resistance (or higher the ground conductivity), the better the ground fault detection system will operate. Typically, 5 ohms is a good design basis for commercial buildings. Lower ground impedance may be required for some medical imaging equipment. In a solidly grounded system, the ground fault system performs better with smaller ground electrode resistance. Article 250.2 of the NEC states that an effective ground fault current path consists of "an intentionally constructed, low impedance, electrically conductive path designed and intended to carry current under ground fault conditions." Therefore in a solidly grounded system, it is the design intent to provide an earth reference to open a circuit as quickly as possible to isolate the fault based on high current flow. This prevents the fault from escalating and also protects connected motors and equipment from damage (see Figure 2).

Fault types

There are several types of faults that an electrical system must be designed to withstand. The worst case but less common fault is a 3-phase bolted fault with little or no circuit impedance in the fault path. Equipment is typically sized and noted with a fault current rating based on fault calculations for these situations. With little impedance in a grounded circuit, high fault current levels are possible and arc flash hazards may be present in a solidly grounded system. The high fault current levels are considered one of the main downsides of a solidly grounded system. For example, in a 3-phase line-to-ground fault, voltage remains constant and because the impedance of the system is intentionally minimized, a direct result from the application of Ohm's Law predicts high fault current flow. A benefit is high fault current will cause the upstream overcurrent protective devices to sense and operate quickly to isolate the faults as they return to the source within pathways designed to have the least resistance. It is up to the designer to provide an adequate pathway to guide the fault properly back to the source with strategies such as compression couplings on raceways, bonding to steel and periodic testing of the ground electrode system.

Because of the importance of this current flow being high enough to trip overcurrent devices, the NEC requires that the neutral-to-ground bond be made within the service entrance equipment. This is essential for the ground fault detection scheme to operate correctly. If the ground is made outside the equipment, the reactance of the circuit will increase. The total impedance of the circuit is expressed as (R+Xj), where Xj is the system reactance. When the total impedance of the system is too high, the overcurrent protective device may not operate as desired. Grounding at a single location at the source also provides benefits for the overall electrical system by preventing circulating currents.

Although a designer must account for the worst-case scenario, the 3-phase fault is quite rare. In fact, line-to-ground faults account for 90% to 95% of all recorded fault events in industrial settings. These faults can manifest themselves as arcing faults, which can cause current flow at a lower level than the overcurrent device rating. This is considered a serious drawback of the solidly grounded system because these faults may go undetected until equipment damage is done. The design remedy is to introduce ground fault detection into the circuit. During the 1970s, the NEC recognized this issue and added language to require that feeders rated 1,000 A or more on solidly grounded 430 Y/230 V wye-connected systems be equipped with ground fault detection. Ground fault detection can get complicated, especially if multiple levels are used within a system. Similar to circuit breaker coordination, it is necessary to coordinate the time-current curves for ground fault overcurrent protection to prevent upstream breakers from tripping prior to the GFI breaker closest to the fault. Otherwise, more systems than desired will be brought offline.

Modern low-voltage transformers are primarily designed and constructed with delta primaries and wye secondaries. In most commercial and industrial applications, the standardized voltage is 430 Y/230 V on the secondary side. Early versions of the NEC didn't require systems to be grounded on the secondary side for voltages higher than 150 V. Grounding the secondaries of these service transformers for safety and to minimize equipment risk didn't gain momentum until the mid-1930s. A cost-effective solution was to ground a corner of the delta secondary. Therefore, many historic structures still have operating delta-delta service transformers where one corner of the transformer has been grounded to provide 120 V/240 V power within the facility.

The primary goal for a solidly grounded system is to open the circuit as quickly as possible to limit damage and risk to life. For large process and industrial plants, stopping the process can be equally hazardous. Prior to the mid-1930s, the concept of an ungrounded system was still in favor because of the service continuity benefits that the ungrounded system provided. A fault on an ungrounded system doesn't cause the source circuit breaker to trip. In fact, the system will keep operating until the operator tracks down the fault or until a second fault causes a major component in the electrical system to fault to ground, during which large magnitudes of current flow (see Figure 3). While theoretically this system is ungrounded, in reality the three phases are capacitively coupled to ground (see Figure 4).

Rather than a true ground, it is the system capacitance that helps to stabilize the voltage during normal operating conditions. However, during a fault—typically from line to ground (via the system capacitance)—there is no direct ground connection, and there is no high current flow that would otherwise trip the circuit breaker to isolate the fault. Instead, it causes the phase voltage to rise 1.73 times the voltage on the other phases without tripping the breaker (from "Ground Fault Protection on Ungrounded and High Resistance Grounded Systems," Post Glover). If cable systems and motor systems were not specified to withstand these higher voltage levels, the electrical systems would be subjected to undesirable stresses that would take their toll over time. Moreover, if an intermittent fault occurs, such as an arc fault, which can strike and restrike, overvoltage of up to 6 times greater than typical line voltage can occur, which can severely damage cable insulation and sensitive equipment. As equipment ages, it becomes more vulnerable to these strikes until, ultimately, it fails and faults to ground through equipment cases—or worse—through a person. Because circuit breakers don't trip, faults in an ungrounded system are difficult to trace and often go undetected until major equipment damage occurs during a second fault. Because of these issues, some industrial plants in the 1930s began converting their electrical infrastructures to grounded systems.

Ungrounded, resistance grounded systems

Most reliable power system applications like Hospital and critical process industry shall opt for IT ungrounded system with high resistance grounding for continuous power system. All LV equipments voltage rating shall be rated 1KV for safety purpose and long life for insulations.

Ground fault detection shall be using overvoltage relays or XM-200 type relays from Schneider Electric. First ground fault has to be disconnected before the second ground fault using ground fault detection tools specially designed by OEMs.

Although the NEC requires the majority of electrical systems to be grounded, some are actually required to be ungrounded. There are only five different electrical power systems/subsystems noted in NEC Article 250.22 where the code committee has determined the hazards of grounding to outweigh safety benefits of grounding. One of these system types is an isolated power system, which is a distribution power system of limited size, typically for use in hospital operating rooms. These areas are required to have an ungrounded system because it would be considered unacceptable to have a power outage during a surgical procedure.

A typical isolated power system consists of a single-phase 10 kVA isolation transformer in which the secondary side remains ungrounded. The transformer's electrostatic shield is connected to ground and effectively shunts high-frequency noise to ground. The 120 V equipment connected to these systems will continue to operate after the first fault, just as in an ungrounded system. These power systems are particularly suitable for use in operating rooms where there may be water or fluids present and where a GFCI receptacle (required by the NEC in wet areas) would ordinarily be required to be installed. The installation of the isolated power panel is alarmed locally, so if there is a ground fault, the team will be notified, but any ongoing procedures needn't be interrupted.

During the 1970s, language was added to the NEC to require ground fault trip sensors to feeders 1,000 A and above on 480 V grounded electrical systems. The need for electrical service continuity for the industrial process sector drove the need for a hybrid system to combine the stability and safety benefits of the grounded system with the continuous service benefits of the ungrounded system. During this time, resistance grounded systems began gaining traction. Service continuity makes this type of grounding system very attractive today for the traditional pulp and paper industry as well as for high-tech data centers. An impedance grounded system incorporates the benefits of both the grounded and the ungrounded system. The IEEE Green Book identifies the following benefits:

Can Do!

Who We Are

Welcome to Gulf Industrial & Marine Services (GIMS), established in 2007, Catering to the fields like Oil, Gas, Chemical, Petrochemical and Utilities Industries, both onshore and offshore. GIMS is fully committed to safety, quality, environment and client satisfaction. Our Mission is to enhance our customer satisfaction through continual improvement of our business practices in terms of safety, quality, services, delivery per client expectations as well as the international expansion of our business operations.

What We Do

- Civil work & general contracting
- Industrial catering services
- IT & communication technology
- Electro mechanical (MEP)
- Facility management & operations
- Fleet & heavy equipments services
- Landscape & irrigation services
- Instrumentation & automation

GIMS
GULF INDUSTRIAL & MARINE SERVICES CO.

P.O. Box: 33157, Doha - Qatar, Tel: +974 4427 25 25, Fax: +974 4427 26 26,
e-mail: Info@gims.me, www.gims.me

Reduces burning and melting effects in faulted electrical equipment

Reduces mechanical stresses in faulted circuits and cables

Reduces electric-shock hazards caused by stray ground fault currents in the ground path

Reduces the arc blast or flash hazard

Reduces the momentary line-voltage dip caused by a fault and the subsequent clearing

Controls transient overvoltages and prevents circuit shutdown on the first ground fault.

Impedance grounded systems include high resistance ground (HRG) and low resistance ground (LRG) configurations. For a wye-connected transformer, Figure 5 demonstrates how a known resistance is matched to the facility load profile and inserted directly between the secondary of the service transformer and ground. To accomplish this with a delta secondary transformer, an artificial neutral must be created using a zigzag transformer.

In a wye connected HRG system, intermittent faults that cause so much trouble in ungrounded systems will be eliminated by the neutral system ground resistor because its insertion limits the total current flow to ground.

System continuity is maintained because, although ground fault alarms occur, the overcurrent devices do not operate. This current flow in a low-voltage system (400 V to 600V) will be limited typically to 10 A so that the fault can be located and then repaired at a scheduled time without exposing staff to hazardous fault levels (see Figure 6). While HRG systems are a good fit for large data centers, there are pitfalls, such as misapplication of surge protective devices (they must be rated for ungrounded-neutral circuits), and the UPS must be grounded in a compatible method to its input and output wiring. Tracing faults is somewhat difficult and must be accomplished on live circuits using circuit pulsers.

LRG-grounded systems are typically used for 15 kV medium-voltage applications where the charging current may be too high to match an HRG.

LRG systems tend to operate more similarly to the solidly grounded system than the ungrounded system. In this case, the added resistor limits the fault currents between 200 A and 400 A, which is too high to allow continuous operation during a fault. Therefore, ground fault detection equipment must be set to trip as quickly as possible on detection. The advantage of controlling the current is that improved selectivity between overcurrent protective devices in the system may be achieved. It is interesting to note that through the 1999 code cycle, impedance/resistance grounded systems were in the same article as the ungrounded systems because of their operating similarities.

Conclusion

The NEC provides the framework for applying grounded and ungrounded systems. Table 1 summarizes the benefits and drawbacks of these different grounding systems as organized by the NEC. In a facility with a predominant need for line to ground loads, the NEC clearly requires a solidly grounded system. The solidly grounded system is the simplest and the cheapest to implement in the field. It is typically found in commercial buildings of today. In contrast, if a facility only has 3-phase loads and terminating its internal processes is deemed to be too heavy a risk, then an ungrounded system has definite merits. There is a middle ground, however, where service continuity is required, and the benefits of isolating and locating a fault for added safety are required. In these situations, one might consider an HRG system that has a proven track record for use in industrial process plants as well as large data center designs. The HRG system provides a single-point ground system for the facility. However, if and when there is a ground fault, the fault won't cause downtime.

NEC Article 250 has remained largely unchanged over the years, with a few punctuated changes in the 1940s and 1970s. Much credit must be given to the original code committee members for understanding the fundamentals and safety benefits of system grounding. Although grounding is often viewed as being mysterious, adhering to the code will safeguard occupants and facility equipment

IEI President and SDG Visited Dr. Nabeel Al Salem at Qatar Foundation

Hon. Chairman With Dean of Qatar University

Technical Seminar by Jotun Paints on 26.10.2018

Why should citizens directly fund inventions with at least one percent of their assets!

By Praveen Vettiyattil, February 27, 2020

Short answer is that inventions are like babies. They need a lot of personal attention and incubation that governments and big organizations normally aren't capable of providing for a long enough duration. Remember, no world changing invention has ever come out of a government owned laboratory during peace time. Now, for the long answer.

Because you can become super rich even by investing a small amount of money on inventions. A great invention doesn't need a great fortune. The world's first paper clip was made by twisting a used electric wire. How much does three inches of a used electric wire cost? Zero.

At every stage of a progressing mass market invention, it only needs just enough funds to reach the next stage. Once the invention reaches the next stage, it would automatically be much more attractive to investors and customers than the previous stage. After the invention reaches the proof of concept (POC) prototype stage, it will develop its own traction to move ahead for commercialization. Fund raising for an invention is most difficult when the invention is between the idea stage and the prototype stage. It's here where citizens should show the courage to grab the opportunity to fund a great product that's about to change the world. Nothing gives higher returns to investors than money invested in inventions and new technologies as seen below.

Name of Inventor	Description of inventions	Net worth of inventor in today's dollars
George De Mestral	Velcro	$148 million
Gary Michelson	Spinal implants, instruments and processes	$1.7 billion
Benjamin Franklin	Lightning rod, Bifocal glasses, Urinary Catheter	$10 billion
James Dyson	Vacuum cleane	$13.9 billion
Henry Ford	Quadricycle, Assembly Line mass production of cars	$200 billion

Because of moral obligation: In 1800, average global life expectancy was only about 30 years. Today, because of scientific revolution, global life expectancy is about 70 years. Thus inventions have more than doubled our life span. Thus what we owe to our parents and society for giving us a life span of 30 years during 1800s, we owe to inventions for giving us another 40 years plus, that too of much better quality than the 30 years of 1800s.

Because it makes you jump out of bed when the alarm bell rings in the morning: Most of us have difficulty waking up when the alarm rings in the morning. It's because most of us do mundane jobs or our jobs aren't intellectually exciting enough or we don't like the method of education in schools. Every invention that's being prototyped, progresses every week in a little but exciting and slightly unpredictable way. This feels like watching an Olympics match that your family member plays. It's nail biting in a positive way. When the alarm rings at 6 in the morning, you don't feel a good morning, you feel a great morning because your are back to life fully conscious that you are part of a team making a world changing invention. How can anything feel better than this? It's a waste to live a life without experiencing this bliss.

Because it gives you a life of pride and contentment: Every major invention creates hundreds of factories and millions of permanent and positive jobs. It is said that invention of the automobile by Karl Benz, directly or indirectly created 20 percent of all of today's jobs globally. Knowing that you are giving back to society, helping millions by creating jobs resulting in permanent prosperity and peace in the world is a great source of pride and contentment. People having an abnormally great purpose in life and something great to look up to, are known to live healthier, happier and longer.

Because funding inventions are actually the safest investment, if done properly: People wrongly think funding inventions are highly risky. Actually the opposite is true. Not having inventions for a long time is highly risky because it would eventually saturate markets for existing non consumable products/services, result in economic slowdowns because of decline in sales that could lead to global trade barriers/disputes and even war. There was economic recession/panic or stock market crash in the United States in 1901, 1902-1904, 1907, 1910-1911, before first world war and in 1923-1924, 1926-1927, 1929-1933, 1937-1938 , before second world war.

In a world of single headed spanners, is there any risk in funding the first double headed spanner? All complicated looking inventions could be broken down to several segments, with uncertainty in some segments. But for the expert in each segment, there is no uncertainty in the outcome of his/her segment. Thus if investments in inventions fail, it's not because funding inventions are risky, it's because the investor consulted the wrong 'expert' or chose to fund an invention that doesn't have a big enough market size. Investments in real estate, construction, entertainment, stock market and many other domains could crash in the event of wars, global disputes or natural calamities. Not so for inventions.

Millions of people using bicycles would create and sustain millions of jobs in the bicycle and spare parts manufacturing industry, whether there is war or not.

Because even if you lose one percent of your assets, it wouldn't affect your living standards: It's very difficult to imagine the outcome of a properly researched engineering experiment becoming absolutely useless. Even if the experiment fails to achieve the predicted outcome, the learning from the experiment could increase the chances of reaching the intended outcome in the near future. Remember Edison's famous statement that failure of hundreds of materials he used as filaments, was the only way to reach tungsten and thus he doesn't consider all the burnt out candidate filament materials as failure. Assuming that the invention you funded, in the worst case scenario, didn't give you the expected outcome in the expected time span, loss of one percent assets don't change your living standards and you can still live with pride of doing your duty and die with the hope that somebody in future will make use of the learning from the experiments you funded, to create an even bigger invention. This is the history of all inventions. All inventors who succeeded could succeed only because they learnt from the outcomes of past experiments. If done right, there are no failures.

Because it gives you a positive addiction: The older, more informed and experienced a person gets, greater is his/her need for meaning and intensity. People who are unable to achieve such meaning and intensity get bored or depressed or resort to addictions like alcohol, smoking, drugs etc, to get that kick feeling, even if it destroys their health. Nothing gives a better kick than observing an a high impact invention quickly evolving from idea to prototype to a mass market product. When you are actively involved in promoting an invention either as an investor or as an inventor, you simply don't have time for stupidity, mediocrity, gossip, office politics or bad habits that are detrimental for your health.

Comparing major inventions in a 20 year period from 1876 to 1895 and 2000 to 2019

Below mentioned are 10 major inventions made in a 20 year period from 1876 to 1895

Year	Invention	Inventor/s
1876	Telephone	Alexander Graham Bell, Elisha Gray, others
1876	Petrol engine	Nikolaus August Otto
1877	Refrigerator	Carl Von Linde
1877	Phonograph(record player)	Thomas Alva Edison
1879	Incandescent light bulb	Thomas Alva Edison, others
1884	Punch Card Tabulation (first semi automated data processing, first ancestor of computer)	Herman Hollerith, known as father of machine data processing
1885	Automobile	Karl Benz
1887	Induction motor	Nikola Tesla
1894	Diesel Engine	Rudolph Diesel
1895	X-ray	Wilhelm Rontgen

Since the average Gross World Product (GWP) for the period 1876 to 1895 was approximately $800 billion and the average GWP for the period 2000 to 2019 was approximately $60 trillion and given the fact that the world has spent much higher percent of its GWP on R&D in the later period than the earlier period, it could be safely assumed that the world spent at least 100 times more money on R&D during the period 2000 to 2019 as compared to the R&D spending for the period 1876 to 1895. Thus proportionally speaking there should be about 1000 major inventions during the period 2000 to 2019, that are comparable to the above ten inventions. What are these 1000 world changing inventions, if they exist?, who are those 1000 plus inventors who are supposed to be household names by now? Of course about a million patents were granted in 2019 globally, but I am not able to see a single major invention invented during the period 2000 to 2019, that has impacted the world, created new industries and markets as the above ten inventions.

I am not able to see any report online of governments giving money directly to the above inventors for developing their inventions at the idea stage or at the POC prototype stage. However it's known that almost all of the above ten inventions were given patient capital by citizens like you and me, not for charity, but for profit, as mentioned in the last paragraph of this article.

Ending comments: Fellow citizens, if you want to give more than what you took from this world, the time to act is now. Ask your relatives, friends, classmates, professors, neighbours of anybody working on an invention that could solve a mass market pain point. If you can't find good inventions, wait

till you find one that is a WORLD's FIRST and has mass market potential. Announce through newspaper advertisements and social media that you (and your friends) are willing to fund high impact inventions. Mail your offer to top 200 engineering colleges/research institutes and ask the principal/dean to publish your offer on college notice boards. Meet the inventors, study the inventions being developed, consult experts, set a deadline (30 days, say) and put in the money on the best invention, be patient and wait for the wonder to happen in a few years.

If inventors, citizens and private companies could come together to successfully fund and develop ten world changing inventions, at a time when the world was about 75 times poorer than today, why can't we do it now?

Bertha Benz, wife of Karl Benz funded R&D of the world's first automobile. Elisha Gray's first telephone prototype was funded by Samuel S White, a dentist in Philadelphia

Pennsylvania based engineer, George Westinghouse funded development of the world's first induction motor by Nikola Tesla. Eugen Langen, whose father was a sugar industrialist funded Nikolaus Otto's R&D on internal combustion engines. In 1998, Andy Bechtolsheim became the first investor of Google when he wrote a check for $100,000 during his first meeting with the founders, Larry Page and Sergey Brin, that lasted only 30 minutes. By 2010, this $100,000 investment became $1.7 billion, an increase by 17,000 times in just 12 years.

Your turn.

About the author: Praveen Vettiyattil is himself an inventor, engineer, public speaker and CEO of YCI Technologies Private Limited, Thrissur, Kerala, India. He holds a masters degree in engineering from a leading American university and could be reached at vettiyat@yahoo.com. You can read more about him on the link www.youcaninvent.org or google 'You Can Invent'.

66

The best brains of the nations can be found on the last benches of the classrooms.

99

The Institution of Engineers (India)

Qatar Chapter

H.E. SHRI. P. KUMARAN
Ambassador of India
PATRON
The Institution of Engineers (India), Qatar Chapter

Executive Committee (2018-2020)

ER. ABDUL SATHAR FIE
Honorary Chairman
BSc, MIETE, MIEEE, M.A, MBA, PGDPM, C.Eng
F-1235792
Mob: 55873526
E-: sathar@gmail.com

DR. ABDUL HAMEED PATHIYIL FIE
Honorary Secretary
B.Tech, MIT, MBA, F.I.E, C.Eng, PhD
F-120767-5
Mob: 55391148
E-: ahameed_p@hotmail.com

ER . SANJAY JAIN MIE
Honorary Treasurer
B.E. M.I.E, PMP, ACIArb
M-151959-4
Mob: 55593688
E-:sanjayj@keoic.com

ER. SEENU. PILLAI FIE
Honorary Advisor
B.E, M.I.E , LEED AP BD+C, QSAS CGP
M-135100-6
Mob.: 5562 6509
E-: seeenrajan@yahoo.co.in

ER. DURAI MANIVANNAN MIE
Honorary Joint Secretary
B.E. (Ag.), M.Tech., M.I.E
M-130376-1
Mob: 70557900
E-: mdmanivannan@yahoo.com

ER. SHYAM SUNDAR MIE
Honorary Joint Secretary
M.Eng, (Ph.D), AMIE, C.Eng(I), MASCE, S.E
AM 1226072
Mob: 55453106
E-: dg@shyams.com

Ex-Officio Members

Er. Aniruddha Kulkarni FIE
(Immediate Past Chairman)
B.E, M.E., FIE
Mob.: 50720823
E-: aniruddhask@yahoo.com

Er. Dipak Dahake FIE
(Immediate Past Secretary)
B.E., F.I.W.W.A, F.I.E, P.M.P., C. Eng.
F- 1236268
Mob: 55949031
E-: dipak.dahake@gmail.com

Er. Venu Madhav MIE
(Immediate Past Treasurer)
M. Tech, B.E, PGDM, MIE, C.Engg
M-135101-4
Mob: 77027027
E-: venumdhal@gmail.com

Executive Committee Members

Er. Syed Raziulla MIE
(Exe. Committee Member)
B.E, M.I.E, C. Eng.
M-134458-1
Mob: 55648386
E-: raziullasyed@hotmail.com

Er. Salihudeen K.M. FIE
(Exe. Committee Member)
B.Tech, MBA, FIE, C.Eng
F-1153583
Mob: 55569233
E-: msalihudeen@yahoo.com

Er. Sajeet E George MIE
(Exe. Committee Member)
B.E., M.I.E., C.Eng(1), PMP, ACIArb
M-151958-6
Mob: 55894863
E-: sajeetgeorge@hotmail.com

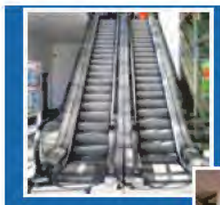
Er. Maheshwaran. T. MIE
(Exe. Committee Member)
B.E. , PGDIPMM, PMP, M.I.E
Mob: 55221923
E-: maheshvelu@gmail.com

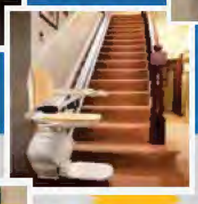
Er. Ashik Koorimannil MIE
(Exe. Committee Member)
B.Tech, D.I.M., M.I.E, C.Engg., P.E
M-144432-2
Mob: 77675860
E-ashikkoorimannil@gmail.com

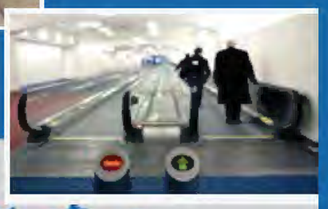
Er. Sunil Kulkarni FIE
(Exe. Committee Member)
B.E. Civil Engg, FIE, CEng (India)
F-123689-6
Mob: 66720976
E-: sunilight@gmail.com

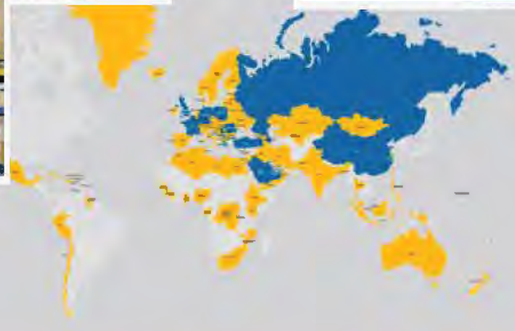
Er. Anand M Nadgir MIE
(Exe. Committee Member)
BE (Electrical),PG Dip (Sales)
M-1603382
Mob: 66754216
E-: anands47@yahoo.com

Er. Ajay Kumar Singh FIE
(Exe. Committee Member)
B.E.Civil, FIE, C.Engg, Dip.in QA & LA of ISOs, Nebosh-IGC
F-113035-4
Mob: 50484650
E-:aksingh1965@rediffmail.com









KLEEMANN™
LIFTS

Since 1974, Darwish Elevator Co. (DEC) is in the forefront of LIFT industry and over the years it expanded it business all across the segments of construction, villas, palaces, hyper markets, high rise buildings and entertainment with advance technologies.

Darwish Elevators Company's line of activities includes Trading, Installation and Commissioning of Elevators, Escalators and Travelators that covers the whole spectrum of market requirements.

Advantages:

40+ years of Experience in Qatar Market.
3000+ lifts installed in Qatar.
Part of all major landmark projects in Qatar.
Service of all major brands of Elevators & Escaiators.

Support:

Darwish Elevators provides high-quality, fully customizable, innovatively designed products with a trusted performance assurance.

24 x 7 Technical support Team.

Kleemann Trained Technicians .

Service @ the remotest place in state of Qatar.

Support & Guidance at every stage of Installation

Dedicated warehouse with equipments & spareparts.

Experienced Technical staff for all types of Elevators & Escalators.

Solutions:

KLEEMANN is a world leader for all types of passenger and freight lifts.

MR & MRL Solutions
Freight Solutions
Parking Systems
Stairlift Systems
High Rise Solutions
Escalators & Moving Walks

Special Solutions Unique / Fully Certified products

Reduced Pit / Headroom Solutions Ideal for existing buildings

شركة الدروش للمصاعد
DARWISH ELEVATORS CO. W.L.L.

Tel. : +974 44567382 Fax : +974 44567301 Doha - Qatar
e-mail :elevator@darwish.com.qa www.darwish-elev.qa

Centenary International Engineering Congress

CIEC Advisors

Er. VIKASH SANANDA
Head of Marketing & Outreach, QFRDI

ADV (DR.) NIZAR KOCHERY
CEO, Kochery & Partners LLP

DR. MOHAMMED MAQBOOL FIE
Quality manager, Qatar University

Working Committee

Er. AFSAR PASHA FIE

Er. SRI RAJA VIJAYAN BABURAJ

Er. SAMIR PAWASKAR MIE

Er. SALIM SHA FIE

Er. JABIR JALAL

Er. ABDUL ZAMEER FIE

Er. NIZAMUDEEN MIE

Er. AFROS ALAM FIE

Er. SREEJIMON MIE

Er. BASUDEV KSHATRI FIE

Er. SHAHWAZ MIE

Er. JAZIB

Er. SHAHINI

Er. MD MOBASSHIR MIE

Er. AMIT GAMBHIR

Er. SINTO GEORGE MIE

Er. SIYAM HAKKIM

Er. ABDUL FATHAH MK

Er. PALANI GOPALAN

Er. AZEEM SALAHUDEN

Er. ABDU SHAKOOR

Er. SABEENA M K

Er. YOOSAF FIE

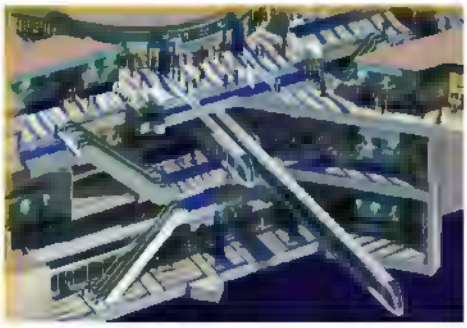
Er. MEENU CHAUHAN

Er. SAFIYA JAN

METRO STATION DESIGN-MEP ENGINEERS COMBAT FOR SPACE: BIM RESCUE

Abdul Zameer Ahamed
Sab-BEng, MBA,-FIE,CEng(UK),CEng(I),CMEng-NZ,MASPE

A Metro Station building is a unique structure with Underground Metro Station/Above ground/At Grade, Interchange Station/Transfer Station, Tunnel: Single / Dual type and Buildings-Stabling yard, Inspection & Light Maintenance sheds, OCC.



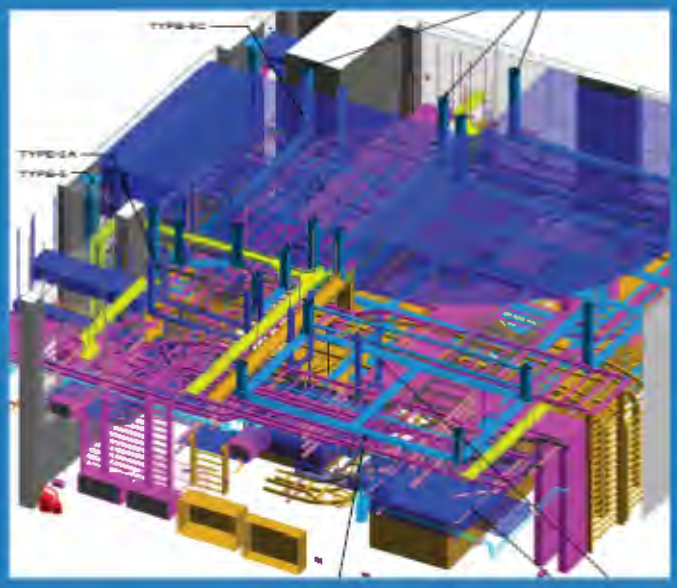
For any Metro Station building design, call it a Building Services design or MEP (Mechanical, Electrical & Plumbing), they play an essential role in operation and of functioning of buildings to intended use. As design-engineers, experience the challenges due to space constraints because of the size, quantity and sophistication in MEP.

Most of the MEP systems require three types of space requirements-Space for Installation, Space for Maintenance & Space for future replacement. So what'sthe main problem with providing adequate space? Simple answer is Budget and Limitations. MEP Space means costly civil work such as M&E Plant rooms, Shafts and Voids leading to increase in building height and area. More Steel and Concrete. In Metro Stations, MEP space means taking away valuable functional & commercial areas. Therefore Clients & Consultants demand such spaces to kept to a minimum because such spaces do not bring ROI. There are several reasons to why MEP space availability becomes a combat/war with Architects & other discipline Engineers.

1- Design Allowances:
It is a general issue, that spaces are finalized at a very early stage during conceptual design based on Rules of Thumb for Equipment & Systems Sizing. Requesting for more space at later stages can lead to escalation, redesign and increase in budget. All can lead to client resistance & mistrust of the design team.

2- Redundancy in Equip. & Systems:
This is a requirement to increase size and/or capacity that varies up to 30 % usually added on equipment and systems that allows changes to buildings size or usage without the need for major changes to MEP services. In theory, it sounds great. The result is bigger equipment, which takes up a space.

The other reasons may include the Interior Design & Finishes, FF&E, and restricted Installations etc.
Solution: The answers is that each member of the design & construction team have a major role to play. Therefore, BIM is the solution for reducing the impact of space. Design & Build contracts must ensure allactivities are directed in BIM environment. The 3D models created through BIM helps in Understanding every detail during Construction phase. CSD models provides all the placement of services in chronological order without any clashes. BIM models help the engineers and project consultants to check possible interference, resulting in better project planning & space allocations. BIM benefits design team through accuracy, data integration, quality & increased productivity.



The Future of Coordination is BIM 360, a cloud computing technology. It will help the Site Engineers/-Professionals to access the drawings on site with ease through the hand held devices such as note pad, iPad etc. BIM helps the Engineers after Construction as well for preparing of Snags-Mark ups, clashes & coordination of services.

Personal Achievements in 2020 during Pandemic:

Lean Construction Certificate receiving from H.E.Dr.Eng.Saad Al Muhannadi, President of ASHGHAL(PWA).

Railways RAMS_Functional Safety Engineer Certification from TUV SUD, South Asia

Chartered Engineer from Engineering NewZealand

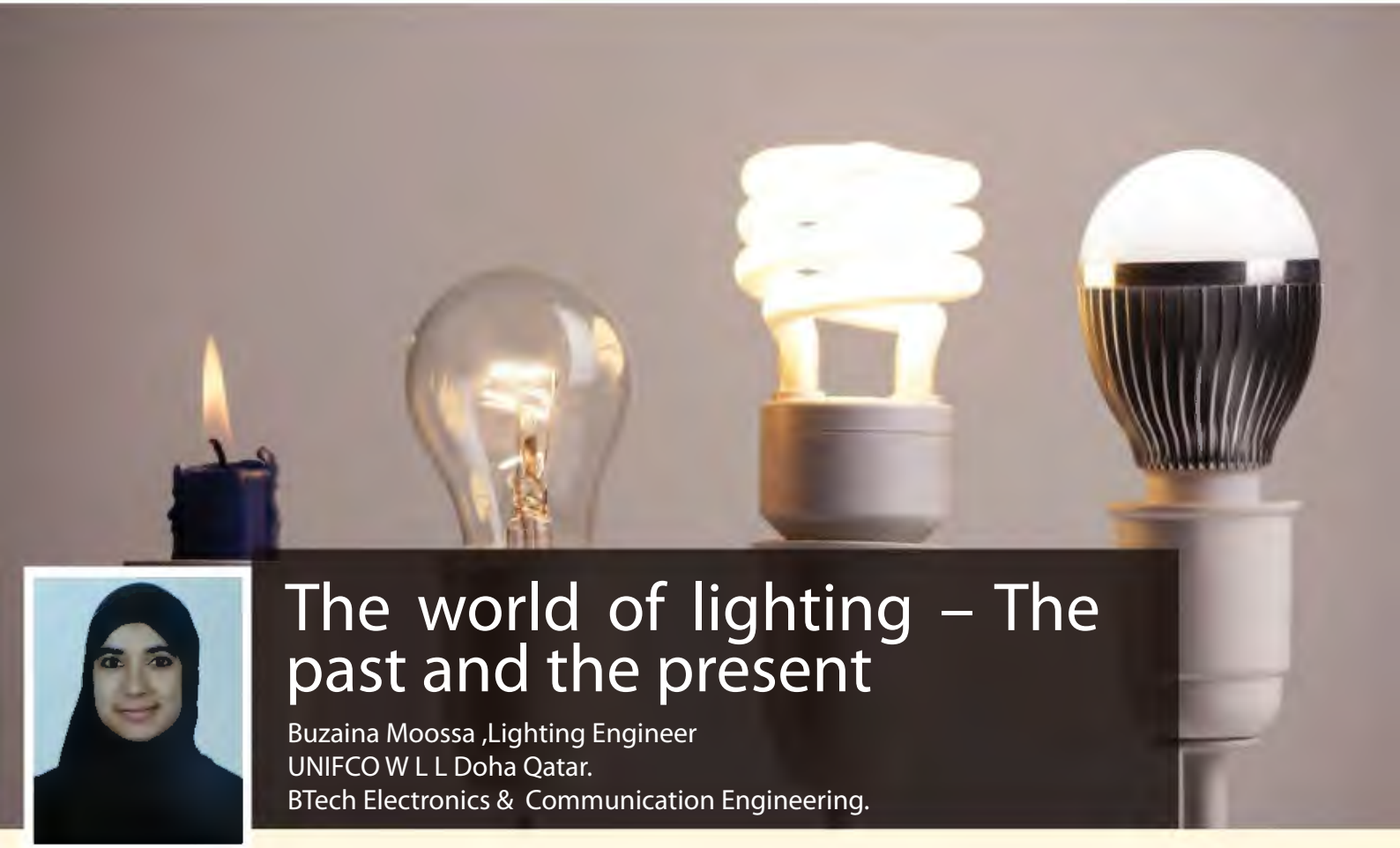
Abdul Zameer Ahamed Sab CMEngNZ

IPRA (International Professional Registration Advisor) for IET

52nd Engineers Day 2019, Theme Seminar "Engineering for Change"

Technical Seminar on 52nd Engineers Day

Sir Sayyed Day Celebration



The world of lighting – The past and the present

Buzaina Moossa ,Lighting Engineer
UNIFCO W L L Doha Qatar.
BTech Electronics & Communication Engineering.

Light is the form of energy which enables us to see the world around us. Visible light which we see is only a small portion of the electromagnetic spectrum which includes others like radio waves, micro waves, infra-red, visible, ultra violet, x- ray and gamma rays.

On earth, the most important and the most vital source of light is the Sun. The sun produces light by the atomic reactions taking place in it which release a huge amount of energy, which is radiated in all directions. A part of this radiation reaches earth as light and heat which we know as sunlight. It was the only form of lighting known for the world in ancient times.

The earlier light sources

The invention of fire paved out ways for providing illumination during the dark nights, provided the warmth against cold, and also protection from the animals during the early periods of human development. The first records of fire-making appear in the Neolithic period, about 10,000 years ago and fossils suggest Neolithic man carried flints, pyrite, and dry powdery fungus for tinder to make fire. Oils began to be used around 4500 years ago in Ur, Mesopotamia. The evidence of candles dates back to the Roman times, around 1st century AD. There occurred developments in the type of material used for making the candles and paraffin was invented in 1860 which made the candle to be cheap. The world then saw gas lighting which used coal gas and in parallel there was the use of kerosene which was initially distilled from coal and used for lighting purposes. Kerosene still continues to be used as a light source in many developing countries. Arc lighting was the next in line with the method of producing light by electric arc between carbon between rods of carbon. Both gas lighting and arc lighting rose and fell in the 19th century. The invention of incandescent bulb by Thomas Alva Edison changed the way humanity saw light. This first lamp had a filament, a term which was first used by Edison, which produced white-heat. After much experimentation, Edison settled on filaments made from bamboo for the commercial version of his lamp. Between 1880 and 1920, incandescent lamps were significantly improved by new technologies that made them more efficient.

Some important terminologies related to Lighting:

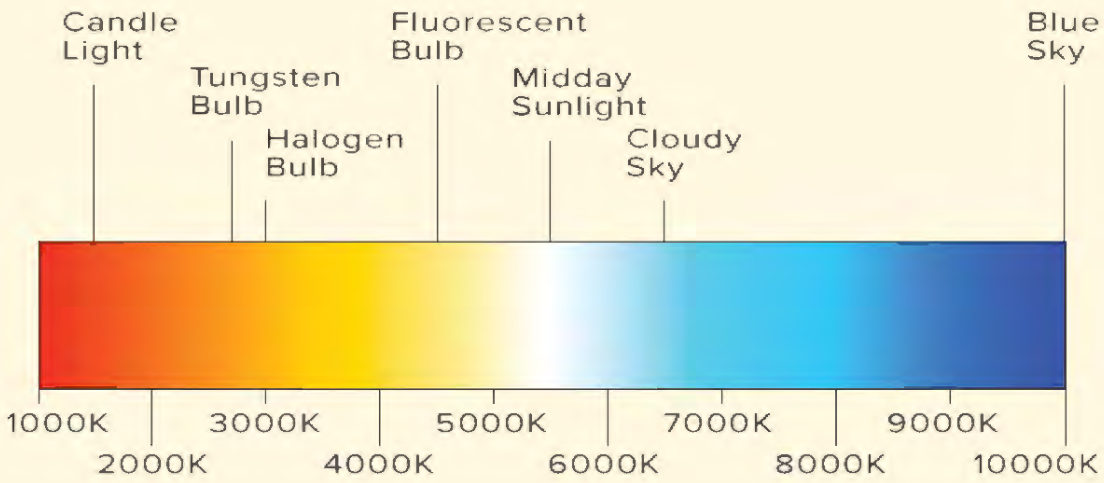
Luminous intensity (Candela): Luminous intensity is a measurement the light radiating from the lamp in a particular direction, disregarding the intensity of light in other directions.

Luminous Flux (Lumens): The perceived total amount of useful light from a source is the sum of the Candela measurements in all directions. It is measured in Lumens (lm).

Illuminance (Lux): The perceived brightness of the light falling on a surface illuminated by the lamp and is measured in Lumens per square metre or its equivalent, Lux. Illumination values will decrease with distance from the lamp and are not generally useful in describing lamp performance unless a distance is quoted.

Luminous Efficiency (Lumens per Watt): This is a measure of how much total effective light in all directions (Lumens) is produced per Watt of electrical power consumed.

Correlated Colour Temperature (CCT): The colour output of a lamp/luminaire expressed in reference to a black body temperature on a Kelvin scale, where typically a cool white colour corresponds to 6000K, warm white colour corresponds to 3000K and so on.



The incandescent bulb had a very low luminous efficiency of typically 1-4% with the large part of electricity being converted to heat rather than light. This led to other forms of lighting such as the fluorescent lamps in which mercury vapours were excited by the electric current which caused lamps to glow by fluorescence.

The present technology- LEDs

LEDs are the latest updation to the lighting industry. Though they were developed in 1950s and were in use, it was in 1994 that Prof Shuji Nakamura invented the ultra-bright blue LED using the semiconductor compound Gallium Nitride. This revolutionised the lighting industry, and Shuji Nakamura was awarded the Nobel prize for his invention. The blue LED along with yellow phosphor, produced the world's first white LEDs which is in use today. The LEDs are very efficient, the latest research has shown power efficiency of 200lm/W and research still continues to increase the efficiency of LEDs.

A comparison table can be drawn to point to the power efficiency and lifetime for LEDs with other lighting technologies.

Technology	Incandescent	Halogen	CFL	LED
Image				
Power	40W	29W	11W	9W
Lumen per Watt/Efficiency	20	28	73	89
Percentage higher than Incandescent	NA	27	72	88
Lifetime	1000 hours	3000 hours	10000 hours	30000 hours

LEDs are the present of lighting industry and they are now available in all sizes, shapes and forms to conform to the requirement of all lighting needs, be it indoor or outdoor, or architectural or decorative applications. The LED systems are combined with more energy saving methods and used in conjunction with suitable dimmers, controllers and automation systems, which makes it even more efficient. Many construction projects now require all lighting installations to be in LED and be used with these controlling systems so as to be deemed green buildings. Technology has advanced at a very rapid rate and now, we have the Li-Fi system, where LED lamps are used to transit other signals or put another way, they serve as communication channels. The LED technology is still growing increasing efficiency, bringing out new luminaires to meet the demands of the world ahead.

MAVERICKS 365

JOIN GLOBAL INNOVATION PLATFORM AND QATAR'S PREMIER ENTREPRENEURSHIP NETWORK

Mailus@: info@mavericks365.com

LAUNCH. SCALE. ACCELERATE.

FOLLOW US:

/MAVERICKS365GLOBAL

/COMPANY/MAVERICKS365

/MAVERICKS365

WWW.MAVERICKS365.COM

2020 Energy Conservation

IEI Technical Webinar

July 10, 2020 (Friday)

5:00pm - 6:30pm

Technology for Education Opportunities and Challenges

The Institution of Engineers (India)

QATAR CHAPTER

Qatar Chapter Under the aegis of Embassy of India

(Licensed with Qatar Financial Centre (QFC): Reg#00671)

FEIAP

Under the aegis of FEIAP ICT

Organised by IEI Qatar Chapter - Womens Wing

CHIEF GUEST

Er. Narendra Singh

President,
IEI & CHAIR
FEIAP-ICT

GUEST OF HONOUR

Dr. K P Fabian

Former Indian
Ambassador to Qatar
Former Patron of
IEI Qatar Chapter

GUEST OF HONOUR

Er. Ahmed Jolo

Former Chairman,
Qatari Society of Engineers
President, Arab Engineers Forum

SPEAKER 1

Er. Muneera AlShriem

Sr.Senior Electrical Engineer
& Project Lead, United
Development Company

SPEAKER 2

Dr. Mita Tarafder

Chief Scientist,
Head, Knowledge Resource and
Information Technology Division
CSIR - National Metallurgical
Laboratory

Er. Sabeena M K
MIE, M.Tech

President
IEI Qatar-Women's Wing
Motivational Speaker

TO REGISTER :

https://ieiseminarjuly.eventbrite.com

Meeting ID: 948 3047 7462

Password: IEIQatar

INTELLECTUAL PROPERTY RIGHTS FOR ENGINEERS

Engineer Ajay Kumar Singh.

B.E. Civil, FIE, Dip.-Q.A. L.A. (ISO 9001, 14001 & 45001), Nebosh-IGC

What is 'intellectual property' and 'intellectual property rights'?

Over the past few years, the concepts of intellectual property ('IP') and intellectual property rights ('IPR') have gained traction owing to their crucial role in promoting innovation, knowledge, and economic progress.

Simply put, IP refers to all such intangible property that results from the application of human intellect. Creations of the mind such as inventions, literary and artistic works, proprietary symbols and names, industrial designs, trade secrets, etc. are examples of IP. The legal rights that are acquired in relation to IP are commonly referred to as IPR.

Why is intellectual property important for engineers?

In the field of engineering, IP is of significant relevance since engineers are at the forefront of activities that involve creation of new materials, designs, products and processes.

Benefits of IP for Engineers

It prevents misappropriation, theft, and unauthorized reproduction of an engineer's work.

It allows engineers to commercially exploit their work by selling or licensing it in an efficient manner.

It provides economic incentives for engineers to either create new works or improve existing works.

It enhances the market reputation, goodwill and brand value of engineering firms.

Which intellectual property is suitable for my purpose?

Patent (for inventions)

- Meaning: An exclusive right granted for invention of product/process that provides a new way of doing something, or offers a new technical solution to a problem.
- Protection: It prevents inventions from being commercially made, used, distributed or sold without owner's consent.
- Duration: Generally 20 years.
- Requirements for protection: (a) Novelty - The invention must not been publicly disclosed; (b) Inventive Step - The invention must not be obvious to someone skilled in the field to which it relates; (c) Industrial Application - It must be possible to use the invention in a practical way.
- Examples: Electric Lighting (patents held by Edison and Swan), Sewing Machines (patents held by Howe and Singer), Magnetic Resonance Imaging (MRI) (patents held by Damadian) and iPhone (patents held by Apple).

IEI Technical Webinar

July 10, 2020 (Friday)

5:00pm - 6:30pm

Technology for Education Opportunities and Challenges

The Institution of Engineers (India)

QATAR CHAPTER

Qatar Chapter Under the aegis of Embassy of India

(Licensed with Qatar Financial Centre (QFC): Reg#00671)

FEIAP

Under the aegis of FEIAP ICT

Organised by IEI Qatar Chapter - Womens Wing

CHIEF GUEST

Er. Narendra Singh

President,
IEI & CHAIR
FEIAP-ICT

GUEST OF HONOUR

Dr. K P Fabian

Former Indian
Ambassador to Qatar
Former Patron of
IEI Qatar Chapter

GUEST OF HONOUR

Er. Ahmed Jolo

Former Chairman,
Qatari Society of Engineers
President, Arab Engineers Forum

SPEAKER 1

Er. Muneera AlShriem

Sr.Senior Electrical Engineer
& Project Lead, United
Development Company

SPEAKER 2

Dr. Mita Tarafder

Chief Scientist,
Head, Knowledge Resource and
Information Technology Division
CSIR - National Metallurgical
Laboratory

Er. Sabeena M K
MIE, M.Tech

President
IEI Qatar-Women's Wing
Motivational Speaker

TO REGISTER :

https://ieiseminarjuly.eventbrite.com

Meeting ID: 948 3047 7462

Password: IEIQatar

The Institution of Engineers (India)
QATAR CHAPTER
Qatar Chapter Under the aegis of Embassy of India
(Licensed with Qatar Financial Centre (QFC) Reg#00671)
Organised by IEI Qatar Chapter - Womens Wing

FEIAP
Under the aegis of FEIAP ICT

axis colleges

Celebrating
53rd Engineer's Day

"Engineers for a Self-Reliant India"

15th September, 2020
04:00PM Onwards

Chief Guest
Mr. Abdul Sathar
Chairman
Institution of Engineers (India) -Qatar Chapter

Guest of Honor
Mr. Sudhir Sahoo
Secretary
Institution of Engineers (India) -Kuwait Chapter

GUEST SPEAKERS

Mr. Prafulla Pathak
Executive Director
MSEB Holding Co.

Dr. S.M.Ali
Director(Membership)
Institution of Engineers (India)

www.axiscolleges.in | Toll Free: 1800-3132-464

Thank you

The Institution of Engineers (India)
QATAR CHAPTER
Qatar Chapter Under the aegis of Embassy of India
(Licensed with Qatar Financial Centre (QFC): Reg#00671)

FEIAP
Under the aegis of FEIAP-ICT

Organised by IEI Qatar Chapter - Womens Wing

Copyright (for literary and artistic works)

•Meaning: It grants authors, artists and other creators with legal protection for their literary and artistic creations.

•Protection: It protects against acts done without consent of owner, such as copying, adaptation, distribution, reproduction, communication, performance, etc.

•Duration: Usually for 50 years from the year of death of author/creator.

•Requirements for protection: (a) No registration needed - Copyright comes into existence as soon as the work is recorded in physical form; (b) Originality - The work must have been created by author's own skill and not copied.

•Examples: In engineering, copyright grants protection to materials such as computer software, source codes, algorithms, databases, CAD files, design specifications, sketches, drawings, blueprints, photographs, instruction manuals, flow diagrams, models, plans etc.

Trademarks (for proprietary symbols and names)

•Meaning: It is a mark capable of distinguishing the goods or services of one enterprise from those of other enterprises. These marks may comprise a name, logo, symbol, product shape, combination of colours, etc.

•Protection: It ensures that the owners have the exclusive right to use their trademarks and prevents competitors from using identical/similar trademarks.

•Duration: The period of trademark protection varies from country to country, but it can be renewed indefinitely upon payment of fees.

•Requirements for protection: (a) Distinctiveness - It must be unique so that consumers can distinguish it from other trademarks; (b) Other conditions - It must not mislead/ deceive customers or violate public order/morality.

•Examples: Brand names such as Ford, Google, and IBM, along with their logos, are trademarks.

Industrial Designs (for appearance of goods)

•Meaning: It refers to the ornamental or aesthetic aspects of an article, consisting of 3D features, such as shape, or 2D features, such as patterns, lines or colour.

•Protection: The owner is assured exclusive protection against unauthorized copying or imitation of the design by third parties.

•Duration: It varies from country to country, but is usually at least 10 years.

•Requirements for protection: It must be original and non-functional. This means that an industrial design must be of an aesthetic nature, and any technical features of the article to which it is applied are not protected.

•Examples: Industrial designs are applied to a wide variety of industrial products: from technical and medical instruments to watches, jewellery and other luxury items; from house wares and electrical appliances to vehicles and architectural structures; from textile designs to leisure goods.

Trade Secrets (for confidential information of commercial importance)

•Meaning: It comprises of information that has economic value because it is not known by others, and which the owner takes reasonable measures to keep secret.

•Protection: Owners can protect trade secrets from competitors by using legal protections such as non-disclosure agreements (NDAs), and work-for-hire and non-compete clauses. Violation of such legal protections carries heavy financial penalties, thereby operating as a disincentive to reveal trade secrets.

•Duration: Trade secrets do not have any term of expiry - as long as the information covered by a trade secret remains secret, that information is protected from improper use by others.

•Example: Google's search algorithm is a popular example of trade secrets. Other examples include confidential client lists, business or marketing plans, cost and pricing information, etc.

Layout Designs of Integrated Circuits (for topography of microchips)

•Meaning: Integrated circuits (or "micro-chips") are electronic circuits in which components such as transistors, diodes and resistors have been assembled in a certain order on the surface of a thin semiconductor material. The layout design (or topography) of integrated circuits is protected under IP law.

•Protection: Once protected, the owner has exclusive right to prevent or stop others from commercially using the protected layout design.

•Duration: The protection is usually for minimum 10 years.

•Requirements: It must be original i.e. it must be the result of the creators' intellectual effort and not commonplace among creators of layout-designs and manufacturers of integrated circuits at the time of creation of design.

•Examples: Integrated circuits are essential elements for a wide range of electrical products, including articles of everyday use, such as watches, television sets, washing machines, and cars, as well as sophisticated computers, smart phones, and other digital devices.

The Institution of Engineers (India)
(Established 1920, Incorporated by Royal Charter 1935)
QATAR CHAPTER
(Under the aegis of Embassy of India)
Patron:- H.E. The Ambassador of India to Qatar
Email: ieqatar@gmail.com

ABB

Dear Fellow Engineers,

The Institution of Engineers (India) - **Qatar Chapter in association with ABB is pleased to invite you to attend the Online Seminar:-**

Topic of Seminar - "Non Invasive Temperature Measurement Technology"

Date & Time - Saturday, 2nd May 2020 @ 04:00 - 05.00 PM

Method of access - Online training on Microsoft Teams

Guest Speaker: - Dr.Guruprasad Sosale
Global Product Manager - Non Invasive and Wireless Technologies, ABB Automation GmbH, Germany.

You are kindly requested to confirm the attendance through the following Eventbrite link - https://iei-techtalk-april2020.eventbrite.com

A Division of Seashore Group

ADDING STRENGTH TO PROGRESS

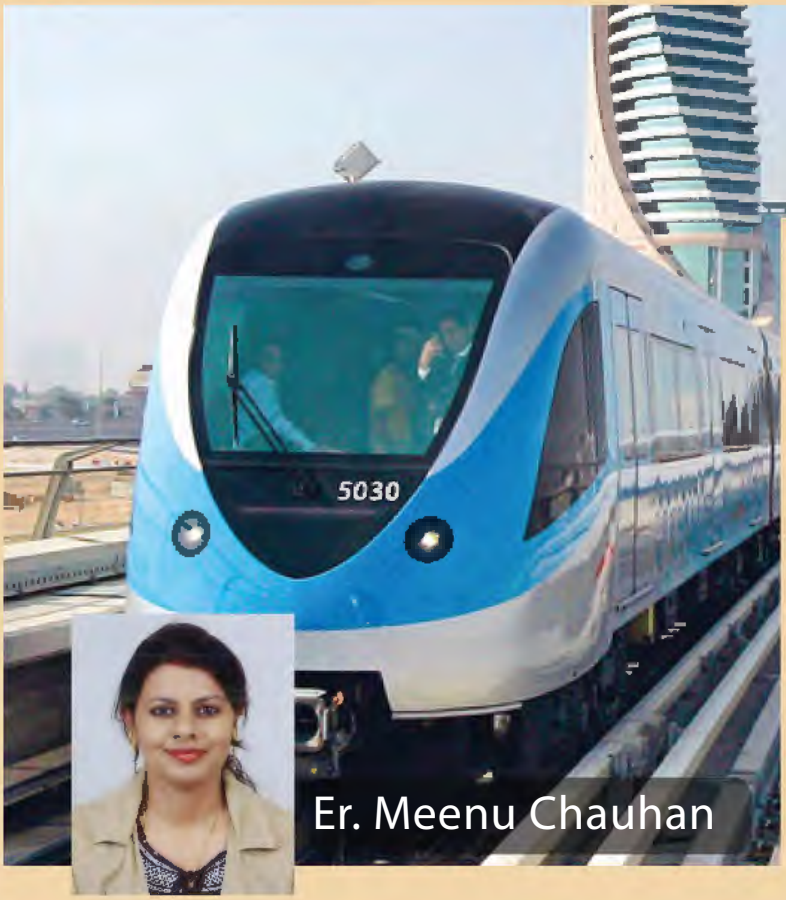
شاطئ البحر للحديد ذ.م.م

SEASHORE STEEL W.L.L.

An ISO 9001, 14001, 45001 & QGOS Certified Company

Contact : +974 44 36 1241 **Email** : mkd1@seashoresteel.com, info@seashoresteel.com

Address : Plot No: 8054, P.O Box:41100, New Industrial Area, Doha - **QATAR**



Er. Meenu Chauhan

The Middle East is endowed with worlds largest oil and gas resources; about 60% of world's proven resources of of oil and 30% of gas resources exist in this region. The middle east retain enormous mines and minerals resources with some of the most complicated and variable geological textiles, iron, copper, coal, cement and other minerals. Mass reservoirs of minerals resources, chemicals, agricultural and animal products, textiles, metals, foodstuff with ever increasing products of region, have all turned the Middle-east economy into a boosting economy where need of freight transport in particular rail transport as one of the cost effective and effective mode is deeply felt.

Many countries are experiencing large demographic shifts such as population growth. With youthful demographics, these states need better infrastructure to support employment and further economic development. Developing railway infrastructure is back on the agendas of governments across the GCC (The most prominent countries in the Middle East are the Arab Gulf states, which with the exception of Iraq, make up the Gulf Cooperation Council). There is a healthy and encouraging portfolio of ongoing and pipeline projects which, once completed, will have potentially significant and far reaching effects for individuals and commerce. Yet the true measure of success will only really be quantified not solely by reference to contractual milestones and economic indicators but by the projects' social impact and the positive legacies they leave for generations to come.

The Benefits

Despite the many challenges and complexities associated with developing rail projects, there are also potentially a number of far reaching, long term benefits. One obvious benefit of developing the rail infrastructure that enhanced railway links enable individuals, goods and services to be transported more easily and effectively both within and between GCC states. More efficient and cost effective transport for people, goods and services will contribute to developing tourism and commerce in the region, thus enhancing the region's economy.

The primary mode of freight transport is currently by vehicle, which can be slow, inefficient and expensive, as well as environmentally damaging. Use of rail will enable greater quantities to be transported within a shorter period of time and at less cost, facilitating more efficient trade. Railway hubs will require staff to operate and maintain the facilities. There will also be a need to service both staff working at and passengers travelling to, from or through such transport intersections, creating employment, retail and other investment opportunities. Developing rail transport in underdeveloped areas can act as a catalyst for regeneration, for example by connecting urban hubs with remote rural areas. If planners can ensure that they interconnect these regions with other transport services, such as airports, ports and other local transport infrastructure, this can help encourage inward investment and economic growth in such areas. The environmental benefits must also not be overlooked. Whereas presently the majority of passengers and freight are transported within and between GCC states by either road or air, rail investment will eventually enable a greater volume of people and goods to be transported in a single journey, reducing the amount of heavy vehicle traffic on roads and lowering the average carbon footprint per journey.

Transit projects take shape in cities across the GCC

United Arab Emirates: In Abu Dhabi, there are currently seven metro and light rail projects under construction. Abu Dhabi is planning to develop a 131km metro network, which includes underground sections totalling 18km. Two light rail lines are also planned along with a BRT system. Phase 1 is slated for completion in 2020 and will span 60km. Subsequent phases will add a further 70km. The project is expected to cost around $US 2bn.

Dubai is extending its metro Red Line by 18.5km along with two projects ahead of Expo 2020 in Jebel Al. A 20.6km Green Line extension is also planned for completion by 2020 along with the next phase of the Al Sufouh Tramway.

Saudi Arabia: The first section of Riyadh's metro system is expected to open this year. The network will comprise six driverless lines totalling 176km with 85 stations. Riyadh has seen exponential population growth over the last three decades and is expected togrow to 8 million people in the next 10 years. The system will be a fundamental pillar of the acity's transport network. The city of Jeddah is planning four metro and five light rail lines. Construction is expected to begin on the first phase of the 149.5km metro network this year.

Qatar: The capital Doha began construction of the first phase of its metro network in 2012. The initial sections of the Red, Green and Gold lines completed by 2020. The network will ultimately consist of four lines with an overall length of 300km and 100 stations. Doha metro will be an integral part of the country's national transport network, with trains operating at 100km/h, making it one of the fastest driverless systems in the world.

Lusail's four-line 38.5km light rail network is another key Qatari transit project set to take major steps forward this year ahead of the football World Cup in 2022. The network will include a 10km underground section and is forecast to carry 50,000 passengers per day by 2021.

Kuwait: Kuwait City is planning to build a metro network at an estimated cost of $US 7bn. Five lines are currently planned which will span 91.4km. The government will own 10% of the project and raise 50% of the funding through an initial public offering (IPO). The remaining 40% will be held by private developers.

Bahrain is planning to develop its first metro project, at an estimated cost of up to $US 2bn. The project will have a total length of 109km and link the region with the King Hamas Causeway. It will be built in four stages and use driverless trains capable of carrying up to 43,000 passengers per hour across 20 stations. The project will be developed under a PPP model, and tenders are expected in the final quarter of this year.

Oman: is exploring options for light rail in Muscat as well as a national passenger network. However, these plans remain in the early stages.

QATAR MASSIVE CONSTRUCTION GROWTH IN PAST, PRESENT & FUTURE OVERVIEWS

PRABAKARAN,BE,CEng, Sr.CIVIL ENGINNER.

Introduction:

Qatar is big transformation in the terms of economic growth, Infrastructure, and the development of its built environment, these changes can be attributed to the discovery of petroleum resources among other factors. In the 20th century, Qatar economy was primarily categorized by fishing and pearling. However, the discovery of oil reserves in the 1940s has massive development into one of the biggest polygonal economies in the world.

This article exposed an overview of Qatar development journey and outlining about the economic, Construction & Business status.

Qatar Construction Economy:

Qatar is the world's largest gas producer, second-largest gas exporter, and largest exporter of liquefied natural gas .QATAR has maintained its position international richest countries based on in his economy and GDP per capita. Petroleum and natural gas are the cornerstones of Qatar's economy and account for more than 70% of total government revenue, more than 60% of gross domestic product, and roughly 85% of export earnings..

Construction, Oil & Gas, Infrastructure Development in Qatar:

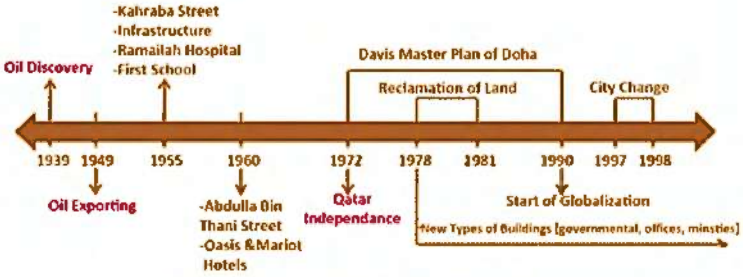
- In the year of 1939, Qatar discovered oil and by 1940 the country had started producing 4,000 barrels a day.
- In the year id 1950s This led to greater urban development with the Construction of roads and the entry of cars into Qatar.
- In the year of 1960s Qatar's traditional housing typology, the courtyard house, gave way to the development of mid-rise buildings and small compounds.
- In the year of 1971 Qatar gained independence from being a British Protectorate, which led to the formation of the Ministry of Municipal Affairs & Agriculture, an organization that commenced overseeing urban development. This department hired Llewelyn Davies, a famous British architectural and planning firm, to create a master plan that consisted of building a modern city center, multi-story residential units for laborers, recreation facilities, commercial office spaces, residential extensions and more.
- In the year of 1980s, Doha built its first high-rise developments, with buildings that were higher than 10 stories. The city also developed separate housing programs for Qataris who did not own land, educated Qataris with university degrees or Qataris working in the public sector, and expatriates working in public sector.
- In the year of 1990s, entities other than the Ministry of Municipality and Environment, like semi-private and state-owned agencies, were allowed to approve their own projects for the first time.
- In the year of 2000s, the Foreign Ownership Law, which allowed foreigners to own property for 99-year leases in Lusail City and The Pearl-Qatar was established. Also, mega projects in areas like education, culture, and sports came into being, such as the Aspire Zone, which was the first mega project in the field of sports.
- In the year of 2010, Qatar has focused on expanding its architecture and urban planning projects and also working on conserving its rich architectural tradition. A key example of this is the Msheireb Downtown Doha project that focuses on renewing and conserving the historical downtown of Doha.
- From the duration of 2010 to at present 2020, Qatar massive developed in all sectors. Construction of towers and high-rises in the Al-Dafna area, Construction of Hamad International Airport one of the largest airports in the region, Qatar Rail, Existing projects to improve and develop different roads in the country, new Doha Port, with a total capital of 27 billion riyals, Qatar National Convention Center, Lusail City Project, Construction of Stadiums.

The discovery of North Field (a natural gas field) in 2013 has been a significant factor in Qatar's economic growth. North Field lies off the north-east shore of the Qatar peninsula and covers an area of more than 6,000 square kilometres, equivalent to about half the land area of the State of Qatar

Finally the future vision of 2030 Qatar plan for Massive in construction , Modernization and preservation of traditions, The needs of this generation and the needs of future generations, quality of the expatriate labor force and the selected path of development, Economic growth, social development and environmental management. As per Qatar National Vision 2030, one of the goals for a better socio-economic future of the country includes having a world-class infrastructure backbone. The estimate that is set for Qatar's major infrastructure projects is 21.6 billion USD. And 2.7 billion USD Qatar-Bahrain causeway, which will link Qatar with the island state of Bahrain. Construction of New Doha International Airport is already done.

A German firm, Deutsche Bahn also plans to design Doha Metro. Currently partially Operation and, it is under construction.

Time Line Over View Chart :



Qatar's Development Time Line 1999-2022

Business & Construction Projects in Qatar

In view if Qatar Vision 2030 gas produced is processed to produce LNG, gas-to-liquids, natural gas liquids and other gas-related industries, in addition to pipeline gas for export. The first gas is expected to be produced by the end of 2023. As a result of its economic success, and its commitment to hosting the 2022 FIFA World Cup, Qatar is undertaking an impressive array of infrastructure and industrial projects.

The North Field expansion will increase Qatar's LNG production capacity from 77 million tonnes per annum (Mtpa) to 110Mtpa, which accounts for an LNG production capacity increase of approximately 43 per cent. Qatar expects to produce 126Mtpa of LNG by 2027, an increase of about 64 per cent. The expansion is considered one of the world's largest and one of the energy sector's most lucrative projects

The slowdown of hydrocarbon growth is attributable to the large expansion of extraction and the processing of these resources coming to an end. long-term ambition and Qatar has reduced the rate of growth of its LNG exports in previous years, it also wants to ensure that revenue from these industries remains as high as possible so as to continue developing infrastructure for the World Cup in 2022 and to meet Qatar's National Vision by 2030.

Qatar's national debt will fall gradually until 2023, from 58.3 per cent in 2019 down to 45.9 per cent in 2023. In a statement regarding Qatar's 2020 budget, the Finance Ministry confirmed that the budget allocated to major projects in Qatar increased by 1.9 per cent from the budget plan for 2019, to US$58 billion. The statement said the increase in budget '…highlights the country's commitment to timely complete the projects in leading sectors, including healthcare, education, and transportation, along with those related to the hosting of the FIFA World Cup in 2022

The main public projects that the government is currently undertaking include:

- Sports sector and 2022 FIFA World Cup stadiums: construction costs to amount to between US$8 billion and US$10 billion. In addition, up to US$200 billion is being spent on wider infrastructure required to host the 2022 World Cup. This is primarily focused on the completion of stadiums in Lusail, Qatar Foundation, Al Rayyan, Al Wakrah and Al Khor in addition to other sport and facility projects. Qatar completed the Khalifa International Stadium, its first stadium, in May 2017;
- Qatar Integrated Rail: a new US$40 billion railway and metro system, including urban metro, high-speed passenger railway and freight line;
- Ashghal Expressway Programme: the public works authority's US$20 billion project to develop a number of major motorways to relieve traffic congestion. These include the Al Bustan Highway, Orbital Expressway, Al Rayyan–Dukhan road and the Al Khor Coastal Road;
- Ashghal Local Roads and Drainage Programme: the US$14.6 billion project under which Ashghal will complete a network of roads, drainage, utilities and related infrastructure;
- Hamad International Airport Expansion: the project budget is US$15.5 billion for an additional 400,000 square metre extension of the existing airport terminal;
- Lusail City Development: a residential and commercial waterfront development valued at US$45 billion;
- Msheireb Downtown Doha Regeneration: a project valued at US$4.5 billion. Msheireb will be the first fully sustainable downtown regeneration project, conserving yet modernising the historical downtown of Doha in a mixed-use development;
- New Port: design and construction of food security facilities and warehouses valued at US$439 billion;

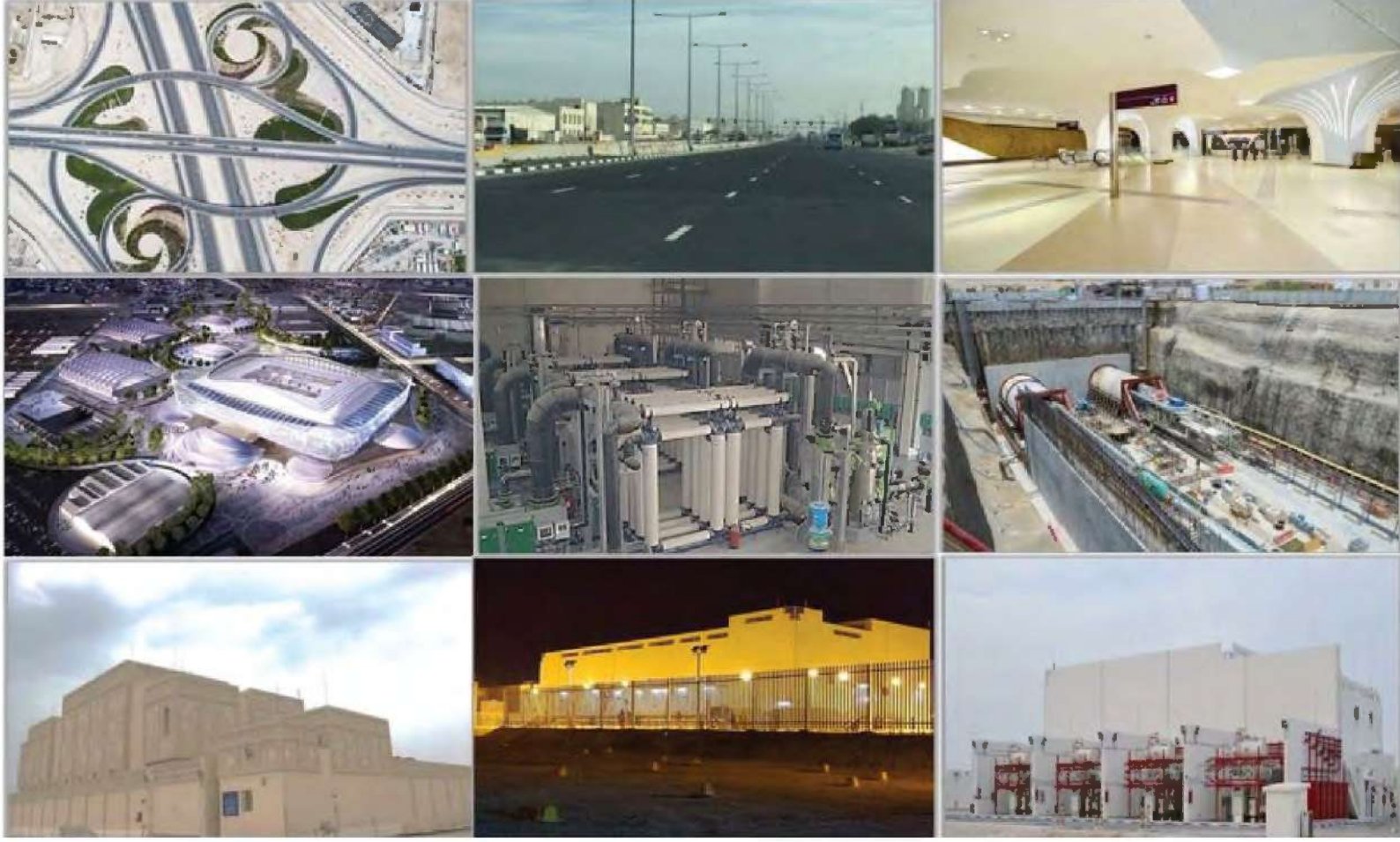
- Bul Hanine Oilfield Redevelopment: the US$11 billion Qatar Petroleum project to boost crude oil production in Qatar through new facilities expected to double the capacity of the oil field;
- Barzan Gas Development: the US$10.3 billion Ras Gas project to increase gas supply to the domestic market;
- North Field Expansion: the $35 billion project, which will increase Qatar's LNG production by approximately 43 per cent;
- Al Kharasaah Solar Photovoltaic Power project: the $462.3 million project with a net capacity of 800 megawatts will reduce 26 million tonnes of CO2 during the project's lifetime; and
- Ashghal Design, Build, Finance, Operate, Maintain and Transfer tender: the public works authority's project to provide approximately 4,000 parking bays for vehicles
- Major Residential & Non Residential Projects, HIA City 36.4 QAR Billion, Electric car plant –32.8 QAR Billion, Ras Laffan Industrial City – Concept stage 21.8 QAR Billion , Barwa City phase 2 – Concept stage 5.5 QAR Billion, North Field Development 4.4 QAR Billion, Katara phase 5 2.9 QAR Billion.
- Major Infrastructure projects ; Sharq crossing 43.7 QAR Billion, Desalination plant –10.9 QAR Billion, North road phase 4 -1.6 QAR Billion

The future phases involve an expansion of phase one, initially with the introduction of an additional line (Blue) and the expansion of the existing ones, with more than 72 additional stations connecting the capital and the suburbs of Doha. The first expansion is due to be completed by 2026

Conclusions:

Finally Based on Qatar nation visions, Economic, New Projects at various field and construction & Engineering remaining will very strong, towards the journey of 2030 Vision. For Businessman and investor, Qatar has facilitated given a lot of relief in agreements and shares to develop the economy in part of construction sectors to achieved their vision.

53rd Engineers' day press meet



Eighty years of UNDISPUTED LEADERSHIP

Larsen & Toubro is a major Indian multinational in technology, engineering, construction, manufacturing and financial services, with global operations. Its products and systems are marketed in over 30 countries worldwide. A strong customer focused approach and the constant quest for top class quality have enabled L&T to attain and sustain leadership in its major lines of business across eighty years.

- Construction
- Heavy Engineering
- Hydrocarbon Engineering
- Power
- Metallurgical & Material Handling
- Ship Building
- Infrastructure Concession
- Realty
- Financial Services
- Construction & Mining Machinery
- Valves
- Infotech
- Technology Services

Financial Services

LARSEN & TOUBRO

It's all about Imagineering

The Indian CONSTRUCTION GIANT

L&T Construction, India's largest construction organization and ranked among the world's top 30 contractors, has been over the past seven decades transforming cityscapes and landscapes with structures of immense size and grandeur. The company's capabilities span the entire gamut of construction - civil, mechanical, electrical and instrumentation engineering - and its services extend to all core sector industries and infrastructure projects.

Several of the country's prized landmarks - edifices, structures, airports, industrial projects, flyovers, viaducts, water and power infrastructure projects carry L&T's signature of excellence in construction. Today, more and more structures beyond India's boundaries are standing tall, thanks to L&T Construction

L&T Construction straddles seven related businesses:

- Buildings & Factories
- Transportation Infrastructure
- Heavy Civil Infrastructure
- Power Transmission & Distribution
- Water & Effluent Treatment
- Smart World & Communication
- Renewable Energy

Building landmarks, setting benchmarks*

- 11 International Airports
- 400+ High Rise Towers
- 40 Institutions & Public Spaces
- 65000+ Apartment Units
- 80+ Manufacturing Facilities
- 21000+ Hospital Beds
- 5 lakh + km of Water & Waste Water Networks
- 7200 MLD of Water & Waste Water Treatment Plants
- 7.3 lakh Hectares of Land Being Irrigated
- 770 Substations
- 34200 ckm of Transmission Lines
- 1.5 lakh+ km of Distribution Lines
- 136000 Habitations Electrified
- 120 Towns Power Quality Enhanced
- 2+ GW Portfolio of Solar Plants
- 315 km of Metro Rail Corridors
- 19.5 km of Monorail Corridors
- 22600 Lane km of Highways
- 11.02 million Sq. m. of Runways
- 8315 MW of Hydro Power Projects
- 8080 MW of Nuclear Power Projects
- 5075 tkm of Railway Track Laying
- 16035 tkm of Railway Electrification
- 32150 MW of E-BoP
- 245 Signalling & Telecom Installation in Stations
- India's Largest City Surveillance Project: 6000 cameras at 1500 locations at Mumbai

*The track record information published here is as of September 2019

THE SUN IS THE FUTURE: SOLAR STEAM GENERATION AND APPLICATIONS

Subrata Kar

FIE, MBA, M.ASHRAE, QSAS-CGP,
Founder-BOG-Member – ASHRAE (Qatar Chapter).
Managing Director
Green Technology and Contracting Co. W.l.l.

INTRODUCTION :

The industry and the Building sector takes up a majority of total energy consumption world-wide and the heat accounts for the major portion of this energy. Again about 90 % of this heat is generated from burning the fossil fuels like Coal, Gas and Oil thus greatly contributing to the emission of Greenhouse Gases leading to environmental Pollution.

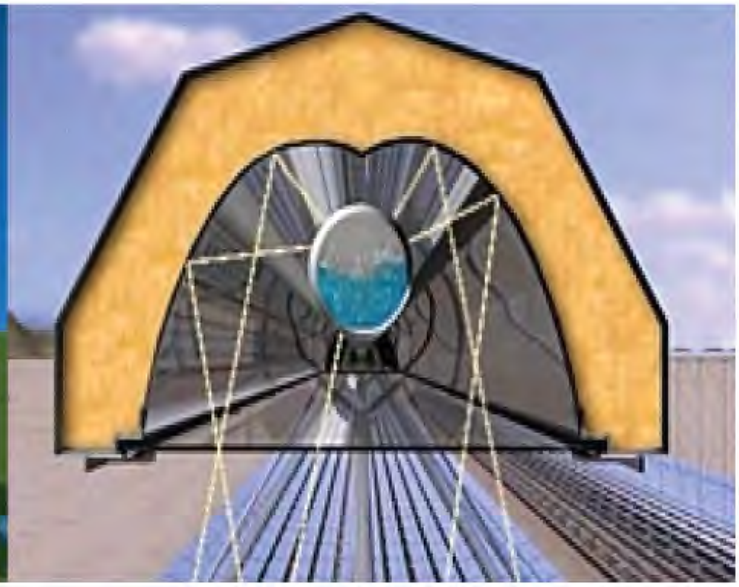
Why solar heat? Why solar steam?

- The Sun is the naturally available most powerful source of energy. For example, Doha Qatar has approximately 2500 kWh annual average irradiation value which is among the highest in the world. Qatar has easily got more than 330 days of abundant sunlight annually.
- We can harvest three times more energy from the Sun than the Photovoltaics.
- We can save the emission of huge amount of greenhouse gases and contribute towards saving the environment.
- We can save and promote Green Economy and Green Jobs.
- During sunny periods the solar system delivers the steam, the existing boiler load can be reduced.

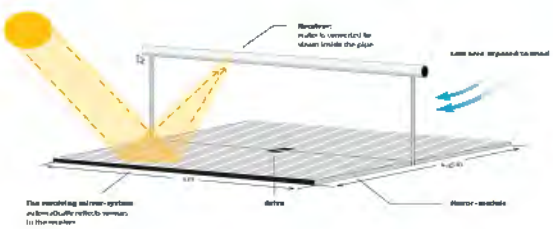
Principle of Fresnel collector

Named after Augustin Jean Fresnel (1788-1827), a French Physicist, who developed this lens / mirror.

Linear Fresnel reflectors use long, thin segments of mirrors to focus sunlight onto a fixed absorber located at a common focal point of the reflectors. These mirrors are capable of concentrating the sun's energy to approximately 30 times its normal intensity. This concentrated energy is transferred through the absorber to heat up fluids or evaporate water for direct steam production.



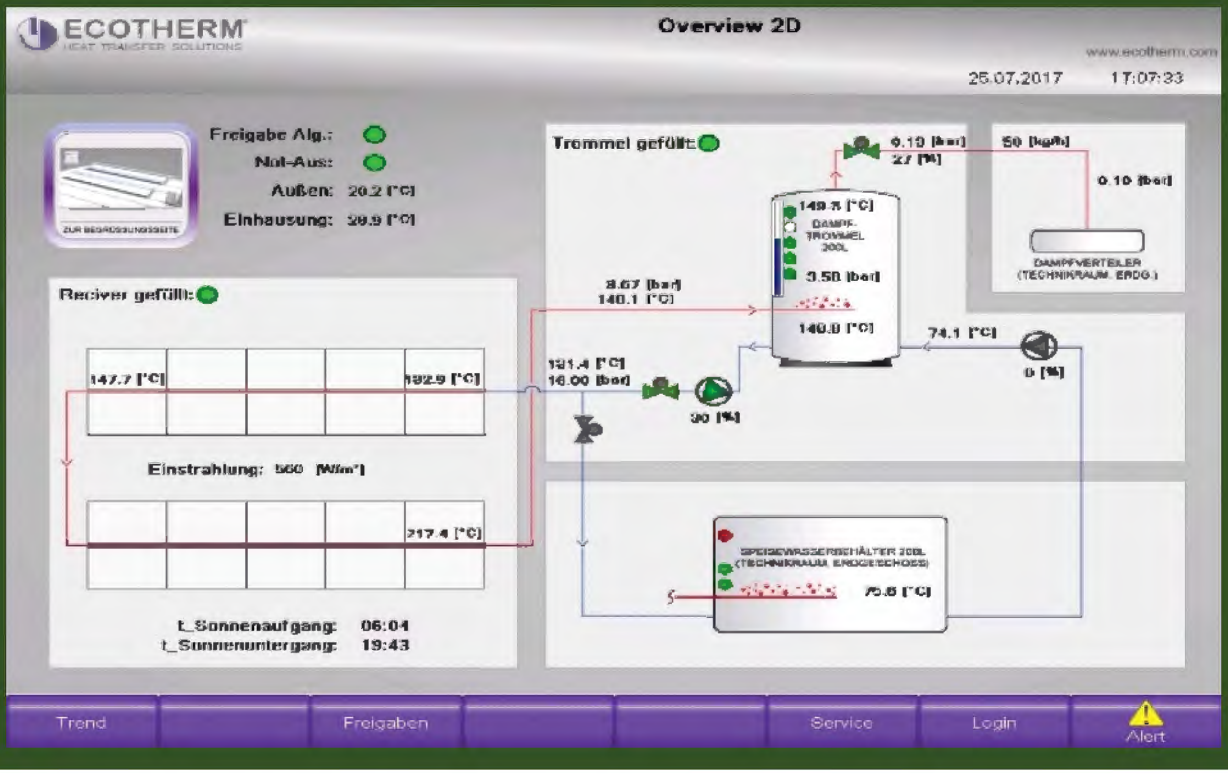
Concept of Solar Concentration



- Concentration of Solar Radiation by Sun Tracking Mirror Rotation with high degree of precision by encapsulated special purpose motors.
- Steam generation in the receiver
- High Degree of pre-fabrication
- Modular and adaptable system
- Ideal rooftop design
- Low wind influence
- Low weight

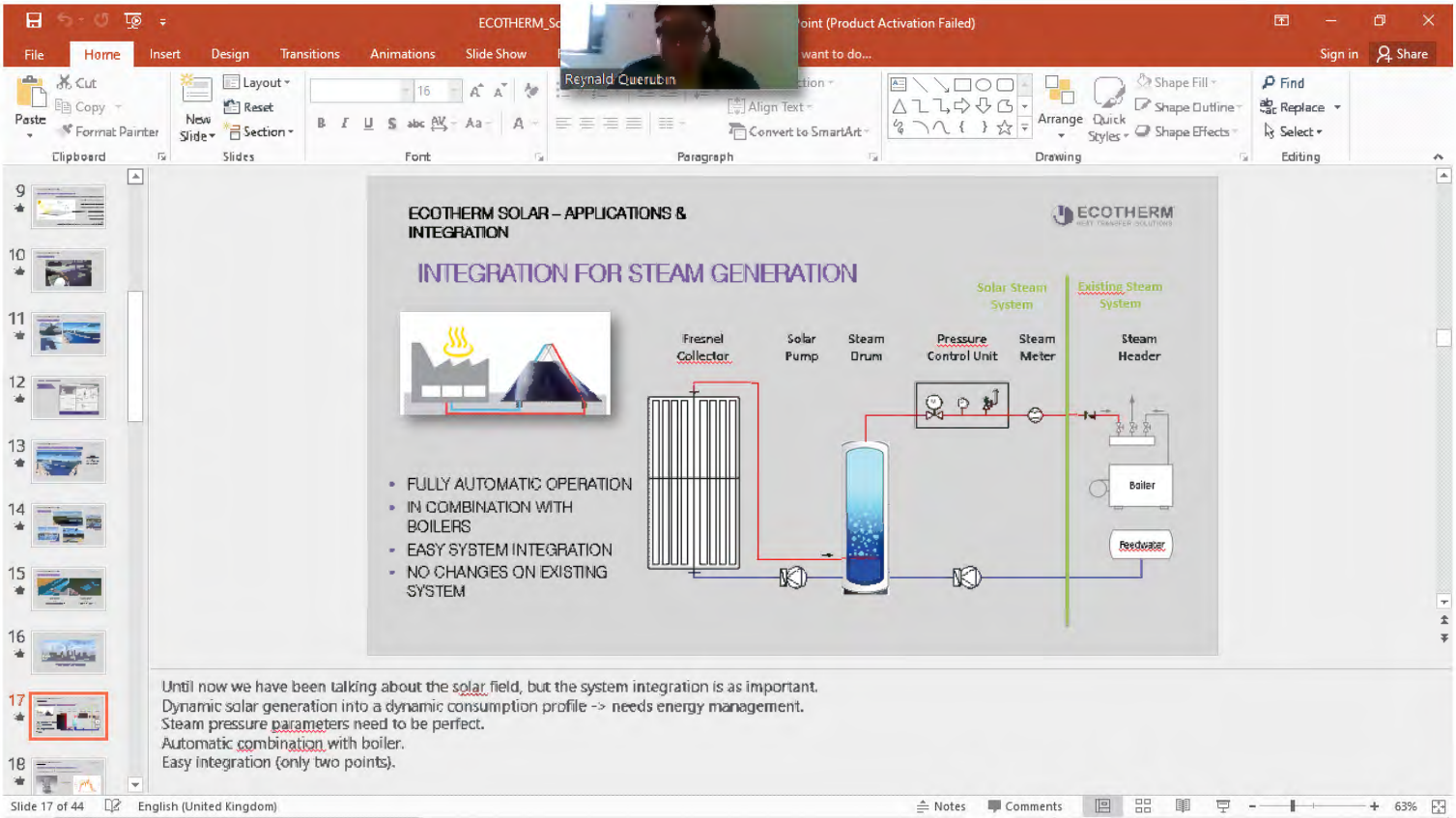
What are the benefits of using concentrated sunlight with Fresnel mirror modules?

- Energy cost reduction
- Golden End - free energy source after payback period
- Completely pre-assembled modular panels for fast installation designed for the industrial and building applications
- Perfectly suitable for rooftop installation
- Automated unattended operation

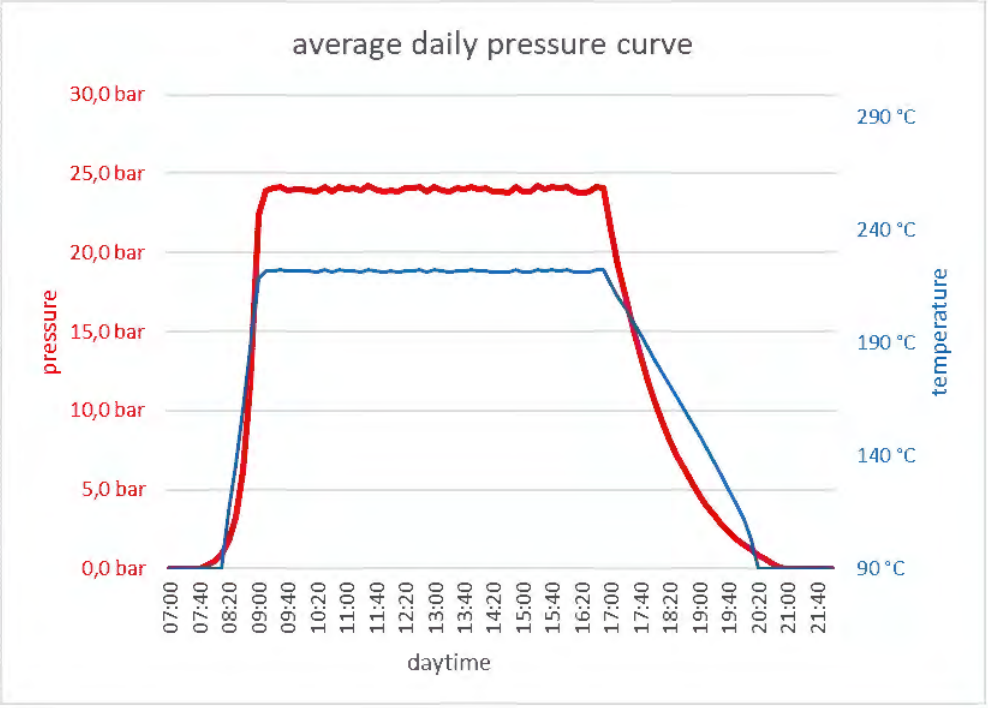


How will the Solar Steam combine with other system?

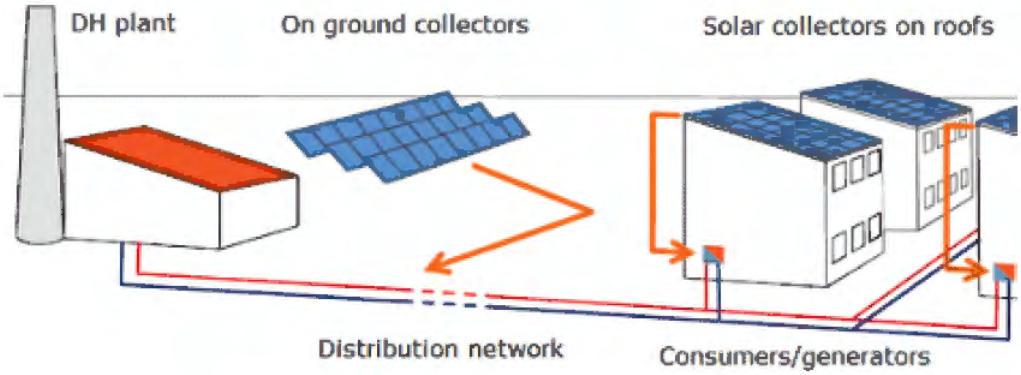
integration for Steam Generation

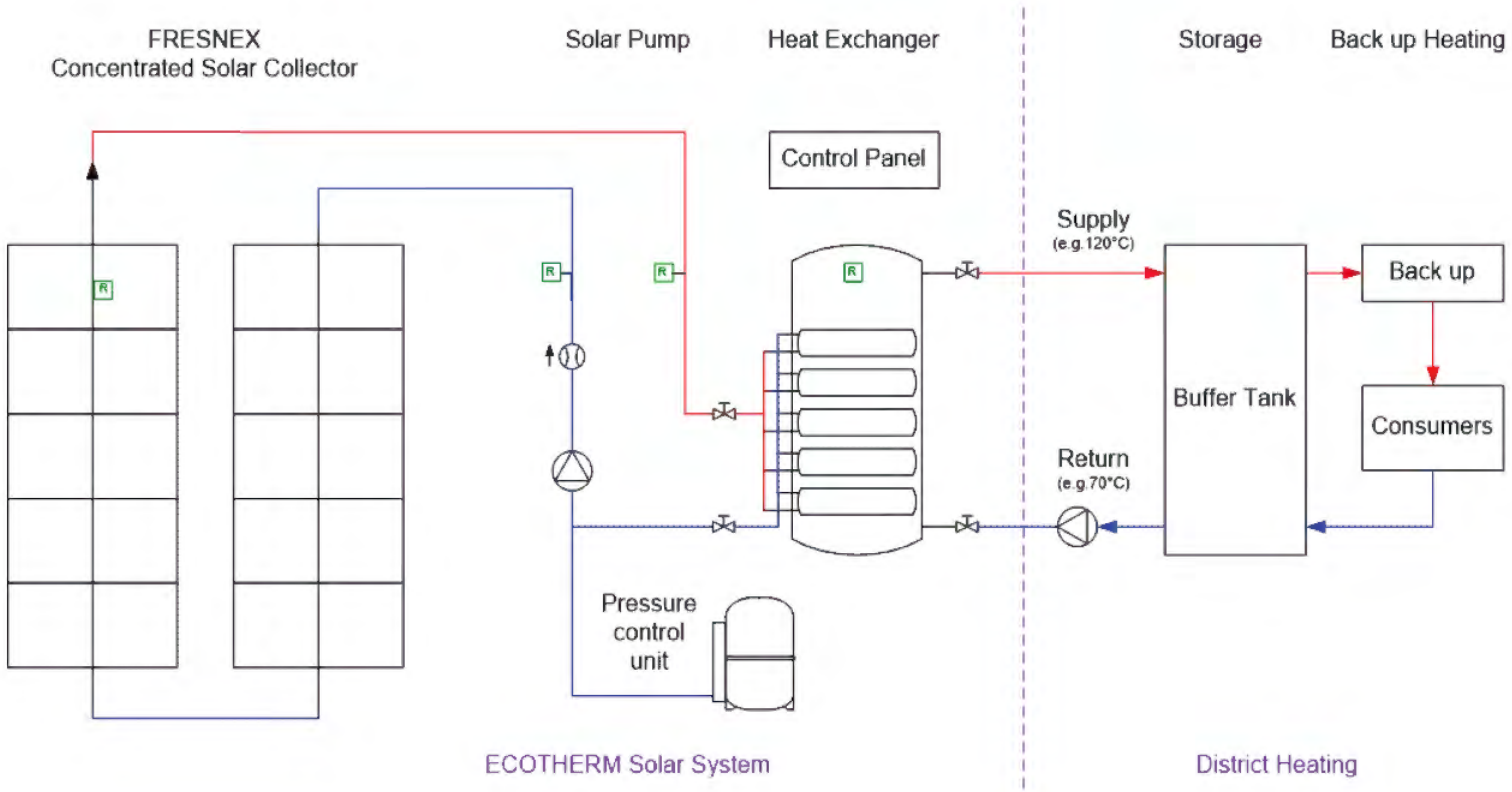


EXAMPLE Steam Drum The link between solar field and steam consumers

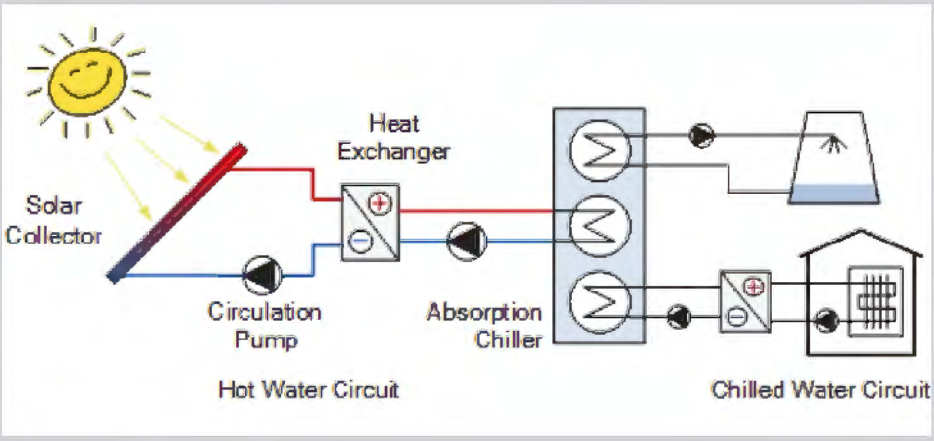


Integration for Hot Water / Thermal Oil Applications





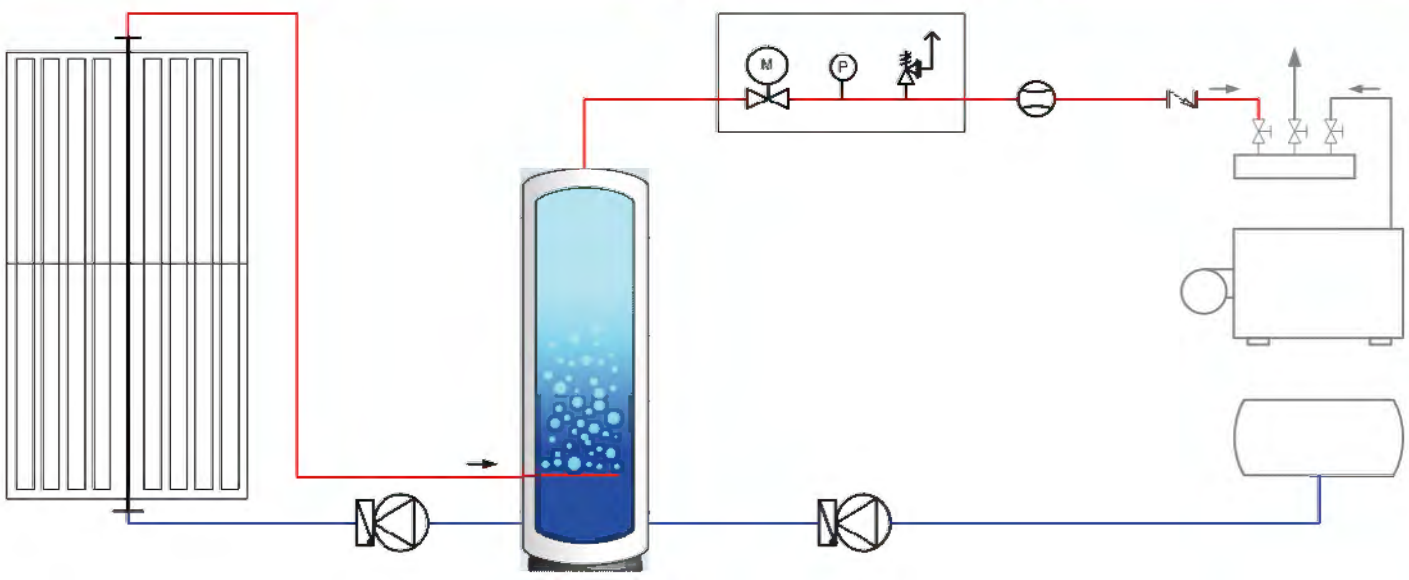
Integration for Solar Cooling



- FULLY AUTOMATION OPERATION
- TWO-STAGE ABSORPTION CHILLER
- COP > 1
- STEAM OR HOT-WATER DRIVEN (TEMPERATURE ≈ 150C)

Solar Steam System

Fresnell Collector | Solar Pump | Steam Drum | Pressure Control Unit



IEI Qatar elects new office bearers

Annual general meeting was recently held by Qatar chapter of The Institution of Engineers, India (IEI) at the Indian Cultural Centre. The meeting was attended by 34 member engineers.
Aniruddha Kulkarni, Honourary Chairman of IEI, welcomed the gathering and appreciated the efforts and active participation of all engineers in the activities of the chapter. Dipak Dahake, Honourary Secretary, gave a presentation on the chapter's activities for last two years which included technical seminars, workshops and Engineers' Day celebrations.
It was unanimously agreed, in the meeting, that the presentation of audited accounts and budget would be presented by Venumadhav Dukkipati, Honorary Treasurer, in the next general meeting.
Seenu Pillai, Election Officer, conducted the election for the new 12-member executive committee of the Qatar chapter. The election was contest by 26 members in total. The outgoing chairman proposed the names for the office bearers and new executive committee members unanimously selected the office bearer's for next two years during a separate meeting held at ICC later. Abdul Sathar was elected as Honourary Chairman, Niranjan Limaye as Honourary Secretary, and Sajeeth George as Honouraray Treasurer.

Press Releases

The Peninsula
QATAR'S DAILY NEWSPAPER

News | Business | Sports | Life Style | Views | Doha Today | Entertainment | In F

IEI Qatar Chapter elects new office bearers

07 Apr 2018 - 00:21

The Peninsula

DOHA: The Institution of Engineers India (IEI) Qatar Chapter held an annual general meeting (AGM) at the Indian Cultural Centre, recently. The AGM was attended by 34 member engineers.

Honourary Chairman Engr Aniruddha Kulkarni welcomed the gathering and appreciated the efforts and active participation of all engineers in the functioning of the chapter.

Engr Dipak Dahake, Secretary, gave a presentation on the chapter's activities for the last two years which included technical seminars, workshops and Engineers' Day Celebrations.

It was unanimously agreed that audited accounts and budget will be presented by the treasurer, Engr Venumadhav Dukkipati, upon his availability in Doha, through a separate AGM.

Engr Seenu Pillai, Election Officer, conducted an election for new 12 members' executive committee where 26 members contested.

As customary, outgoing chairman proposed names for office bearers and new executive committee members unanimously selected office bearer's for next two years term during a meeting held at ICC on April 4.

The newly elected officials are: Engr Abdul Sathar, Chairman; Engr Niranjan Limaye, Secretary and Sajeeth George, Treasurer.

The incoming Chairman, emphasised on continuing the legacy as a most dynamic overseas chapter of IEI for benefit of the engineering fraternity in Qatar.

IEI Qatar chapter holds technical seminar on corrosion control

A technical seminar on the topic of 'Cathodic Protection and Corrosion Control' was recently held by Qatar chapter of Institution of Engineers India (IEI) at Orya Rotana Hotel. The seminar was attended by around 100 member engineers. Abdul Sathar, Honorary Chairman, welcomed the gathering and instituted the spotlight. He also talked about the active role IEI Qatar chapter in the professional development of its member engineers. Santhosh G Prabhu, General Manager and Senior CP Engineer of Middle East Engineering and Corrosion Control (MEECC) conducted the seminar. He is a certified NACE (National Association of Corrosion Engineers) CP technologist and a member of NACE and ICorr (Institute of Corrosion). The seminar covered the topics of corrosion theory, simplified galvanic series, types and factors of corrosion, cathodic protection systems and its international standards. He explained about the corrosion and CP theory and its various scenarios.
Vote of thanks was proposed by Sajith George, treasurer. He also informed that 51st engineers' day 2018 of IEI Qatar chapter would be marked in September. Mid-term break completed the event.
Since its inception, the Qatar chapter of IEI has been rendering excellent professional services to the engineering community of Qatar in consistent to the objective of the institution for 27 years.

IEI Qatar Chapter holds technical seminar

The Qatar Chapter of the Institution of Engineers of India (IEI) recently held a technical seminar at Orya Rotana. Abdul Sathar, Chairman of IEI, welcomed the gathering speaking about the role of IEI in professional development of its members.
Rishi S Iyengar, Vice President of Marsh Qatar, conducted the technical seminar on 'Risk and Insurance in Construction Projects'. The seminar emphasised on identifying and managing risks along with the types of risks inherent in construction projects. He also explained about various types of insurance choices for construction projects in Qatar. The seminar was spearheaded by Marsh Qatar LLC. Abdul Sathar and Seenu Pillai, President of ASHRAE - Qatar Chapter, presented momentos to Rishi S Iyengar. The award was conferred by Sunil Kulkarni, Executive Member of IEI Saint-George. Treasurer IEI, thanked the members for making the event successful.

IIEE holds 2nd Inter Colour Basketball Tournament

The Iniab de pl Integrated Electrical Engineers/State of Qatar Chapter (IIEE-SQC) recently held 2nd Inter Colour Basketball Tournament at Arab International Academy. Along with the members of IIEE, the participants, invited guests, safety marshalls, and friends divided into 6 different teams, namely BOD, ACPE, PEE 88, PEE 98, PEE 810 and PEE PME. The tournament was witnessed by several esteemed guests, including Noni T Fernandez, IIEE National President, David Des Dicang POLO (Philippine Overseas Labor Office) Labor Attache, and Robert U Maquiraz, IIEE Regional Governor. The event was organised by Jo Frances Yagan, Committee Chairman IIEE and Ramel Gamayao, Assistant Chairman IIEE.

IEI AGM focuses on engineers' professional development

TRIBUNE NEWS NETWORK
DOHA

THE Institution of Engineers (India), Qatar Chapter, held their 28th Annual General Body Meeting (AGM) on Monday.

Honorary Chairman Er Abdul Sathar welcomed the gathering and talked about the active role being played by the Qatar Chapter of IEI in the professional development of its member engineers.

Sathar also outlined the forthcoming programme and requested members to enrol for corporate membership.

Former treasurer Er Venu Madhav presented the audited financial report for the year 2016-18 while Er Sajeet George, honorary treasurer, proposed the budget for the year 2018-19, which was adopted unanimously.

Er Abdul Sathar proposed Er Seenu Pillai's name as the honorary advisor of IEI, Qatar Chapter.

The event was compered by Er Sunil Kulkarni.

Since its inception 27 years ago, the Qatar Chapter of the Institution of Engineers (India) has been rendering excellent professional services to the engineering community of Qatar.

One of the major activities of the institution is holding technical seminars and workshops aimed at professional development of member engineers regularly.

Participants at the 28th Annual General Body Meeting of the Institution of Engineers (India), Qatar Chapter, on Monday.

IEI seminar discusses impact of digitisation

TRIBUNE NEWS NETWORK
DOHA

THE Institution of Engineers (India), Qatar Chapter, held a seminar on 'Digital Transformation: A New Industrial Revolution' to mark 51st Engineers' Day at Oryx Rotana Hotel in Doha on Friday.

The seminar was attended by over 100 member engineers. IEI, Qatar Chapter, organises a themed seminar prior to Engineers' Day celebrations every year.

IEI's Honorary Chairman Abdul Sathar welcomed the gathering and introduced the guest speakers. He also stressed the importance of this seminar during his speech.

The IEI, Qatar Chapter, was established in July, 1991, for the benefit of its members residing and practicing engineering profession in Qatar. In the last 27 years of its existence, the organisation has become one of the most active and resourceful overseas chapters of the Institution.

He also spoke on the active role played by IEI, Qatar Chapter, in the professional development of member engineers. The IEI plays a significant role in the development of agriculture and food processing, infrastructure, education and healthcare, information and communication technology as well as strategic industries such as nuclear, space and defence.

The seminar discussed how digitalisation has influenced the development and operations of built environment at every stage from site survey, design, construction, project management to procurement, scheduling, tracking, project communication and facilities management.

The construction industry has already started tapping the benefits of digitisation in many areas in the lifecycle of built environment. However, there are untapped potential in engineering, construction and operations of built environment such as application of IoT and AI.

Guest speakers at the seminar were Nagarajan Nehruji, director of Conserve Green Building & MEP Solutions; and KM Bazeeth Ahamed, USGBC LEED Faculty, Certified Energy Manager and Auditor, ASHRAE Certified Building Energy Assessment Professional and Consultant in Green Buildings.

Prominent among others who attended the seminar were Sunil Kulkarni and Shyam Sundar.

Sathar also invited members to the next 51st Engineers Day celebration which will be held at Radisson Blu Hotel, Doha, on September 28.

Press Releases

COMMUNITY

IEI celebrates 51st Engineers Day

COMMUNITY

IEI holds seminar on passive fire protection

The Institution of Engineers India (IEI) Qatar chapter recently conducted a technical seminar on 'Passive Fire Protection Coatings for Structural Steel' at Radisson Blu. Over 100 member engineers attended the seminar.

Abdul Sathar, Honorary Chairman, welcomed the gathering and introduced the guest speaker. IEI Qatar chapter was established in July 1991 for the benefit of its members residing and practising engineering profession in Qatar. He also spoke about the active role the Qatar chapter has been playing in the professional development of its member engineers. He also outlined the forthcoming programmes.

The seminar underlined that the fire safety measures are of two types, fire prevention and fire protection. Fire protection is comprised of three distinct categories, building design, fire detection, and fire suppression. Fire suppression systems exist as the last line of defence, if a fire occurs. Passive fire protection (PFP) is an integral component of the structural fire protection and fire safety in a building. PFP attempts to contain fires or slow the spread through use of fire-resistant walls, floors, and doors.

John Brown, Regional Support Manager Infrastructure from Jotun Paints, was the keynote speaker of the event. He has more than 30 years of experience in the paint industry. John has spent 20 years in Middle East.

Abdul Sathar along with IEI executive committee presented the memento to John Brown and to Jotun Paints management, who was the sponsor of the event. Dr Abdul Hameed, IEI Secretary, compered the event and the vote of thanks was proposed by Sajeet George, Treasurer.

IEI-Qatar Chapter organises annual Engineers' Day Theme Seminar

THE PENINSULA
DOHA

The Institution of Engineers India (IEI) - Qatar Chapter conducted the 52nd Engineers' Day Theme Seminar on 'Engineering for Change' recently at the Oryx Rotana Hotel, Doha.

This annual engineering seminar, organised prior to Engineer's Day celebrations, was well-attended by over 100 member engineers across various disciplines.

This overseas chapter of IEI was established in July 1991 for the benefit of its members residing and practicing the engineering profession in Qatar. Over the last 27 years of operation, this chapter has now become the most active and resourceful overseas chapter of the Institution of Engineers India. Addressing the event, Chairman of IEI Qatar Chapter, Engr. Abdul Sathar, said that Qatar Chapter continues to play an active role in the professional development of its member engineers.

Engr. Vikash Sananda's thought-provoking and enriching talk took the audience through a remarkable journey showcasing the evolution and application of human ingenuity spanning over four million years - from prehistory to the modern age. Engr. Vikash stated that "Humans have always engineered to bring about change, and that change has moved us to engineer and innovate". The Qatar Chapter of IEI will be hosting the Centenary International Engineering Congress on September 26 and 27 at Qatar University in Doha celebrating the 100th year of the IEI headquartered in India.

The theme of the Congress is 'Smart Engineering – State of the Art Technologies in Oil & Gas and Infrastructure Development'.

The celebration shall be the first-ever overseas event of the Institute and is being held in partnership with Qatar University, Qatar Foundation, and College of North Atlantic Qatar. Chairman, Engr. Abdul Sathar also announced that the 52nd Engineers Day celebration would be held on September 27, 2019 and invited all the professional engineers across Qatar.

The Chairman of IEI Qatar Chapter, Engr. Abdul Sathar, presenting mementos to keynote speakers, Engr. Vikash Sananda and Dr. Yagnesh Gohil.

COMMUNITY

IEI, BPQ pay homage to Animesh Chandra Sarkar

Animesh Chandra Sarkar, a prominent leader of Indian community in Doha and Doha resident, recently passed away in US, where he was undergoing a cancer treatment. Institute of Engineers India (IEI) Qatar Chapter recently paid homage to Animesh at Ashoka Hall, Indian Cultural Centre. Bangiya Parishad Qatar (BPQ) also organised a condolence meeting with its members in the presence of IEI Engineers. Abdul Sathar, Chairman of IEI; Milan Arun, President of Indian Cultural Centre; and Jayati Maitra, from Bangiya Parishad, along with other committee members and engineers attended the condolence meeting. Animesh joined Shell Qatar as an Electrical Engineer in 1978. Sarkar was the Founding Secretary of IEI - Qatar Chapter and Founder member, Former President and Adviser of Bangiya Parishad Qatar, a socio-cultural organisation of the expatriate Bengali community in Qatar. Animesh Sarkar leaves behind his wife Rita Sarkar, son Anwesh Sarkar and daughter Piu Sarkar, who are currently settled in Canada and United States.

IEI organises technical seminar

The Institution of Engineers India (IEI)-Qatar Chapter was recently conducted a technical seminar on 'Blockchain Technology & its Applications' at Ashoka Hall Indian Cultural Centre. Some 80 members of IEI attended the seminar.

Abdul Sathar, Chairman of IEI, welcomed the gathering and introduced the guest speakers. Speaking on the occasion, Sathar said that IEI Qatar Chapter is playing an active role in the professional development of its member engineers. He said that IEI plays a significant role for the development of various sectors, including agriculture and food processing, infrastructure, education and healthcare, information and communication technology, critical technologies and strategic industries, including nuclear, space technology and defence technology with larger objectives.

The workshop was conducted by Muddassar Ali Baig. He said, "We will own the data that belongs to us. As revolutionary as it sounds, Blockchain truly is a mechanism to bring everyone to the highest degree of accountability. No more missed transactions, human or machine errors, or even an exchange that was not done with the consent of the parties involved. Above anything else, the most critical area where Blockchain helps is to guarantee the validity of a transaction by recording it not only on a main register but a connected distributed system of registers, all of which are connected through a secure validation mechanism."

Abdul Sathar felicitated Muddassar on the occasion. The event was compered by Dr Abdul Hameed, Secretary at IEI. Shyam Sundar, Joint Secretary, proposed a vote of thanks.

Nation

Qatar Tribune 05

QU, IEI congress discusses key role of 'smart engineering' in oil & gas sector

The conference throws light on the latest innovations and technology in the engineering sector

TRIBUNE NEWS NETWORK

Qatar University President Dr Hassan al-Derham, Indian Ambassador to Qatar HE P Kumaran, IEI President Dr TM Gunaraja, and Qatar Foundation Research, Development and Innovation (QFRDI) Chief Adviser Dr Abdulla al-Sulaiti, at the event in Doha on Sunday

Gulf Times
Wednesday, May 29, 2019 | 7

QATAR

...a to host international engineering congress in September

...l host the Interna... Engineering Con... which is to be held ...centenary celebra... ...stitution of Engi... EI).

...y conference will ...mber 26, it was an... ...nday.

...ference, which will ...l the latest innova... ...nology in engineer... ...to be attended by ... GCC countries and ...d apart from those in ...dent T M Gunaraja ...ference yesterday.

...present papers on ... Young aspirants will ...l with opportunities

IEI president T M Gunaraja flanked by other officials at the announcement ceremony yesterday.

to present papers. "We have plans to invite papers from across the world," Gunaraja explained.

The conference will be supported by various educational institutions in Qatar.

The event will promote engineers in Qatar and help them achieve professional excellence.

"IEI delegation has held discussion with College of North Atlantic- Qatar president Dr Khalifa al-Khalifa. A team of IEI functionaries will also meet Qatar University authorities. Hope they will extend help and cooperation," said IEI Qatar chapter chairman Abdul Sathar.

Since its inception in 1920, IEI has been active in promoting professional activities, supporting students and spreading technological activities across India. Started in 1990, Qatar chapter is one of the old chapters of IEI. The organisation has 2,20,000 corporate members and 1,25,000 student members in 15 engineering disciplines.

IEI officials Major General Suresh Bhattacharya, Dr Abdul Hameed and Sajeeth George were also present.

CELEBRATIONS: Institution of Engineers India – Qatar Chapter (IEI-Qatar) recently organised an event to celebrate Qatar's win in 2019 AFC Asian Cup at Ashoka Hall, Indian Cultural Centre. Abdul Sathar, Chairman of IEI-Qatar, welcomed the gathering and cut a cake as part of the celebrations. The event was attended by over 80 engineers.

COMMUNITY

IEI – Qatar Chapter organises technical seminar

The Institution of Engineers India (IEI) – Qatar Chapter recently conducted a technical seminar on 'Power Grid Energy & Trenchless Technology' at Oryx Rotana Hotel. This seminar was attended by over 100 members. Ahmed Al Jolo, President of Arab Engineers Federation, was the chief guest on the occasion.

Abdul Sathar, Chairman of IEI Qatar Chapter, welcomed the gathering and introduced the guest speakers. He highlighted the importance of the seminar in engaging the engineering fraternity operating across various sectors in Qatar. He also spoke about the active role the Qatar Chapter continues to play in the professional development of its member engineers, outlining the forthcoming programs through which the IEI contributes significantly to the development of agriculture and food processing, infrastructure, education and healthcare, information and communication technology, critical technologies and strategic industries such as nuclear, space technology, and defence technology, among others.

Professor Atif Iqbal, Professor of Electrical Department at Qatar University, T Maheshwaran, from ASTAD, conducted the seminar. Speaking on the occasion, Atif Iqbal, said, "The world is moving towards decentralised power station, formally called distributed power generation. Grid-connected photovoltaic (PV) systems are one of the fastest growing renewable energy conversion systems in the world. In fact it has increased more than 7 times in the in recent past (from 5.4GW to 40GW of installed capacity)."

Maheswaran spoke about various methods adopted in major Infrastructure projects pertaining to non-disruptive methods for installation of pipe lines across major roads highways, railway line, water bodies and rehabilitation of existing redundant / non-functional old pipelines with more emphasis on the construction of the micro tunnelling process, requirements, challenges and solutions.

Abdul Sathar along with the chief guest presented the mementos to the guest speakers. The event was compered by Dr Abdul Hameed, Hon. Secretary of IEI, and KM Salihudeen proposed a vote of thanks.

QU, IEI congress discusses key role of 'smart engineering' in oil & gas sector

The conference throws light on the latest innovations and technology in the engineering sector

TRIBUNE NEWS NETWORK
DOHA

QATAR University's College of Engineering (QU-CENG) and the Institution of Engineers, India (IEI) launched the Centenary International Engineering Congress (CIEC) at QU Research Complex auditorium.

The event discussed topics related to 'Smart Engineering – State-of-the-Art Technologies in Oil & Gas and Infrastructure Development'.

The opening session featured speeches of QU President Dr Hassan al Derham; Indian Ambassador to Qatar HE P Kumaran; IEI President Dr TM Gunaraja; and Qatar Foundation Research, Development and Innovation (QF-RDI) Chief Advisor Partnerships Dr Nabeelal Salem.

Speaking on the occasion, Derham said, "It is an honour to attend today's International Engineering Congress in partnership with the Institution of

Qatar University President Dr Hassan al Derham, Indian Ambassador to Qatar HE P Kumaran, IEI President Dr TM Gunaraja, and Qatar Foundation Research, Development and Innovation (QF-RDI) Chief Advisor Partnerships Dr Nabeelal Salem, at the event in Doha on Sunday.

an electrical engineer myself, by qualification. I see that IEI has lined up an interesting set of topics for panel discussions and technical sessions during

QF RDI nurtures and empowers students, researchers, technologists and professionals to contribute in novel and innovative ways," he said.

Dr Gunaraja said, "Smart engineering intelligently connects buildings, industries, production processes and energy systems to adapt and evolve the way people live and work -- happily, comfortably,

Press Releases

The Institution of Engineers (India)

(Established 1920, Incorporated by Royal Charter 1935)

QATAR CHAPTER

(Under the aegis of Embassy of India)

Patron:- **H.E. The Ambassador of India to Qatar**

Email: ieiqatar@gmail.com

Topic of Seminar

BIG DATA Evolution

Saturday, 7th Dec 2019

06:30 – 08.30 PM

Oryx Rotana Hotel
(Near Old Airport)

Panel Spakers

Er. Ivan Tom, Team Manager, GE
Dr. Shady Khalil, Texas AMU College
Er. Sabeena, M.Tech

You are kindly requested to confirm the attendance through the following Eventbrite link on or before 6th Dec - 5:00 PM.

https://iei-technicalpaneldiscussion-onbigdata.eventbrite.com

iei.qa

The Institution of Engineers (India)

(ESTABLISHED 1920, INCORPORATED BY ROYAL CHARTER 1935)

QATAR CHAPTER

(Under the aegis of Embassy of India)

Patron:- **H.E. The Ambassador of India to Qatar**

Email: ieiqatar@gmail.com

Dear Engineers,

The Institution of Engineers (India) - **Qatar Chapter is pleased to invite you to attend Panel Discussion:-**

Topic of Online Seminar -

"Cyber Security Challenges(Working from Home) in Pre and Post COVID19 Situation"

Date & Time Saturday, 6th June 2020 @ 07:00 - 08.00 PM

Venue: **Zoom link** will be sent for those Registered users through Eventbrite by 6th June evening.

Guest Spaker: - Er. MUSTAPHA HUNEYD, Co-Founder Huntmetrics, (Ex-CISO Ooredoo Group)

You are kindly requested to confirm the attendance through the following Eventbrite link on or before 5th June - 6:00 PM.

https://iei-seminar-on-cyber-security.eventbrite.com

The Institution of Engineers (India)

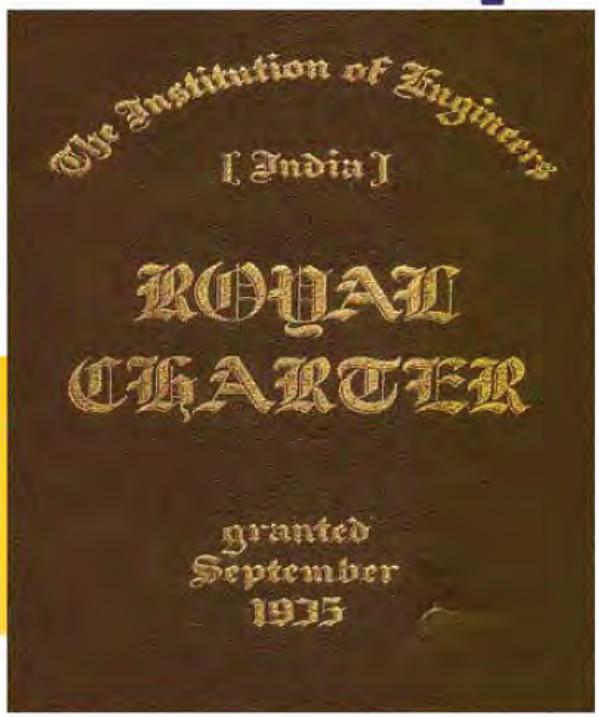
Qatar Chapter

ROYAL CHARTER

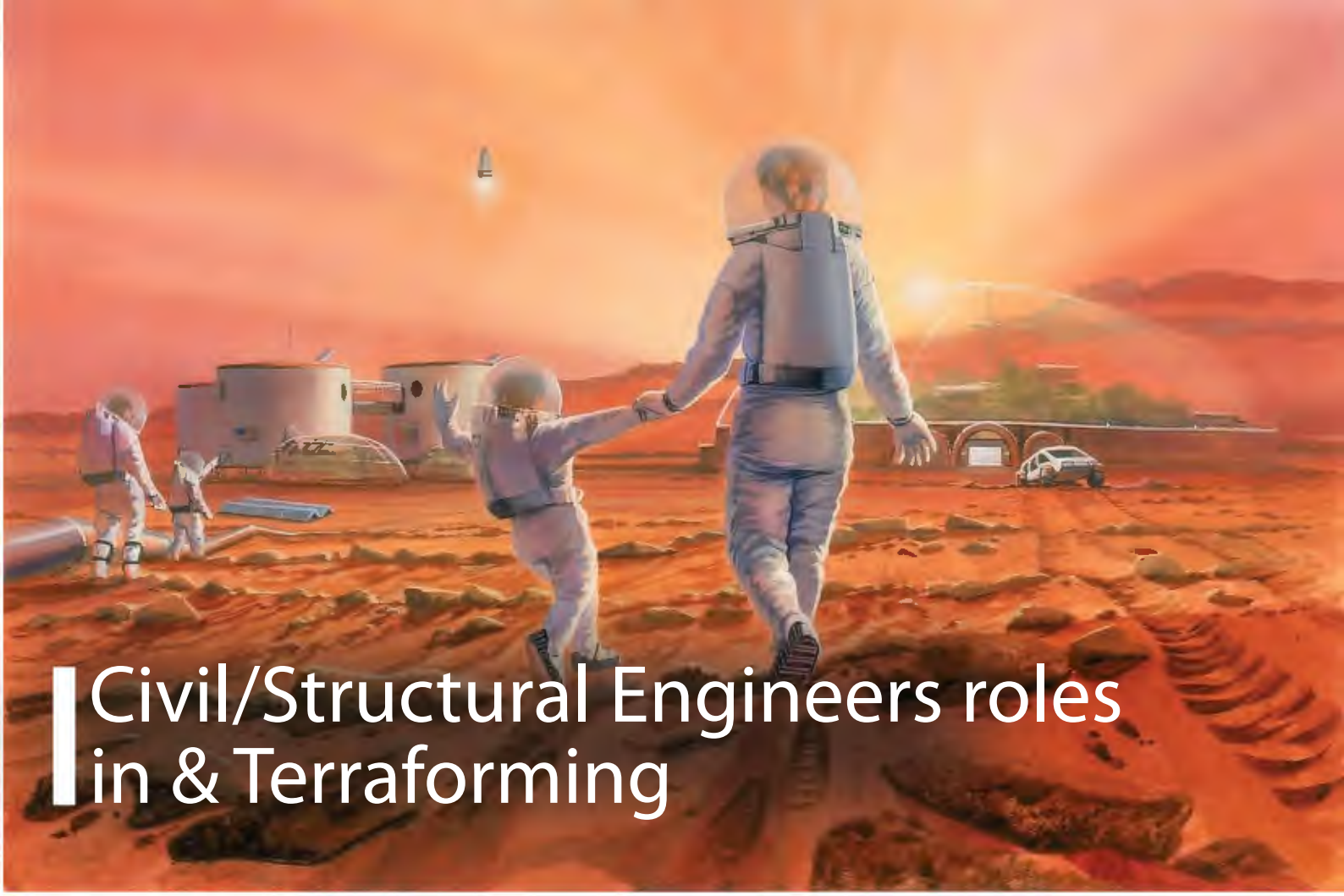
AT THE COURT AT BUCKINGHAM PALACE
THE 13TH DAY OF AUGUST, 1935
PRESENT,
THE KING'S MOST EXCELLENT MAJESTY IN COUNCIL

Royal Charter Day

9th September, 2020



Wish you a Happy "Royal Charter Day" !!!



Civil/Structural Engineers roles in & Terraforming

Have we heard of terraforming or terraformation and wondered how a civilstructural engineer on earth who can helpin terraforming a distant planet for human to habitat!.
As we know one of the greatest pleasure of great works of an architect or engineer is to see their work coming to life as they are able to visit and feel them. This is possible if we are one on earth, how about if we are to design one for other planet. Welcome to the world of terraforming and experience associated.

Terraforming is the process of making another planet hospitable for human life. We've all seen it in movies and it is not something that is likely to be needed for quite some time. However, those working in the space programme are researching ways to make terraforming possible, efficient and successful. Civil engineers are already working in the field but, in the future, when terraforming is essential to our exploration of other planets, civil engineers will have a much bigger role to play.

Civil Engineer's in Space Program

The space program starts with building habitable space which essential needs architects and engineer of aerospace understanding and indepth knowledge to achieve it. Unlike on earth for space design there existing no standards code of practice or guide, so its intuitive engineering combined with experience and skill.
Civil engineers work at designing, building and maintaining structures such as roads, buildings, airports, and industrial developments. They look at the foundations, identifying and solving any problems before building work starts. They then find ways to make processes more efficient and cost-effective as the project continues.
One place they could do this work for the space programme is the design and manufacture of command centres for space projects. These centre's must be large enough to house

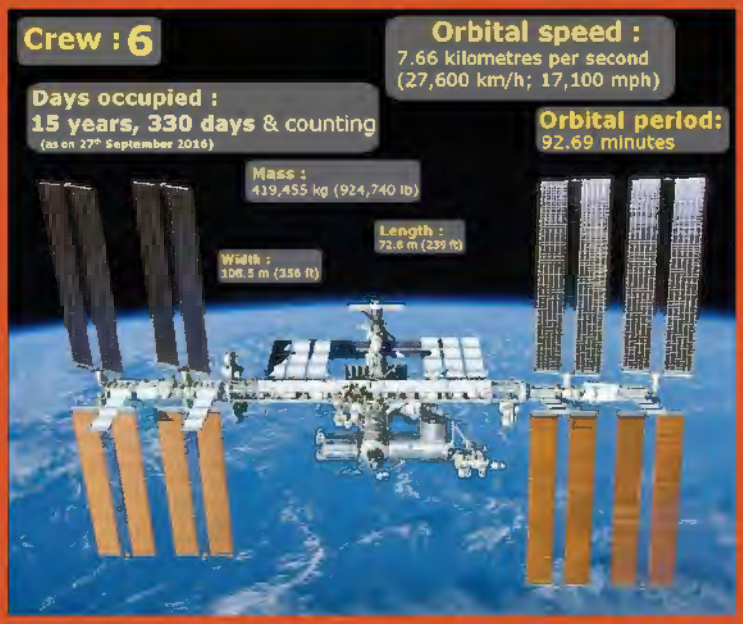
different departments, as well as runways, warehouses and hangers, so it can be an interesting job.

Another area where a civil engineer's skills are invaluable is the creation of launch platforms. A launch platform is used to launch spacecraft both into and beyond Earth's atmosphere. This is a challenging job as there are many different factors, such as weight and fuel supply lines to be considered.

During the transportation from earth to another planet the space stations where Civil engineers aren't just needed for structures on Earth. They also work with structural engineers, astrophysicists and scientists to design space stations, in much the same way as they would work on an oil rig on Earth.

Space Station - Engineering Marvel

International Space Station is a very different kind of construction to the iconic buildings that shape our contemporary city skylines. Indeed, the ISS is 'space architecture' according to a semiotic technicality – simply because it is built in'space'. This is an opportunity for lively debate, particularly with respect to the role of architects in space colonization, the human experience within the environments and the value of sending people into extraterrestrial realms for increasingly lengthy periods, with a longer-term aim of space settlement.



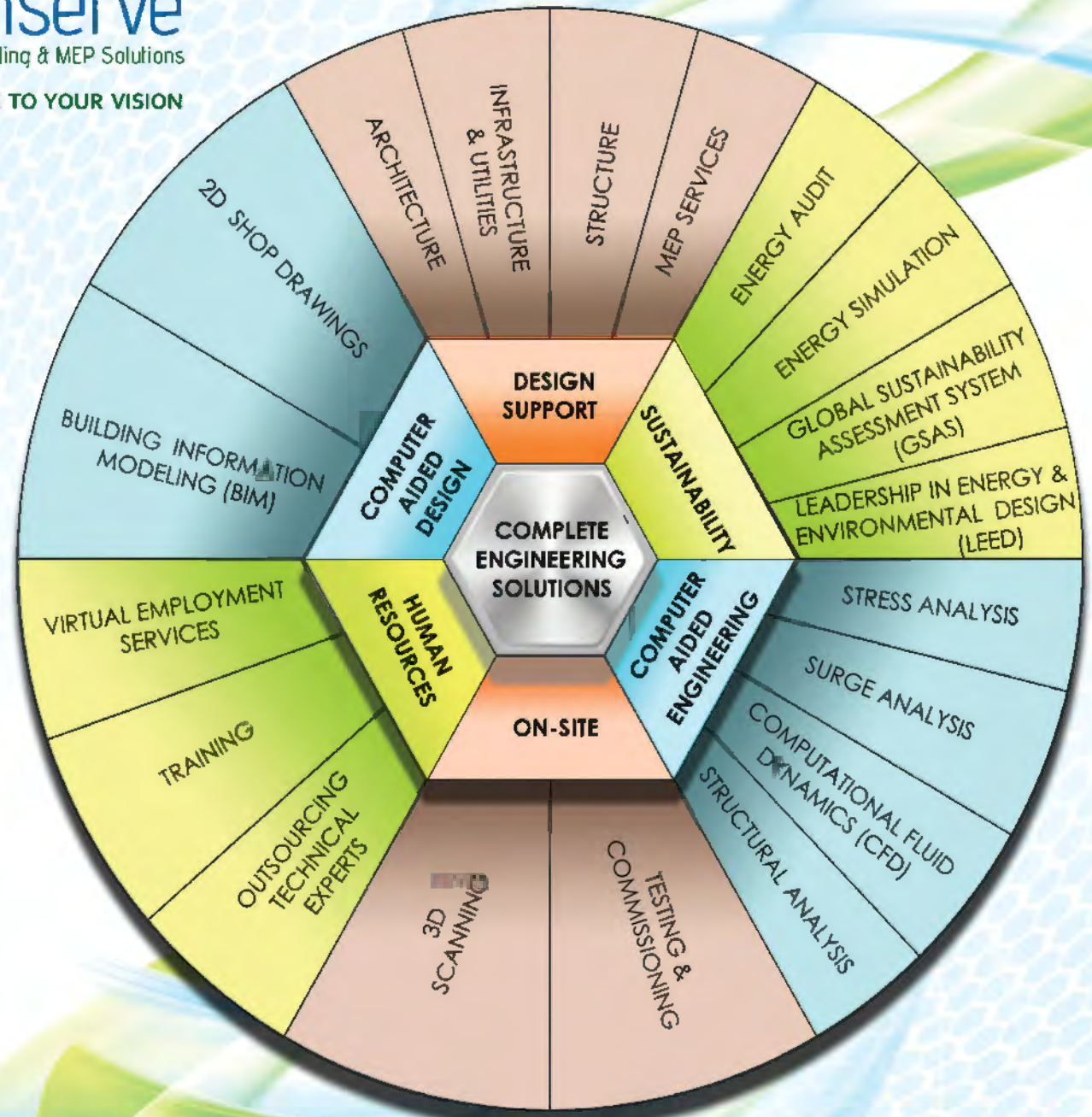
Today, the ISS fulfils only one of the functions it was intended to perform – a space laboratory. ISS is basically the most expensive and least-visited house ever constructed in the history of mankind. This is the special structural architects and civil engineers have conceived and construction in outer space this date and is testimony to the engineering marvel.

Shyam Sundar, (Ph.D), C.Eng, S.E, M.ASCE, MIE

Qatar Design Consortium

Conserve
Green Building & MEP Solutions

ADDING VALUE TO YOUR VISION



Head Office :
Conserve Green Building & MEP Solutions WLL
Doha, Qatar ,
Tel no: 4442 7968

MEP Training Division :
Conserve Green Building & MEP Solutions LLP
Trichy , India .
Tel no: +91 431 404 0585

Simulation & Analysis Division :
Conserve Green Building & MEP Solutions LLP
Chennai , India .
Tel no:+91 967 726 3895

Autodesk Authorised Training Centre:
Conserve Green Building & MEP Solutions LLP
Trichy, India .
Tel no: +91 431 404 0585

Conserve Solutions Inc.
Ontario , Canada .
Tel no: +1 647 741 5917

etap®
Powering Success

Electrical Power System Analysis & Operation Software

Generation

From renewable to nuclear, majority of power generation plants rely on ETAP

- Grid Interconnection Studies
- Renewable Penetration Studies
- Design & Analyze Solar & Wind Farms
- Model Validation & Compliance Reports
- Dynamic Parameter Tuning
- Generation Protection
- Power Train, Auxiliary & Safety Systems
- Unit Commitment & Dispatch
- Microgrid Modeling, Design & Control
- Generation Management System

Industrial

Intelligently model, design, and operate oil & gas, mining & metals, manufacturing plants

- 'What If' Studies w/ Multiple Results of Load Flow, Faults & Arc Flash Studies
- System Loss Reduction & Reactive Compensation Studies
- Equipment Capacity Sizing
- Acceleration Studies w/ Adjustable Drives
- Protective Device Auto-Evaluation
- Harmonic Evaluation & Limit Compliance
- Fast Load Shedding & Bus Transfer
- Predictive Analysis, Control & Automation
- Power Management System

Distribution

Modeling, planning and operations of state and city-wide power distribution networks

- Planning & Optimization Studies
- Intelligent GIS & Logical Diagrams
- Substation & Feeder Diagrams
- Equipment Warehouse & Sizing
- Reliability Assessment & Indices
- Substation & Feeder Automation
- Grid Management & Optimization
- Advanced Fault Detection & Location
- Automated Outage Restoration
- Demand Response & Load Shedding
- Integrated DMS & OMS Solution

Transmission

Integrated grid modeling, planning, protection and energy management solution

- Multi-Area System Planning
- Grid Interconnection Studies including Offshore Wind Parks
- HVDC Link & FACTS Models
- Overhead Line Distance Protection
- Line Constants & Coupling
- Outage Assessment & Sensitivity Analysis
- Electromagnetic Transients
- Substation Automation
- Substation Grounding Design & Analysis
- Security Constrained Optimization
- Energy Management System

Data Center Commercial

Design, analysis, and protection of low voltage installations and mission critical facilities

- Dedicated Data Center Dashboards
- Electrical Safety System Monitoring & Evaluation Redundancy Adequacy Assessment
- UPS Design, Monitoring & Control
- Critical Infrastructure Failure Mode & Effects Analysis
- Rule-Based Design per Industry Guidelines
- Panel Board Schedules
- Cable Sizing & Thermal Analysis
- System / Zone Protection & Selectivity
- Power Quality Analysis & Mitigation
- Interface w/ Revit & BIM Software

Transportation

AC & DC electrical system analysis for railways, marine and aerospace

- **eTraX™ - Rail Traction System**
  Solution for analysis and operation of HV & LV railway power and signaling systems
- **Marine, Offshore & Shipbuilding**
  Design, operate and maintain ship, platform, and port power systems safely, while improving critical uptime
- **Airports & Aerospace**
  Design, simulate, analyze and operate airport & aerospace unified AC & DC power systems

Test Drive ETAP Software - Download Free Demo

sales@etap.com

etap.com

COVID 19 support to ICBF


ENERGY CONSERVATION PROGRAM
Conserve
Tarsheed


The Institution of Engineers (India)
QATAR CHAPTER
The Institution of Engineers (India)
QATAR CHAPTER


KAHRAMAA
Tarsheed
100

Why Join IEI?

When you join The Institution of Engineers (India), you are instantly connected to the largest and most diverse professional engineering body in India. In fact, IEI has more than **500,000 members working across all fields of engineering around the world.**

Become a part of the IEI family and you gain access to a vast network of potential friends, colleagues and mentors.

With industry leading programs and resources, membership is a tremendous asset for any engineer working in India and abroad. Apply now to gain access to the people, places and promote your career, and life, deserves.

Honorary
Honorary Fellow (HF)
Honorary Life Fellow (HLF)

Corporate
Fellow (FIE)
Member (MIE)
Associate Member (AMIE)

Non Corporate
Student Member (SMIE)
Member Technologist (MTIE)
Associate Member Technologist (AMTIE)
Senior Technician (Sr Tech IE)
Institutional Member (IM)

Join
Scan the Barcode to learn more and be a part of our family.

IEI Qatar Chapter

The council of the Institution of the Engineers of India established on an overseas chapter **in the State of Qatar in the Arabian Gulf in July 1991 for the benefit of its members resid**ing and practicing engineering profession in Qatar. The jurisdiction of the Qatar Chapter shall be the geographical boundaries of the State of Qatar. The Qatar Chapter operates under the sponsorship of the Indian Embassy in Qatar and under the patronage of the Ambassador of India.

IEI Qatar chapter is licensed with Qatar Financial Centre and its office is located in Regus building Centre, P.O. Box 18523, 1st floor, Office 103, D-Ring road, Doha, Qatar.

IEI Qatar

Hon. Chairman: Er. Abdul Sathar FIE
Mobile: +974 5587 3526
Email: sathar@iei.qa
asathar2012@gmail.com

Hon. Secretary:
Dr. Abdul Hamid Pathiyil
Mobile: +974 5539 1148
Email: ahameed_p@hotmail.com

Join
Scan the Barcode to learn more and be a part of IEI Qatar.

iei.qa

IEI-Qatar Souvenir 2019

Distributed Control System (DCS)

The Institution of Engineers (India), Qatar Chapter

Centenary International Engineering Congress

Sivabalan Selvarajan
B.E. MBA

ABOUT DCS

Distributed control system (DCS) is a computerized control system for a process or plant usually with a large number of control loops (>256). The Field Instruments / Sensors I/O can be integral with network. Controllers are extensive computational capabilities and in-addition to perform logic, continuous PID control and sequence control with remote monitoring and supervision.

BRIEF OF DCS

When systems get larger and processes becoming more complex, we need to measure and control in all aspects of your plant. Having central location is critical. Whether you have a single factory or multiple sites, getting all the relevant data to a single location has always been a challenge.

In the past, this would have been done with expensive Programmable Logic Controllers (PLCs) with a high density channel count, long cable runs and in some cases, a compromised location. Using a system with distributed I/O, the disadvantages of high channel counts and expensive controllers can be overcome and additional

The main characteristics of a distributed approach includes short cable runs for a wide range of I/O options such as digital and analogue channels, temperature measurements and counter inputs. These modules can be connected to existing legacy systems such as a plant wide Distributed Control System (DCS) and simbe achieved with traditional devices.

or replaced.

These advantages can be extended to the software, presenting data in a standard format for new and existing platforms such as OPC (Open Process Control) using OLE (Object Linking and Embedding), Modbus, SNMP (Simple Network Management Protocol), and the other protocols like email and SMS messages on the cellular network. With the use of appropriate gateway devices, modules can be connected to existing legacy systems such as a plant wide Distributed Control System (DCS) and sim-

DCS HARDWARE

DCS begins at the sensor I/O and extends all the way through I/O Modules, controllers, application processors, workstations, PCs, and communications networks falling within the DCS control domain. Size of the DCS will be based on I/O

Excluded from the DCS hardware

valves, analytical devices, all specialty measurement equipment (such as paper machine gauges and condition monitoring devices), and any other devices that exist outside I/O level of the system. Also excluded are dedicated supervisory workstations that execute applications such as advanced control, production management, real-time optimization, simulation or plant asset management.

DCS SOFTWARE

DCS management programming software includes embedded controller, control system, HMI, software, Alarm Management, Report tool and plant information management (PIM) software such as bundled data historians in addition to performing HMI functions. HMI software can also perform functions such as I/O communication and it typically resides in the DCS workstation or PC. Control software typically resides embedded in controllers and performs basic control functions.

The DCS software excludes optional supervisory software that performs production management (MES), advanced process control (APC), model-predictive control (MPC), real-time process optimiza-

26 September 2019
Qatar University
Research & Development Building (H10)

27 September 2019
Al Dana Club
Al Jewana Hall

Technology Partner

Knowledge Partner

/ CIECQatar iei.qa

Water an Efficient Alternative Energy

Water is a source of huge, largely untapped energy, and the potential for extracting energy from water is considerable. The use of water energy has been around for many years in the form of water clocks, water-wheels, electricity produced by the flow of water, etc

In the twenty-first century, scientists have developed water-based applications ranging from tidal power to thermal power. Many centuries ago the ancient Egyptians devised water clocks, whose wheels were turned by the flow of water. The Egyptians and Syrians also used a device called a Noria, a water-wheel with buckets attached, that was used to raise water out of the Nile River for use on their crops. Two thousand years ago the ancient Greeks built waterwheels to crush grapes and grind grains. At roughly the same time, the Chinese were using water-wheels to operate bellows used in the casting of iron tools such as farm implements. The Romans built water-carrying structures called Aqueducts to channel water from natural sources to

canals, where the water's energy could be harnessed by waterwheels. The Romans also built a massive grain mill powered by sixteen waterwheels. Farmers used to take advantage of the currents in rivers and streams for a variety of agricultural purposes, including grinding grain and pumping water for irrigation (watering crops)

Factories, especially in Great Britain and in the American Northeast, relied heavily on water power as well because of the large number of rivers and streams in the British

Isles and in such states as Massachusetts, Connecticut, and New York. The textile industry, in particular, used water to power the "Spinning Jenny," a cotton-spinning machine for making cloth. In 1769 English industrialist Richard Arkwright patented a water-powered textile loom for spinning cotton that revolutionized the textile industry. One of the pioneers in using water energy in the textile industry was an England businessman, Francis Cabot Lowell. Waves and ocean currents, like the tides, contain enormous amounts of energy. In the early twenty-first century, efforts have been launched to tap the power contained in the oceans' tides, waves, and currents. Tidal power for electrical generation is relatively new. The first patent for a wave power machine that would function much like a waterwheel in powering grain mills and sawmills was filed in France in 1799. In 1974 a British engineer named Stephen Salter invented a device called a "duck." This was a hydraulic mechanism that converted wave power into electricity. In the years that followed, scientists and engineers sought ways to transform innovations like the duck into a working wave power-generating station. Their efforts were finally successful in 2000 when the United Kingdom opened the first such station on the island of Islay.

The major problem with early waterwheels was that they could not store power for later use. This disadvantage was overcome by the development of hydroelectricity. Hydroelectricity was first used in 1880 when the Wolverine Chair Factory began producing hydroelectric power for its use in its Grand Rapids, Michigan, plant. The first hydroelectric plant whose power went to multiple customers began operation on September 30, 1882, on the Fox River near Appleton, Wisconsin in the late 1870s Lester Allan Pelton developed the Pelton wheel, a new, more efficient design for turbines that powered hydroelectric plants. The turbo turbine was developed in 1919 and represented an improvement in the Pelton wheel

To put water to work, the water has to be in motion. The best way to put large amounts of water in motion is to let gravity do the work. Streams and rivers, for example, flow because the water in them is moving downhill, following the downward pull of gravity. Water flowing downhill, pulled by gravity, contains kinetic energy. A tool such as a waterwheel is used to convert this kinetic energy into mechanical energy, which can then be harnessed to perform several tasks, such as grinding grain, sawing lumber, or running a textile loom. Or the kinetic energy can be transformed into electricity, which can be stored and distributed to many different users.

Tidal power is another form of water energy that is due to moon gravity. Every day, the moon exerts a gravitational pull on the Earth, causing the Earth's oceans to bulge outward. At the same time, the Earth rotates beneath this water, so twice each day, the Earth's coastlines experience high and low tides. This motion, driven by the pull of gravity, imparts kinetic energy to the oceans. The tidal power-generating station can operate only about ten hours a day, during the times when the tides are in motion. The oceans' waves are yet another potential source of kinetic energy. Waves, which average about 12 feet in height in the oceans, are caused by wind blowing across the surface of the water. The steepest and most powerful waves are caused by winds that blow strongly in the same direction across oceans, such as the trade winds. The force of this wave power is so great that it continues to wash away the coastlines

Another source of water energy in the oceans is their currents. Currents, like waves, are usually propelled by the wind blowing across the surface. Water currents are formed by differences in water temperature and salinity and even by slight differences in the elevation of the sea's surface. The currents follow paths determined by the Coriolis Effect or the effect of the Earth's rotation. In the Northern Hemisphere, the Earth's rotation deflects the currents into a clockwise rotation; in the Southern Hemisphere, the currents flow counterclockwise.

The major benefit that all forms of water energy have is that they provide power without burning fossil fuels. Energy can be provided for human use without having to tear up the land to mine coal or disrupt ecosystems to drill for oil. The power they provide is clean—it does not release particulate matter, carbon dioxide, or sulfur dioxide into the air. Also, because water energy does not depend on the burning of fossil fuels, it does not contribute to global warming, nor does it contribute to acid rain, or precipitation that is more acidic than normal because

it contains such substances as sulfur dioxide. Acid rain, like any acidic substance, can have harmful effects on forests, wildlife, and even structures.

Another major benefit of water energy is that it is virtually inexhaustible. Once fossil fuels run out, they are gone. There is no way to somehow manufacture more oil or natural gas. However, the energy provided by water will be there as long as the sun shines and as long as the Earth contains oceans and rivers. Further, the energy provided by water is essentially free to extract energy. While money is only required to build plants, maintain them, and distribute the power they produce, a major benefit is that power providers would not have to buy fuel for them. The potential savings can be huge. This energy source, though, is not without drawbacks. Exploiting these forms of power would require a huge investment. The cost of building a tidal power-generating station, for example, could run as high as $15 billion. The water-energy is not reliable. In an energy plant that burns fossil fuels, the fuel can be fed into the system at a constant rate. As a result, the energy output of the system can be predicted and maintained at a steady pace. Water energy can be a little more variable. In the case of ocean energy, plant operators have no control over the water movement. Tidal power can vary from

iday to day, depending on the alignment of the Earth with the sun and the moon. Wave power could be highly variable, depending on prevailing winds. While the power in ocean currents and the ocean's thermal gradient is more predictable, the chief obstacle is getting to it. Creating a power plant in the middle of the Gulf Stream is a tough job.

The use of river power, too, is highly variable. While hydroelectric power provides 24 percent of the electricity used worldwide, much of that hydroelectric power is concentrated in regions with several rivers. They can provide little or none in the desert countries. A fossil fuel-fired plant can be built anywhere because the fuel is brought to the plant. With water energy, the plant has to be brought to the fuel, meaning that plants have to be built on rivers, along shorelines, and in bays.

While water power has been used throughout much of history, its economic impact began to be felt more fully in the late eighteenth and early nineteenth centuries. Water as clean renewable energy would lessen the adverse health effects of fossil fuel burning. Because the fuel itself is essentially free, more reliance on water power would free up billions of dollars that could be used for other human needs. Using water power would also benefit the environment, reducing the need for environmentally disruptive coal mining and oil drilling, along with the regular oil spills that spoil many nations' coastlines. Water power could also have a major impact on poorer nations, which lack the resources to import fossil fuels for economic development. Water energy could provide these nations with a clean, relatively inexpensive way to develop and provide a richer economic, social, educational, and cultural future for their peoples.

Mohammed Maqbool Ahmed, Ph. D

Head of Quality & Certification Unit, University of Qatar

COVID 19 support to ICBF

Activities of the IEI Qatar Chapter

The visionaries amongst the engineers thought it necessary in the early twentieth century to establish in India a professional society encompassing all disciplines of engineers. The sapling planted in the 1920 has, by now, grown to a big tree and the track record of The Institution of Engineers (India) has been a matter of pride for all engineers.

In the second decade of the last century India was embarking on industrialization. A report of the Industrial Commission in 1916 recognized the importance of the engineering profession. Proposals were mooted in 1918-19 for the formation of an Indian Society of Engineers. Finally the Institution of Engineers (India) was formed and registered at Madras in 1920. Sir Thomas Holland was one of the active participants leading to the establishment of the Institution and could be considered as its founder.

The Institution of Engineers (India) was registered under the Indian Companies Act, 1913 in the year 1920 and was formally inaugurated in 1921 by Lord Chelmsford, the then Viceroy and Governor General of India. The Institution of Engineers (India) was granted the Royal Charter of Incorporation 1935 by His Majesty the King George V of England in 1935, "to promote and advance the science, practice and business of engineering in all its branches in India". Starting with this humble beginning, The Institution of Engineers (India) is now an unique professional body encompassing 15 engineering disciplines and with an overall membership of over 500,000

The Institution of Engineers (India) is the first professional body to represent India in several International Bodies, such as the World Mining Congress (WMC), the World Federation of Engineering Organizations (WFEO), the Commonwealth Engineers' Council (CEC), the Federation Internationale du Beton (fib), and the Federation of Engineer-

ing Institutions of South and Central Asia (FEISCA). It also has bilateral agreements with a number of professional societies across the globe.

The council of the Institution of the Engineers of India established on an overseas chapter in the State of Qatar in the Arabian Gulf in July 1991 for the benefit of its members residing and practicing engineering profession in Qatar. The jurisdiction of the Qatar Chapter shall be the geographical boundaries of the State of Qatar. The Qatar Chapter operates under the sponsorship of the Indian Embassy in Qatar and under the patronage of the Ambassador of India. IEI Qatar Chapter was formally inaugurated on July 26, 1991 by the then President of IEI Mr. P. J. Mehta accompanied by SDG Mr. K. N. Mazumdar.

The aims and objectives of the chapter are to promote the general advancement of engineering and to facilitate exchange of opinion and ideas in engineering profession amongst Members of the Qatar Chapter and for that purpose.

To promote co-operation and co-ordination among all Members residing in the State of Qatar and between the Chapter and the Headquarter of the Institution in India. All the members of the preparatory committee and the founding committee had contributed greatly in the formation of this chapter but exemplary contributions of Founder Chairman Er. John Mathew and Founder Secretary Er. Animesh Sarkar etc would be ever remembered.

Qatar Chapter has been providing support and counseling services to the Engineers in Qatar to become Corporate Members, Chartered Engineers (C.E) and Professional Engineers (P.E) of the Institution. Levels of Corporate Memberships are Fellow (FIE), Member (MIE), Associate Member (AMIE).

The Institution records its appreciation of the services rendered by the Indian Embassy officials and the IBPC of their support. IEI Qatar Chapter has begun offering the Professional Engineering (PE) examination facilities in Qatar. PE certification has assumed a great significance after the formation of "Engineers Mobility Forum", a global body for the free movement of Engineers holding PE certification of any member country with mutual recognition.

As Honorary Secretary of the Qatar Chapter, I consider it a privilege to present this overview of the activities since 52nd Engineers Day celebration on 26th & 27th September, 2019.

The Institution of Engineers (India) - Qatar Chapter well organized the Historical event " Centenary International Engineering Congress" (CIEC) in Qatar on 26th September with various remarkable programs such as " Young Budding Engineer Award" for Indian School Students. Presentation of Technical Papers and workshops at Qatar University campus. H.E Ambassador of India and President of Qatar University were Chief Guests of

the event.

CIEC was organized in association with Qatar Foundation Research, Development & Innovation (QFRDI) and College of North Atlantic-Qatar. The program was gracious presence of Dr. Nabeel Al Salem, Chief Advisor Partnerships, QFRDI and Er. Vikash, QFRDI.

The Institution of Engineers –Qatar Chapter had organized the 52nd 0th Engineers' Day on 27.09.2019 at Al Dana Club, Doha. Dr. TM Gunaraja , President IEI HQ was the Chief Guest and Maj. Gen Souresh Bhattacharya, SDG-IEI HQ, Council Members of IEI HQ. Among Guests of Honor were- Er. Ahmed Jassim Al-Jolo, the former President of Qatari Society of Engineers and Mr. Hamad Al Nassr, Qatar Financial Center. More than 200 engineers, School Students and invited dignitaries had attended this great event.

On 28th October, 2019, we conducted Technical Seminar on "Grid-Connected Distributed Energy SourceChallenges and Requirements" by Dr. Atif Iqbal (Fellow IE, Fellow IET, Dept of Electrical Engg, Qatar University) and Er. T. Maheswaran, B.Tech on "Trenchless Technology" at Oryx Rotana Hotel.

On 7th December, 2019, IEI QC conducted BIG DATA Evolution" Panel Speaker Program moderated by Er. Sabeena MK, M.Tech. and the panel speakers are Er. Ivan Tom, Technical Manager, GE and Dr. Shady Khalil , Texas AMU College at Oryx Rotana Hotel, Airport Road, Doha.

On 30th January, 2020, IEI QC conducted "Energy Conservation: Today's Challenges" Panel Speaker program. Er. Ahmed Jassim Al Jolo, Former President, Qaatri Society of Engineers was the Chief Guest. Er. Nishad Azeem , CEO, Coastal Qatar was the Guest of Honour. Er. KM Salihudeen was the moderator. Prof. Syed Javaid Zaidi, QAFAC Chair professor, Qatar University, Dr. Rajendra Sankaran, Research Associate, Qatar University, Er. KM Bazeeth Ahamed, Director, Conserve Solutions were the panel speakers.

On 9th February, as part of Corporate Social Responsibility, IEI QC and Conserve Solutions jointly agreed to conduct KAHRA-MAA-TARSHEED program among Indian Schools and deliver awareness among school students about conservation of energy methodologies. Er. Sam Thomas, Kahramaa , Er. Abdul Sathar, Chairman, IEI QC Er. Bazeeth Ahmed, Conserve Solutions were joined with Kahramaa Delegates for the meeting.

On 20th Feb, 2020, IEI QC WOMEN'S WING Inaugurated by Er. Abdul Sathar, Hon. Chairman at Intergrated Indian Cultural Centre (IICC). Office Bearers are Er. Sabeena M K (President), Er.Buzaina Moossa (Secretary) and Shanida Jasheek – Treasurer. About 50 plus women engineers and IEI QC Executive Committee Members were attended.

On 2nd May, IEI QC conducted Non Invasive Temperature Measurement Technology program, the key note speaker was Dr.Guruprasad Sosale,Global Product Manager Non Invasive and Wireless Technologies, ABB.

Chauhan proposed vote of Thanks. 120+ Engineers attended the function.

On 15th August, IEI Conducted a webinar on Building Digital Platforms by Er. Vineet C. Nambiar, Founder of Mavericks365 (Internartional Innovation Platform) and The IBD Summit. Er. Ahmed Jassim AL Jolo was the Chief Guest and Prof. (Dr.) Swapan Bhaumik, FIE, Chairman, Committee for Advancement of Technology and Engineering was the Guest of Honour. 100+ Engineers attended the function.

On 27th Sep, 2020, IEI Qatar Chapter conducting :: Theme Webinar of Engineers Day 2020 "Engineers for a Self-reliant India" by 2 prominent Engineers. Dr. KP Fabian, Former Indian Ambassador was the Chief Guest, Er. Azmy Ameer President and Executive Director OUC Liverpool John Moores University , Er. Jassim Al Jolo was guest of honour. Ar. Subrata Mukharjee, Executive Manager, Qatar Design Consortium and Er. GNV Maruthi Kasyap, Director, VB Engg.,Vice President, SSDS. 100+ engineers attended and was a hybrid function at OUC Liverpool JM University and Zoom Online.

On 16th October, 2020, IEI Qatar Chapter conducted a Technical Webinar "Digitization in the Oil and Gas Industry: Scope and Potential". Chief Guest was Er. P. M Chacko FIE, Former President, National IEI HQ, Guest of Honour was Mr. Abdulla Al Hajri , SCM Specialist, Oil & Gas Sector. Key note speakers were Dr MP Sukumaran Nair FIE , Director, Center for Green Technology & Management, Former Special Secretary to Chief Minister, Govt. of Kerala and Prof. Dr. Syed Javaid Zaidi , Chair Professor of Chemical Engg, VP for Research and Graduate Studies office Center for Advanced Materials, Qatar University. 100+ Engineers attended the function.

On 23rd October, A memorandum of understanding (MOU) was signed between International Project Management (India) and The Institution of Engineers (India) (Qatar Chapter). It addresses areas of cooperation, Continuing Professional Development (CPD), scholarly activities and collaboration in common areas of interest. The strategic partnership enables organising workshops, seminars and other professional development activities for engineering & technology communities.

Dr Sivathanu Pillai, President of PMA and Er Abdul Sathar, Hon. Chairman of the IEI (Qatar Chapter, Dr. Sivathanu Pillai expressed his confidence in the success of the partnership.

On 12th November, 2020, IEI associated for the Webinar with World Federation of Engineers (WFEO)-CIC on the Topic Satellite Earth Remote Sensing data in Smart Cities. Chief Guest was

Er. Narendra Singh FIE, President, The Institution of Engineers (India), and Welcome Address by

Dr. TM Guna Raja FIE Chair, CIC- WEFO, Immediate Past PresidentThe Institution of Engineers (India), Guest of Honour was Mr. Azmy Ameer, President / Executive Director, OUC in partnership with Liverpool John Moores Uni-

iversity and Er Ahmed Jassim Al Jolo , President, Arab Engineers Forum , Former President, Qatari Society of Engineers . Dr. Mylsamy Annadurai, – Vice President, Tamilnandu State Council for Science and Technology, Chairman, National Design and Research Forum, Program Director, Chandrayan & Mangalyan Satellite Projects, India who is popularly known as the "moon man of India" was the key note speaker, he spoke about the satellite application in the post pandemic world.

He well explained on the subjectes of the opportunities and challenges in Engineering Past, present and future, post covid19 Scenes of un-certainities, Current Satellite population & spaceX to launch scenarios, Space Challenges and Opportunities of Engineering. 100+ Engineers were attended the event.

On 27th November, 2020, IEI QC conducted a Webinar in association with College of North Atlantic (C N A-Q) on "Technical aspects of Cooling Towers and centrifugal solid to liquid filtration system. (Sand Separators), " Chief Guest was Dr. KP Fabian, Former Indian Ambassador to Qatar, Former Patron of IEI QC, Guest of Honour Dr. Awni Al-Otoom Dean, School of Engineering Technology and Industrial Trades, C N A –Q. Guest of Honour was Mr. Azeem Abbas President, Indian Business Professionals Council (IBPC), Key note Speaker was Er. Subrata Kar FIE, MBA, Managing Director, Green Technology and Contracting. 100 + Engineers attended the Webinar.

The Institution of Engineers (India) Qatar Chapter was conducted Technical Webinar Session on "Inspirational Leadership" in association with Project Management Association - India on Saturday 6 th December, 2020. Attended around 100 plus engineers via Zoom online portal. Chief Guest- Er. Ahmed Jassim AL Jolo. President, Arab Engineers Federation was the Chief Guest. Former Chairman of Qatari Society of Engineers, he explained about the Indian initiatives to make communication technology for sustainable development goals and its growth in all over world.Guest of Honour -Mr. Azeem Abbas, – President, Indian Business & Professional Council (IBPC), Partner, DPS-MIS School , Managing Director – Al Sulaiman Jewellery, passed message of H.E Ambassador of India to the Engineers community and wished all the success and support for IEI Qatar Chapter activities. Guest of Honour -Mr. Abdulla Al Hajri , Supply Chain Management Specialist, Oil & Gas sector. He briefed about the qualities of a Leader and Leadership role and wished all the success and support for IEI activities in Qatar.

Keynote Speaker of the Event was Padmabhushan Dr. A. Sivathanu Pillai, Dr. Pillai has worked in ISRO and DRDO, for the last 40 years under the great visionary leaders Dr. Vikram Sarabhai, Prof. Satish Dhawan and Dr. APJ Abdul Kalam. He is a technology leader in the field of launch vehicles and

guided missiles. He explained about Inspirational Leaders of India who made the ISRO in heights. BrahMos is a world leader in the family of Cruise Missiles surpassing those in the developed countries. As the founder CEO & MD of the Joint Venture, Dr. Pillai is regarded as the "Father of BrahMos" which has become a role model for establishing joint ventures between the countries.

Since its inception, the Qatar Chapter of the Institution of Engineers (India) this overseas chapter has been rendering excellent professional services to the engineering community of Qatar in consistent to the objective of the Institution uninterruptedly for last 30 years. One of the major activities is the regular technical seminars and workshop conducted for the member engineers in Qatar. also promotes general advancement in engineering and technology, provides a platform for technical interaction for continuous professional development of the engineering community of Qatar.

On behalf of IEI Qatar Chapter, I extend our sincere gratitude to our sponsors, all organizations and fellow engineers for their valuable support in our activities. We look forward to your continued support in the years to come, so we could be partners in progress.

As Qatar marches ahead in progress, as a premier wealth creation and knowledge creation center in the world, Institution of Engineers (India) Qatar Chapter will also march ahead and will continue to provide its fullest professional support in the endeavor.

Thank You

Dr. ABDUL HAMEED, FIE

Hon. Secretary, IEI QC

Kinetic Footfall

Er Dilba R K
Lecturer / Programme Coordinator
OUC | Liverpool John Moores University, Qatar

Kinetic footfall is a new source of electricity, which capture the energy from human footfall to generate electrical energy. Kinetic footfall is a sustainable energy source for generating electricity without consuming any natural resources. The purpose of kinetic footfall method is to generate efficient electrical energy using complex properties of materials and movement of humans. This source system will not contribute to any environment pollutions. The main advantage of this system is that it is cost effective and occupies the very less operational area for electricity generation. This system will be best suited to crowded areas like large size stadiums, airports, railway stations, shopping malls and other high-density walking areas. Road pavements and footpaths are the most suitable energy floors to collect kinetic energy. Pavegen is a company who is producing the kinetic footfall tiles.

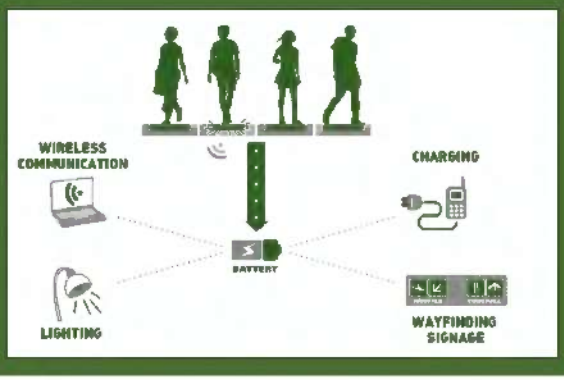
How it works:

- The concept of kinetic footfall based on the principle of piezoelectricity.
- When the material is compressed the atoms press together, enough to change the prop erties of electrons.
- When the pressure is removed the electrons return to their original shape.
- If the piezoelectric compounds are fitted with an auxiliary circuit then, the returning elec trons will be captured and used to create a micro-circuit.

- The energy floor or footpath is constructed using this piezoelectric compounds to cap ture the electrons.
- When humans start to walk on this floor, the pressure developed on the floor.
- The pressure or kinetic energy will be collected by the piezoelectric compounds of the floor.
- Later, the energy floor converts the kinetic energy into electrical energy.

Benefits of Kinetic Footfall:

- Emits no pollutants.
- Generate no hazardous waste because most of the materials can be recycled.
- Collection and storage of energy are simple and easy.
- Efficiency is more compared to conventional methods.
- Very durable.
- Easy to adapt or implement in any location.



The Institution of Engineers (India)

Qatar Chapter

IEI Qatar Chapter conducting :: Technical Webinar

"Digitization in the Oil and Gas Industry: Scope and Potential"

Chief Guest :

Er. P. M Chacko FIE
Former President,
National IEI,
The Institution of Engineers (India)

Guest of Honour

Mr. Abdulla Al Hajri
SCM Specialist,
Petrochemical Sector

Keynote Speaker

Dr. MP Sukumaran Nair FIE
Director, Center for Green Technology & Management
Former Special Secretary to Chief Minister, Govt. of Kerala.

Guest of Honour

Prof. Dr. Syed Javaid Zaidi
Chair Professor of Chemical Engg,
VP for Research and Graduate Studies office
Center for Advanced Materials,
Qatar University

IEI – Technical WEBINAR on 16th Oct at 6:00-7:00 PM

Zoom : Meeting ID: 968 2653 8144 Passcode: IEIQatar

iei.qa

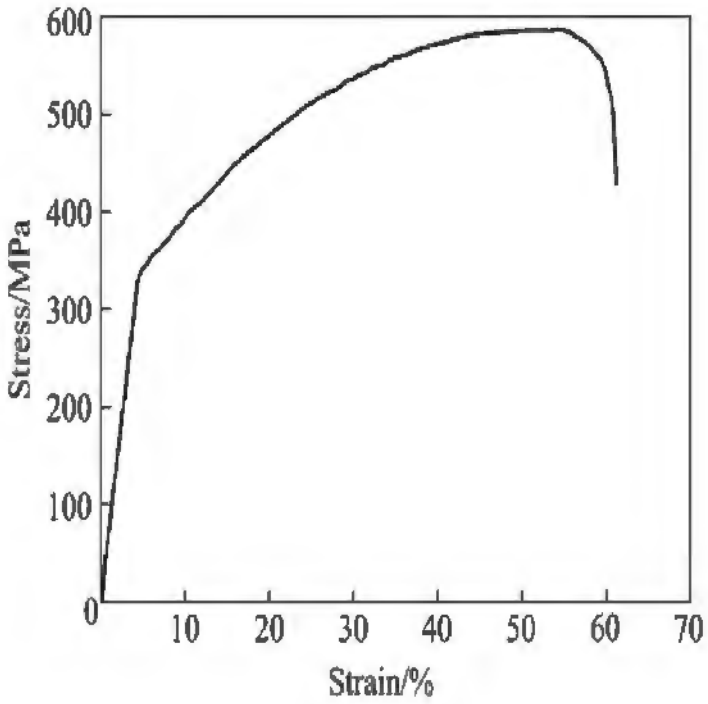
DESIGN OF TRUNNION MOUNTED BALL VALVE

INTRODUCTION

Process plants consist of hundreds, or even thousands, of control loops all networked together to produce a product to be offered for sale. Each of these control loops is designed to keep some important process variable such as pressure, flow, level, temperature, etc. within a required operating range to ensure the quality of the end product. Each of these loops receives and internally creates disturbances that detrimentally affect the process variable, and interaction from other loops in the network provides disturbances that influence the process variable.

LITERATURE SURVEY

This chapter describes the literature collected for the study. The ball valve studied in this work has a segmental structure, as shown in Fig.2.1. With trunnion mounting, the ball is supported by the upper stem and lower stem at the opposite position. In Trunnion mounting at the bottom of the ball there will be a central rod (which is called trunnion) which is similar to the dimension of the stem, and the trunnion is supported to the bottom boss. The bearings act on the trunnion which may be integral to the ball. The ball does not shift as it does in a floating valve to press the ball into downstream seat. Instead the line pressure forces the upstream seat onto the ball to cause it to seal.



Generation :

Wastewater is the polluted form of water generated from rainwater runoff and human activities. It is also called sewage. It is typically categorized by the manner in which it is generated—specifically, as domestic sewage, industrial sewage, or storm sewage (stormwater).

Hazards involved in waste water/ sewage

Sewage and wastewater contain bacteria, funguses, parasites, and viruses that can cause intestinal, lung, and other infections. Personal protective Equipment's and Safe work practices shall be followed while handling sewage water.

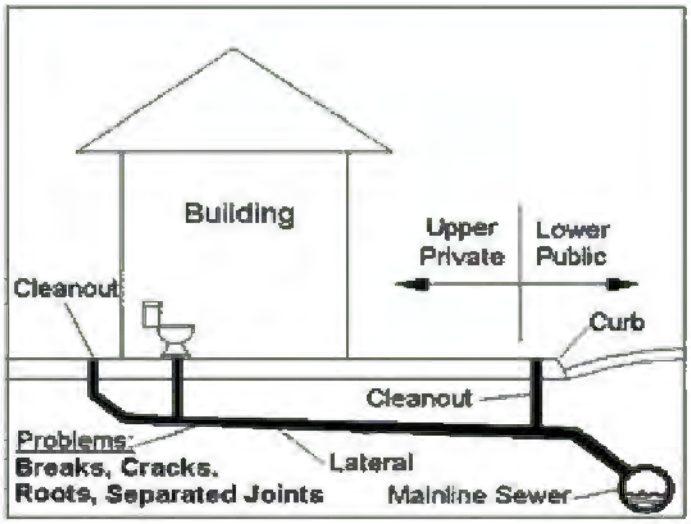
Various gases present in sewage water are

- hydrogen sulfide.
- methane.
- ammonia.
- carbon dioxide.

Hydrogen sulfide is the primary gas in sewer gas. According to research , hydrogen sulfide has shown to be toxic to the oxygen systems of the body. In high amounts it can cause adverse symptoms, organ damage, or even death.

Collection and Transfer

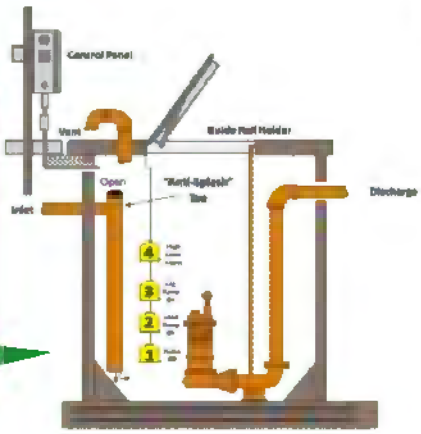
In most cases the wastewater collection system conveys wastewater by gravity utilizing the natural slope of the land. The system composed of gravity pipes, manholes, tanks, lift stations, control structures, and force mains that gather used water from residential and nonresidential customers and convey the flow to the wastewater treatment plant



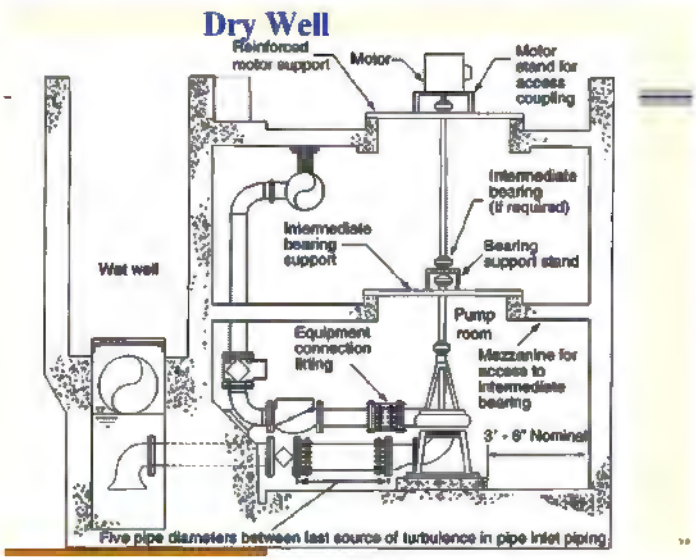
Lift stations & Intermediate Pumping stations

Wastewater lift stations are facilities designed to move wastewater from lower to higher elevation through pipes. ... Centrifugal submersible pumps are commonly used in lift stations. A trapped air column, or bubbler system, that senses pressure and level is commonly used for pump station control. Hydrostatic and ultrasonic level transmitters are also used for the level measurement and control .

Lift station reference diagram



Intermediate Pumping station reference diagram



Intermediate pumping stations are higher versions of Lift stations. These facilities receives its catchment sewage and other lift station sewages. higher capacity Odour control units are equipped in the stations to treat the hydrogen sulfide released during the pumping process .

Sewage treatment plant

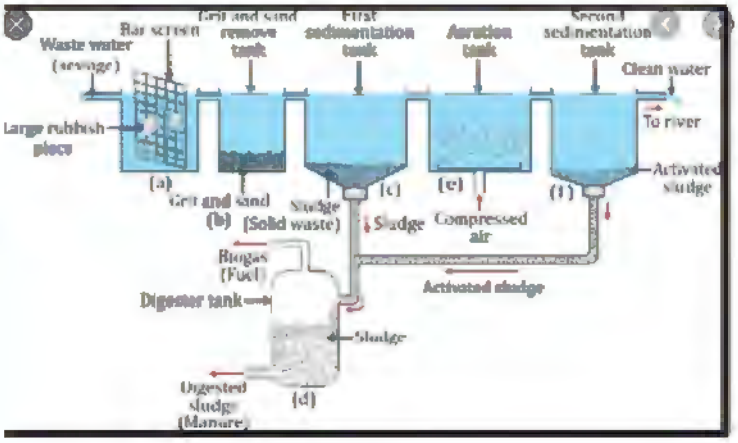
The conventional sewage treatment comprises the following process

The Wastewater Treatment Process

- Stage 1— Course Screening (generally in the main forwarding .pumping station)
- Stage 2 — Fine screening (Mechanical separation)
- Stage 3 – Grit removal (centrifugal separation)
- Stage 4 — Primary Clarifier.(applies when stage 2 & stage 3 not available)
- Stage 5— Aeration. ...
- Stage 6 — Secondary Clarifier. ...
- Stage 7— Sand filtration (Pressure sand filtration , Gravity sand filtration)
- Stage 8- Ultrafiltration
- Stage 9 – UV treatment
- Stage 10 - Chlorination (Disinfection) ...
- Stage 11 — Water Analysis & Testing. ...
- Stage 12— Effluent Disposal. (treated sewage effluent)

The sludge generated during the process is treated separately through thickening process and centrifugal separation.

Schematics of sewage treatment process



Use of Treated sewage Effluent (TSE)

TSE used for irrigation, gardening, construction activities, dust suppression etc

Use of Processed sludge:

Processed sludge is used as fertilizer for the cultivation

Prepared by

Engr. Sreejith Karunakaran

Sr Mechanical Engineer (Sewage treatment plant)

Mob: 33106199

Email : sree3727@rediffmail.com

Qatar

"Hard work performed in a disciplined manner will in most cases keep the worker fit and also prolong his life."

Mokshagundam Visvesvaraya

The Institution of Engineers (India)

(Established 1920, Incorporated by Royal Charter 1935)

Qatar Chapter

(Under the aegis of Embassy of India)

Patron:- **H.E. The Ambassador of India to Qatar**

Email: ieiqatar@gmail.com

Women Engineers' Wing

Inauguration on

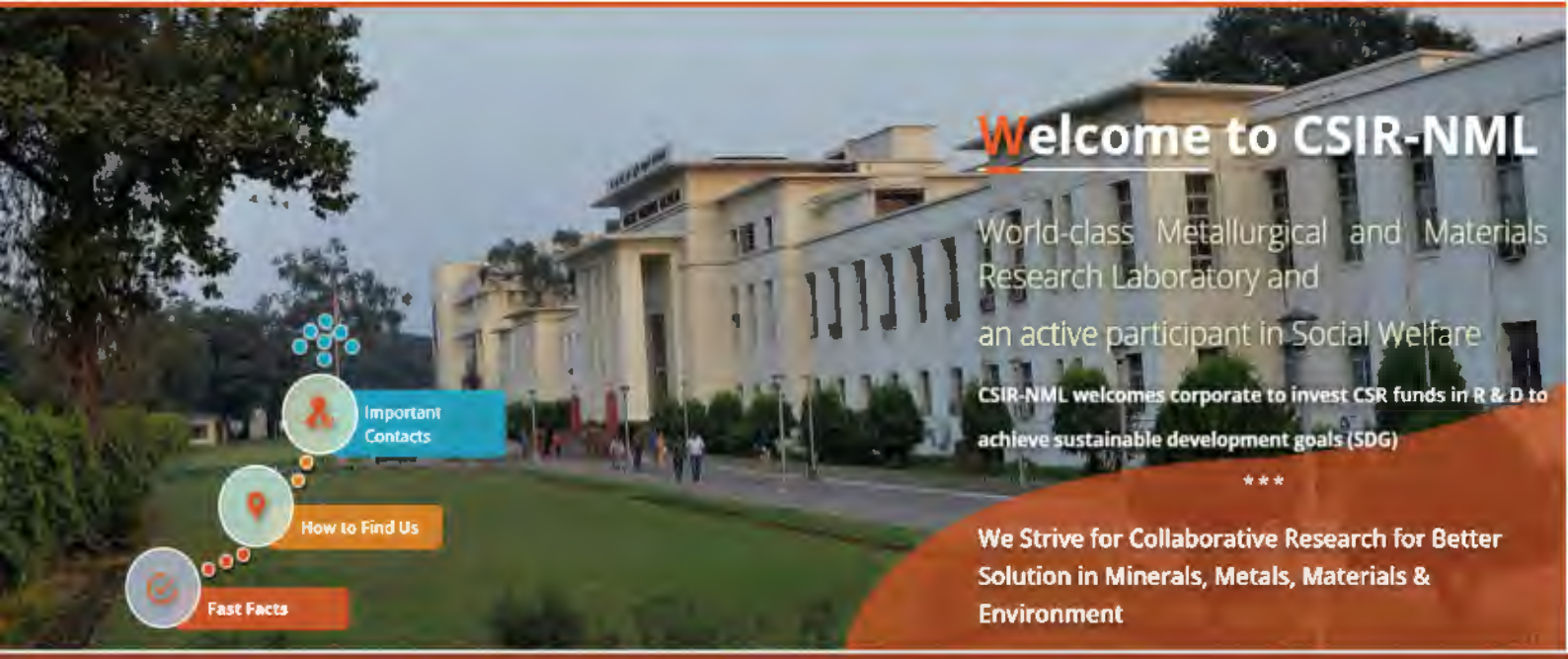
20th February, 2020 @ 7:00-8:00 PM

at Integrated Indian Cultural Centre (IICC)

behind Teyseer Petrol Station,

Thumama, Doha

Please confirm your availability at ieiqatar@gmail.com or
Contact Mob: 66808896 / 55873526



CSIR-National Metallurgical Laboratory (CSIR-NML): 70 years of unalloyed excellence

Introduction

CSIR-National Metallurgical Laboratory (CSIR-NML) is a premier Indian research organisation dedicated to various facets of Minerals, Metals and Materials – science, technology, industrial services and human resource development. Since inception, CSIR-NML has diversified its research areas ranging from extractive metallurgy, alloy development and import substitution, mathematical and physical modelling of metallurgical processes, mineral research, advanced materials and materials tailoring, integrity evaluation of critical industrial components, surface engineering and cleaner and sustainable metals production. The Laboratory has made notable contributions in the areas of mineral beneficiation and agglomeration, ferrous and nonferrous metallurgy, alloy development and processing, materials science & engineering and, resource conservation & environment protection.

The foundation stone for National Metallurgical Laboratory was laid by Hon'ble Sri C. Rajagopalachari on 21st November, 1946. It was formally inaugurated and dedicated to the nation on 26th November, 1950 by Pandit Jawaharlal Nehru "in a spirit of hope and in a spirit of faith in the future'. The laboratory was an element of Sir Shanti Swaroop Bhatnagar's vision of providing India with a network of research institutions for taking the country ahead in science and technology. CSIR-NML played a significant role in the industrial revolution of India starting from 1950 especially in the areas of mineral processing, iron and steel making, ferroalloys and extraction of non-ferrous metals, notably magnesium. Asia's largest creep testing facility was also set up at CSIR-NML in the early 1970s and even today it ranks as the second largest creep testing lab in Asia.

A historical account of past achievements (1950-2010) of CSIR-NML is preserved in the

Diamond Jubilee commemorative volume 'la vintage metallurgie: 60 years of marriage of science to industry' (http://eprints.nmlindia.org/4360/).

Vision

To become a global leader and an internationally benchmarked laboratory in mineral and metallurgical research and development. To become a self-sustained technology centre in minerals, metals and materials.

Mission

- To address the needs of the minerals and metals industry through innovative research solutions conforming to sustainable development goals
- To create niche areas in alloys development and advanced materials technology
- To generate expertise in engineering critical assessment of in-service industrial structural components through multidisciplinary networked research initiatives
- To develop innovative solutions for resources conservation through recycling and advanced waste management strategies
- To provide quality services for materials testing and evaluation, calibrations and certified reference materials
- To fulfill societal obligation by implementing Skill India mission, popularizing science among students, low cost technology development for rural artisans, etc

Research and Development

CSIR-NML continues to play a vital role in the quest of the country towards scientific and technological leadership and providing scientific solutions to the industries in the areas of minerals, metals and materials. CSIR-NML is also carrying out major activities for creating awareness among the common masses on issues relating to health, environment, rural technology and sustainable development. With a strong and committed staff having a wide spectrum of expertise and modern facilities, CSIR-NML will complete 70 glorious years of existence on 26 November 2020, and will forge ahead to meet the challenges of the global economy and reach greater heights.

The Laboratory has kept pace with the changing research scenarios and needs of the country. In the last few years, greater emphasis was given to industry sponsored research and, alignment with government program; namely, Make in India, Innovate in India, Strategic sector needs, Swatch Bharat, Societal and skill India, etc. The activities of the Laboratory touch upon several major sectors relevant to the growth of India, including iron and steel, power and energy, oil and gas, automotive, railways, strategic, societal, and others.

Glimpses of recent/ongoing activities of the Laboratory is presented here for the benefit of our stakeholders and, seeking their partnerships for further advancements.

Steel

In India, nearly thirty percent of steel is produced by secondary steel producers using induction furnace route. High phosphorous content makes the steel substandard and unsuitable for structural applications. CSIR-NML in association with All India Induction Furnace Association (AIIFA) and Ministry of Steel has developed a flux to reduce the phosphorus level from 0.07-0.09% to BIS prescribed limits of < 0.05%. The flux which is tested under industrial conditions has the potential to benefit large number of secondary steel producers. Efforts are on to fine tune the flux chemistry and its usage with high lining life.

Research pursuits of CSIR-NML are also aligned with the material needs of the sector. A wear resistant steel was developed by the Laboratory to address the silt erosion problem during hydel power generation in the Himalayan region. Newer initiatives from the Lab include development of advanced electrical steels and, evaluation of materials for the futuristic ultra-supercritical power plants

Coal

Significant efforts are directed on coal and the activities ranging from prospecting using 'coal core analysis' to beneficiation for ash removal and, value added products from fly ash. Innovative flowsheets involving dry beneficiation are developed to reduce ash in the coals of different origins. CSIR-NML column technology which was earlier exploited in commercial operations for beach sand minerals, limestone and barite, is now successfully tested for coal in the columns set-up at mine sites.

Magnesium

Magnesium holds the key for the success of the national programmes for titanium and zirconium extraction, and, next generation Mg-alloys for the automotive sector. CSIR-NML's contribution to Mg technology development goes back to 1971, when a 250 tonnes per annum pilot plant based on the Pigeon process was commissioned. The plant and technology were subsequently transferred to an industry, M/s Southern Magnesium Ltd, who was the only commercial producer of Mg in India until 2002. CSIR-NML, has developed a novel magnesium extraction technology (Magnetherm process) which employs moderate vacuum and involves direct heating. The technology was developed on a 300 kg pilot scale using an indigenously fabricated reactor. Based on large number of pilot plant trials, design and operational data have been generated for further scale up to ~ 1000 kg reactor.

Tungsten, Sodium and Gadolinium

In the strategic sector, specific focus of the Laboratory is on extraction and processing of metals, namely tungsten, sodium and gadolinium. Efforts are directed towards exploitation of low grade indigenous resources and recovery from scraps generated during processing and post usages of components. To address immediate needs, NML has developed and commercialized a technology for the recovery of tungsten from a large variety of W-bearing scraps. The developed technology is superior in terms of tungsten recovery (> 90%), co-recovery of associated metals (e.g. Co, Ni), process economics and environmental considerations. Indigenous technologies for sodium and gadolinium, essential for atomic energy programme were successfully developed. Sodium is produced using electrolysis cells from 50 kVA to 500 kVA capacity, and further scale up of the process by industry is in progress. Similarly, high purity gadolinium was produced by fused salt electrolysis.

Potash

Almost the entire requirement of potash for our country is imported since resources of traditionally used chloride ores are scarce. Technically and economically attractive processes to recover potash from indigenously available non-traditional silicate resources, notably feldspar and glauconite are being developed. An innovative process, possibly the first of its kind, has been developed at CSIR-NML under an industry sponsored programme. The process, which permits high recovery of potash along with all other constituents present in feldspar (e.g. Si as Fe-Si) has the potential to radically change the technology scenario. Encouraged by the success of the process at 10 kg scale, it is now being considered for further scale up and commercial exploitation. Process flowsheets based on pyro-/hydrometallurgy were developed and evaluated for the recovery of potash from glauconite sand. In yet another innovative development, mechanical activation of glauconite was used to alter its cation-exchange capacity and to develop a greener option which would permit its direct usage as a source of potash.

Industrial wastes valorizations and effluents treatment

Solid wastes and effluents are of major concern in metallurgical industries from the point of view of resource conservation and environmental considerations. For example, large quantities of solid wastes (e.g. slimes and fines during iron ore mining, slags, mill scale) and effluents (e.g. pickle liquor) are generated during iron and steel making operations. NML has developed a number of processing options and value added products to address the problem. Some of these have been tested in real plant conditions and include: DRI from slimes/-mill scale using tunnel kiln; mill scale briquettes as coolant in LD converter steel making; pig iron from the smelting of self-reducing briquettes (slime and Jhama coal) in a Low shaft furnace; and, magnetite for heavy media separation using high pure hematite produced during pickling operation as raw material. Strategies for the recycling and reuse of LD slag have been developed using smelting in

a 175 kVA furnace and the processes are available for further probing on industrial or semi-industrial scale. By smelting, phosphorus is removed and the resulting slag is suitable as a source of lime and cementitious material. In yet another significant development, technologies have been developed and tested for the production of a wide spectrum of value added iron oxide pigments.

E-waste processing and urban ore recycling centre

NML has several programmes and projects to address metals recoveries from urban ores which includes discarded cellphones, computers, magnets, flurescent bulbs, batteries, etc. A dedicated urban ore recycling centre has been established. A major programme of Li recovery from eV batteries is underway. Several technologies have been licensed and commercialized in this area.

Devices and Equipment development

In recent times, the Laboratory has paid increasing attention to the design and development of equipment which are tailor-made for specific metallurgical research and tests. The objective is also to minimize dependence on imported equipment which are often priced exorbitantly. Under one such initiative, an annealing simulator was developed which offers exciting possibilities to simulate batch and continuous annealing processes commonly practiced in steel industry (e.g. IF steel with desirable dew point setting, ultrafast cooling for dual phase or complex phase steel annealing cycles, etc.). Similarly, several devices were developed for on and off site NDT of industrial components and materials. One of these, MagStar, a portable magnetic sensing device for Non-destructive Evaluation of Steel Structures/ Components measures Magnetic Hysteresis Loop (MHL) and Magnetic Barkhausen Emissions (MBE). MagSys, a Giant Magneto Impedance (GMI) based magnetic sensing device is also ready for commercialization as a structural health measuring tool. The device is capable of detecting very low magnetic fields and magnetic phases. An NDT device for detecting defects in wire during fabrication has been developed and installed at the sponsors site. In collaboration with our sister laboratory, CSIR-CGCRI, various applications of FBG sensors including temperature profiling of continuous casting moulds, have been perfected.

Functional Materials

Several new alloys and materials have been developed based on the specific needs of our clients and collaborators. A collagen-graphene composite was developed for supercapacitive applications for a Sri Lanka based multinational. Several advanced coatings have been developed at the behest of aerospace multinationals with green protocols and materials in mind. Advanced steels development and their qualifications have been carried out successfully, in collaboration with various steel producers.

Technologies for rural artisans

Brassware artisans across the country are at a crisis because of stiff competition from China. Further, there is the risk of the age-old practices becoming extinct with loss of livelihood. The home based traditional pit furnaces used by

the artisans are fuel inefficient and polluting. As part of a National Innovation Council initiative, under CSIR800 programme, NML has developed a cost effective, fuel efficient and eco-friendly coke based brass melting furnace for the metal artisans utilizing waste heat recuperating system and arresting suspended particulate matter (SPM) inside the pit. A few such furnaces were installed in Moradabad, Uttar Pradesh and in Balasore, Odisha. Simultaneous efforts are on to enhance awareness and training of artisans. CSIR-NML has also developed an efficient, low cost anti-tarnishing lacquer to prevent tarnishing and to maintain the metallic cluster of brass handicrafts. The developed lacquer is technically and cost-wise superior to the lacquers available in market. The technology has been transferred to a private entrepreneur for its commercial production.

CSIR Integrated Skill Initiative

In 2016, CSIR launched CSIR Integrated skill training initiative to equip young minds with the necessary technological skills through exposure to research laboratories at national facilities that will address the critical need for the technical skill gap created by the enormous usage of advanced technology. The purpose of CSIR Integrated skill initiative is to encapsulate all CSIR skill/training programme under one umbrella which will cater to diverse cross section of people at various levels beginning with school dropouts to Farmers to ITI diploma holders to graduates.

Under CSIR integrated skill initiative, CSIR-NML offers skill training ranging from basic training for rural youths, summer/winter internship for undergraduate students, MTech/PhD dissertation guidance for post graduate students, apprentice training for ITI/Diploma/Graduate engineers and specialized training for professionals from industry. These training programmes vary from 2 days to 1 year in duration. Main focus is to develop skills in the area of metals, metallurgy, manufacturing, waste utilization, soft skills and entrepreneurship development.

CSIR Jigyasha

Under the societal mission programme, the Jigyasa-School-NML interactive programme has become more popular and increasing the number of participating school students and teachers. The programme has been designed to give the students, teachers and professional an exposure to the modern laboratory environment and to develop a science temperament in them for their career development. This programme has been carried out at CSIR-NML since June 2011 and during that period to till date, a total 17,567 students from 211 School along with teachers have participated in this programme and derived the benefits. Since School-NML Interactive programme cover 8 years' spans of time drawn a wide publicity and appreciation from the school/general public and is very well covered by the press and media.

Epilogue

Since the inception, CSIR-NML is striving to achieve the sustainable development goals (SDG) through technology development for the uilization of natural resources and by translating them to the industries. The vision set forth during the first decade to make India ÄtmaNirvar" remains relevant today. The stepping graph of performance in terms of patent

filing, technology transfer, revenue generation, research papers publications, global visibility of research can be observed through citations and technology transfer. The current trends and future directions of research and development at NML propelled by national aspiration, energy, environment, sustainability, strategic goals, inclusion and equity are delved upon in the context of challenges emanating from the current geopolitical scenario and the country's needs.

SPEAKER 2

Dr. Mita Tarafder

Chief Scientist,
Head, Knowledge Resource and Information Technology Division
CSIR - National Metallurgical Laboratory

Contact Address: director@nmlindia.org

Site link: www.nmlindia.org

The Institution of Engineers (India)

Qatar Chapter under the aegis of Embassy of India
(Licensed with Qatar Financial Centre)

Federation of Engineering Institutions of Asia and the Pacific (FEIAP)

Technical Webinar Topic: Building Digital Platforms

Date & Time : Saturday, 15th August, 2020 @ 5:30-6:30 PM

Chief Guest:
Er. Ahmed Jassim Al Jolo.
Former President, Qatari Society of Engineers

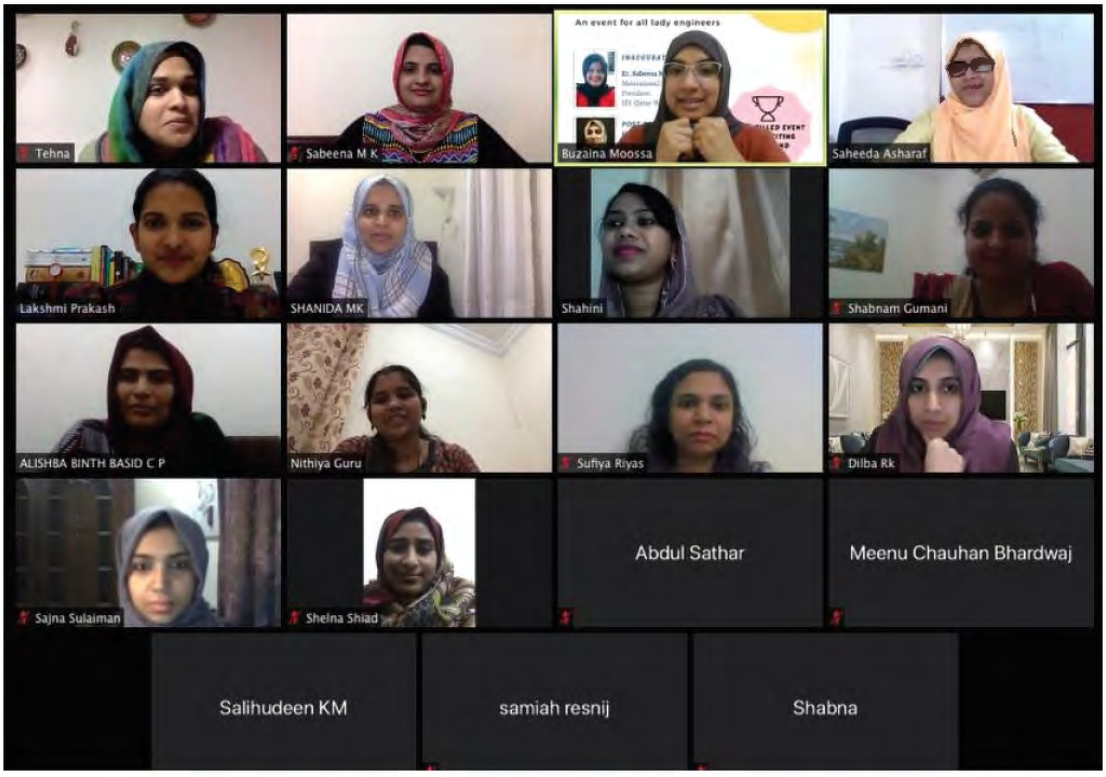
Guest of Honour:
Prof. (Dr.) Swapan Bhaumik, FIE, Chairman, Committee for Advancement of Technology and Engineering

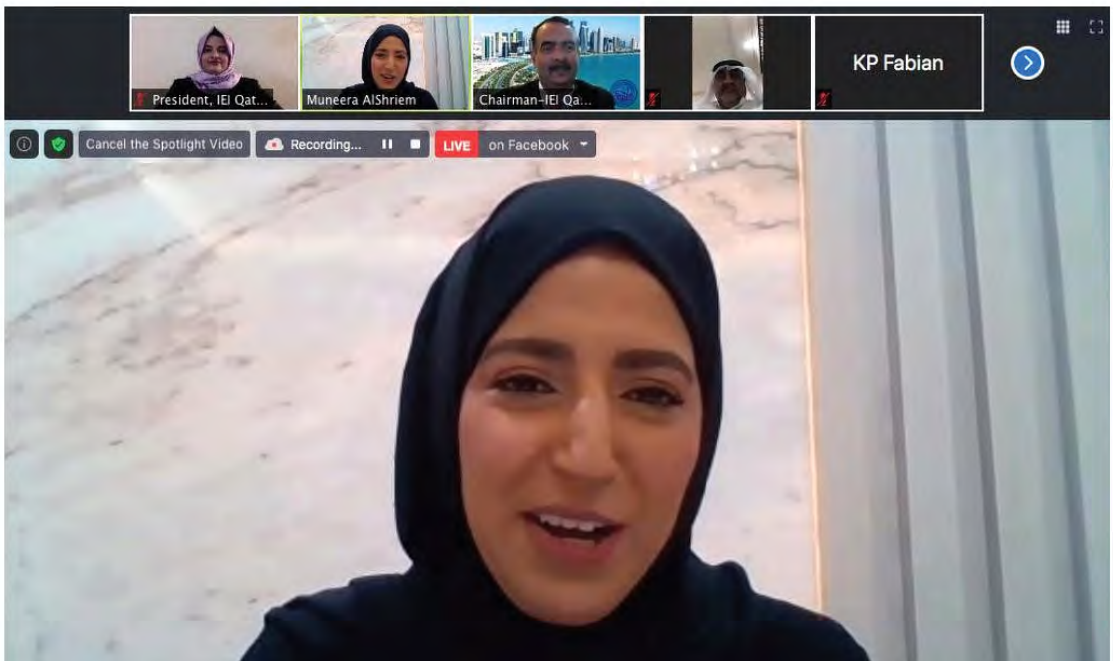
Guest Speaker:
Er. Vineet C. Nambiar, Founder of Mavericks365 (Internartional Innovation Platform) and The IBD Summit

zoom Meeting ID: 986 5050 5129
Passcode: IEIQatar

For more details, please visit **iei.qa**

IEI Women's Wing Program





Hello Everyone! Let me tell you a story...

Once upon a time in Doha, on a LEAP DAY!

Left to right: Chairman Abdul Sathar, Sabeena MK, Muneera (29 Feb, 2020)

LET'S SHINE

ON

JUL 03 2020

An event for all lady engineers

INAUGURATED BY

Er. Sabeena M K
Motivational Speaker
President
IEI Qatar-Womens Wing

POST COVID HOME DESIGNING

Er. Dilba Midlaj
Joint Secretary (Technical)
IEI Qatar-Womens Wing

A FUN FILLED EVENT WITH EXCITING GAMES AND REWARDS

DATE: JULY 3,2020 (FRIDAY)
TIME: 7PM - 8PM
VENUE: ONLINE (ZOOM MEETING)

The Institution of Engineers (India)
QATAR CHAPTER - WOMEN's WING

Meeting ID:
819 0064 6879
Password:
099483

IEI Women's Wing Program

IEI Women's Wing Program

blended the clay with joy and made a signal light and dis- the paper to resemble signal- light pole.This activity helped product was a tre cherish for the youn

ment and risk management, and global financial trends are of growing importance."

views 10.0, a strategic finan- cial econometric forecasting tool used worldwide.

'Tarsheed' programm

S Indian School

TRIBUNE NEWS NETWORK
DOHA

THE 'Tarsheed' energy conservation programme by Qatar General Electricity and Water Corporation (Kahramaa) was launched at the MES Indian School, in association with the Institution of Engineers India (IEI) Qatar Chapter.

At the inaugural ceremony, Abdul Sathar, honorary chairman of IEI, said the programme would make the students socially responsible by helping them understand the importance of water and energy conservation in their life.

Hameeda Kadar, principal of the school, welcomed IEI's student-friendly activities that will benefit the entire community in Qatar by transforming students into responsible citizens.

Baseeth Ahmed, director, Conserve Engineering, through a PowerPoint presentation explained the importance of sustainable development. Sabeena and MeenuChauhan, president and secretary, respectively, of IEI Women's wing, praised the initiatives taken up by the association.

At the event, Hameeda Kadar was honoured by IEI officials and Ritish Nanda for winning the 'Jwala Women's Award 2020'.

Mammadhan Mambally, chief coordinator for students' activity, coordinated the event and welcomed the gathering. Anand Nadgir proposed the vote of thanks.

MES Indian School Principal Hameeda Kadar and officials of the Institution of Engineers India during the launch of the 'Tarsheed' programme recently.

Ethical Hacking

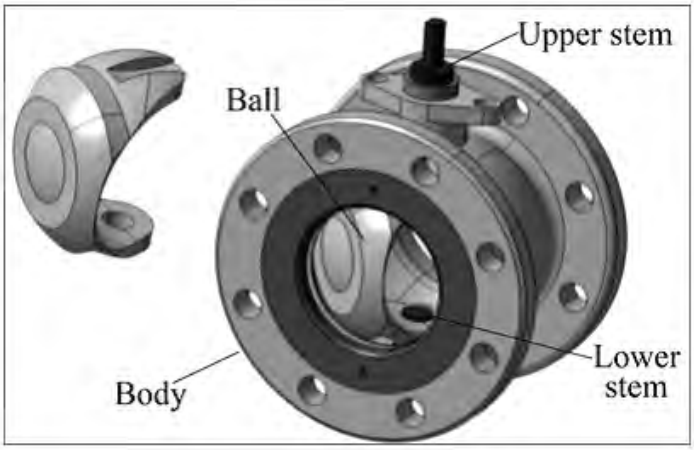
Ethical hacking is a practice involving deployment of hacking techniques to identify vulnerabilities in a given information system, software or program. The importance of ethical hacking is profound in today's world as everything is just on a fingertip in this online world and golden age of data exploits. Most of the famous banks and corporates hire ethical hackers to check the vulnerabilities of their own systems, websites and software. Ethical hacking help to identify the risk in a business and to protect it, to detect where professional hacker works basically, Risk assessment, Penetration Testing, Vulnerability Assessment, where people work on incident handling or Forensics and then to have Precaution & Recovery.

There are five main steps in ethical hacking. They are:
1) Information Gathering reconnaissance, foot printing.
2) Scanning
3) Gain access and hack into the system.
4) Hack into the network.
5) Maintain access to the victim machine and then cover the tracks.

First step is to collect information from target websites (e.g. session id, platform, technologies, organization details like email, phone number and fax) using firebug any other modern tools and web data extractor which demonstrate steps of Reconnaissance. Then UDP & TCP packet crafting techniques using hping3. After this, access the victim machine using advanced tools like the Metasploit exploitation toolkit. It is very important to maintain the acquired connection. Finally, the ethical hacker will be able to continuously access the victim computers. Banks and corporates that hire professional ethical hackers and allow them to hack their own systems which will help them to identify the loopholes in their own system so that they can improve the security of their systems and software.

Professional ethical hackers have high scope in the job market as most of the main businesses in the world hire them to protect their own systems and software. There are lots of courses and certifications available to help you to become a professional ethical hacker.

Er. Sabeena M K, MIE
PMP, ITIL, M.Tech, B.Tech, CCNA
President – IEI Women's Wing Qatar



on the ball. At low pressure seat tight sealing is ensured by the preload of the spring acting on the seat rings. Along with the pressure increasing, the process medium pushes the seat ring against the ball to provide additional load for tight sealings.

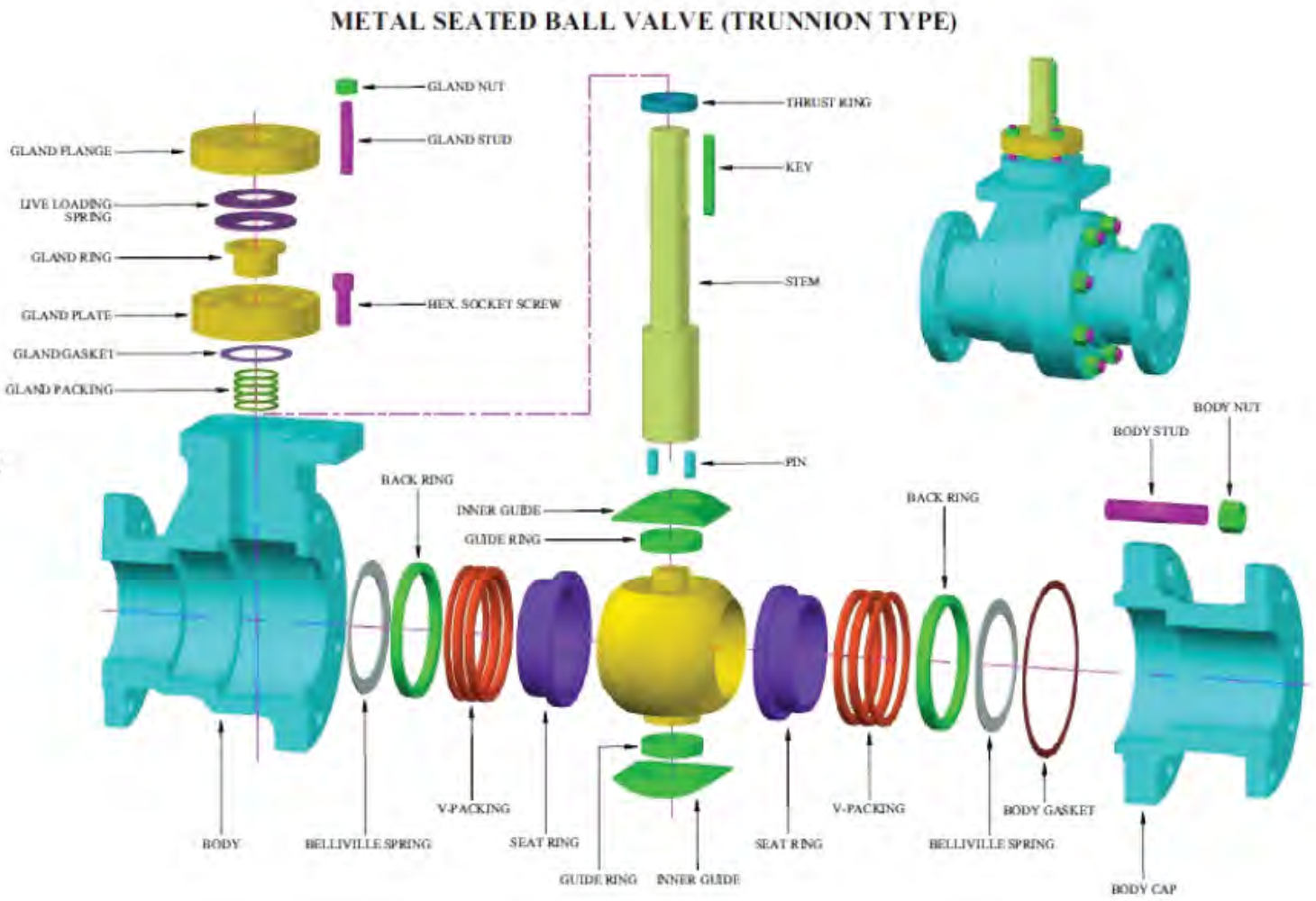
DESIGN FEATURES [TRUNNION-MOUNTED BALL VALVE]

General Design

The ball is fixed by Trunnion shaft and the seat rings are floating, free to move against the ball along the valve centre line. The Trunnion shaft along with the bearings absorbs the side load created by the pressure acting

Parts of Ball Valve

Gives the disassembled view of the metal seated Trunnion mounted ball valve. Different parts of the valve, their materials and quantities are clearly explained from Table5.1 which is below the figure.



The Institution of Engineers (India)

Qatar Chapter

PROJECT MANAGEMENT ASSOCIATES
NATIONAL ASSOCIATION FOR PROJECT PROFESSION
A Not for Profit Registered Society

Memorandum of Understanding (MOU)
Digital Signing Ceremony

The Institution of Engineers (India) - Qatar Chapter

&

Project Management Associates, India

Indian Member of PMA India | IPMA International project management association

23rd October, 2020 @ 10:00-10:30 AM (QST)

Er. Abdul Sathar FIE
Hon. Chairman

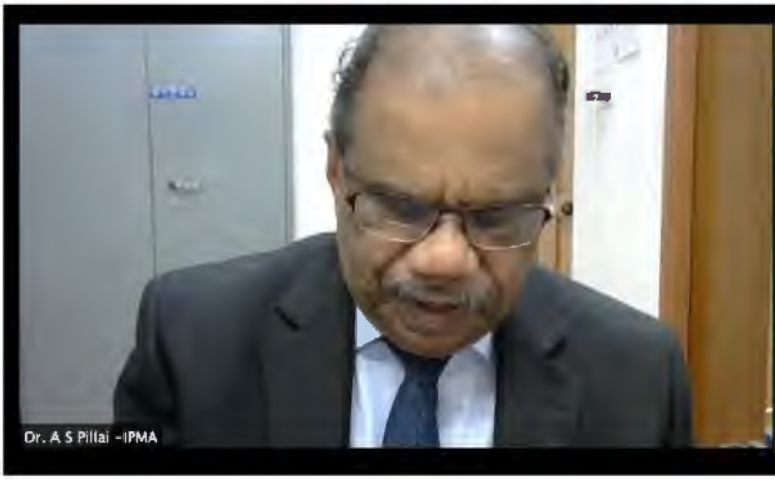
Dr. A. Sivathanu Pillai Ph.D
Hon. President

iei.qa

zoom

Meeting ID: 968 2653 8144
Passcode: IEIQatar

pma-india.org



STRUCTURAL MODELING

After checking the design, valves are modeled based on 2D drawings provided using ProE wildfire software.

ProE wildfire software is a modeling tool used by electromechanical industries to design and model the parts.ProE wildfire creates simple and complex designs. Pro/ENGINEER Wildfire 4.0 offers hundreds of enhancements that optimize global design processes including electromechanical design. With increased performance and new product design

STRUCTURAL ANALYSIS

Critical parts of the ball valve are body, ball and stem where the fluid pressure directly acts. Structural analysis is done on the critical parts to find the maximum VonMises stress and checked whether the maximum VonMises is within the yield limit. Design of the part has to be changed or the material has to be changed if the maximum VonMises stress crosses the yield point. Structural analysis is done separately on these three parts at room temperature based on some assumptions using Ansys11 software.

Ansys software is analysis software mainly used in mechanical firms to analyze solid parts, fluid flow etc. structural analysis, vibration analysis, thermal analysis etc can be done using Ansys software which is very helpful in the design of mechanical parts.

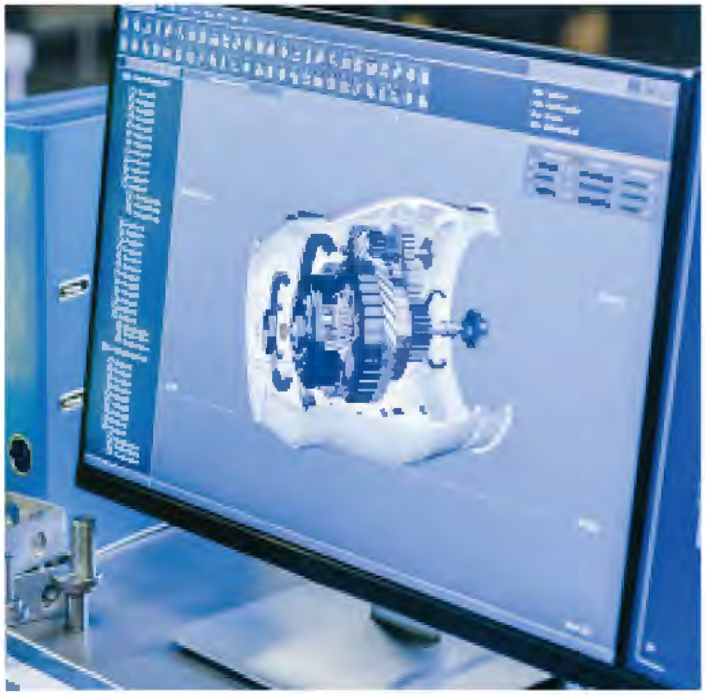
OPTIMIZATION OF REMOVAL RADIUS AND FILLET RADIUS

Mesh size varies from course mesh to fine mesh in Ansys software and its size is indicated from 1 to 10 in it. '1' will be the finest mesh and '10' is the course mesh. But if the shape of the model changes; size of the mesh has to be manually selected by the user.

CONCLUSIONS

A detailed study about the type of valves and their applications are done in this work. Study of geometry and application of Trunnion mounted metal seated ball valve was conducted. Designed a 30 inch 300 pressure class Trunnion ball valve using International standards like ASME B16.34 and API6D. Designed parts of the ball valve are modeled and assembled using .

Azeem Salahudeen, BE, Mechanical Engineer



The Institution of Engineers (India) delegates with Director, QFC

Centenary International Engineering Congress in 26th Sept, 2019








Centenary International Engineering Congress in 26th Sept, 2019

The Institution of Engineers (India)

Qatar Chapter under the aegis of Embassy of India
(Licensed with Qatar Financial Centre)

Please be requested to support the "International Conclave on Emerging Technology" organized by Techno College of Engineering Agartala-India.

Date & Time : Thursday, 27th August @ 3:30-6:00 PM – Qatar Time

Live at YouTube

Technocollegeofengineering

Panelist: Er. Abdul Sathar FIE,
Hon. Chairman, IEI Qatar Chapter

About The Panel Members

Name : Er. Abdul Sathar

Participating from: Qatar

Organization: Qatar Primary Materials Company

Designation: IT Project Manager

Field and Expertise :
IT Management, SAP & Oracle ERP Business Solution. Information Security Management, Risk Management.

Discussion Point:

1. What is the future trend for IT with respect to the emerging technologies like Data Science,AI and Machine Learning?
2. As an IT Manager do you think that the mid and large companies would invest more in the emerging technologies , more specifically in terms of hiring by next 4 to 10 years?

AN INTERNATIONAL CONCLAVE OF EMERGING TECHNOLOGY

The Institution of Engineers (India)

Qatar Chapter

كليـــــة شمـــــال الأطلنطـــــي في قطـــــر

COLLEGE OF THE NORTH ATLANTIC - QATAR

Webinar:: Technical aspects of Cooling Towers and centrifugal solid to liquid filtration system. (Sand Separators)

Chief Guest :
Dr. KP Fabian
Former Indian Ambassador
to Qatar
Former Patron of IEI QC

Guest of Honour
Dr. Awni Al-Otoom
Dean, School of Engineering Technology
and Industrial Trades,
CNA-Q

Welcome Address
Er. Abdul Sathar FIE
Hon. Chairman,
The Institution of Engineers (India)
Qatar Chapter

Key note Speaker
Er. Subrata Kar FIE, MBA
Managing Director
Green Technology and Contracting

Guest of Honour
Mr. Azeem Abbas
President ,
Indian Business Professionals Council
(IBPC)

zoom

IEI – Technical WEBINAR on 27th Nov at 6:00-7:30 PM

Zoom : Meeting ID: 968 2653 8144 Passcode: IEIQatar

The Institution of Engineers (India)

Qatar Chapter

IEI Qatar Chapter conducting :: Theme Webinar of Engineers Day 2020

"Engineers for a Self-reliant India"

Chief Guest :
Dr. KP Fabian
Former Indian
Ambassador to Qatar

Guest of Honour
Er. Ahmed J. Al Jolo
Former Chairman,
Qatari Society of Engineers

Guest Speaker
Er. GNV Maruthi Kasyap
Director, VB Engg.,
Vice President, SSDS

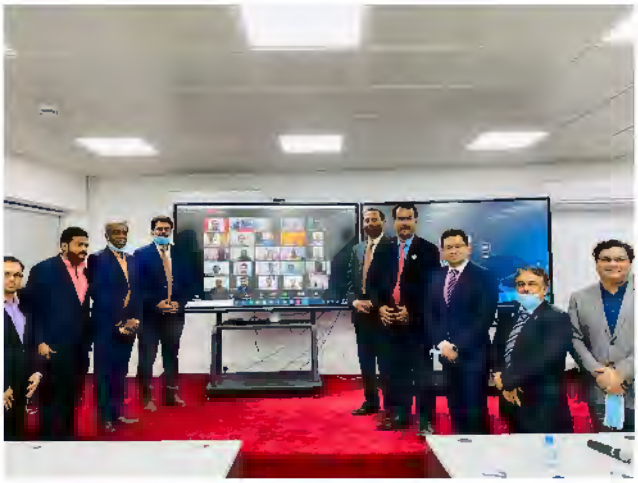
Guest of Honour
Er. Azmy Ameer
President and Executive Director
OUC Liverpool John Moores University

Guest Speaker
Ar. Subrata Mukharjee
Executive Manager, Qatar
Design Consortium

IEI – Technical WEBINAR on 26th Sep at 6:30-7:30 PM

zoom **Zoom :** Meeting ID: 921 7006 7478 Passcode: IEIQatar

THEME WEBINAR
ENGINEERS FOR SELF-RELIANT INDIA



53rd Engineers Day - Budding Engineer Award

IEI Technical Seminars

Energy is an essential input for improvement of the quality of life in modern times. Apart from unequal distribution across regions, today, we understand that the current mode of energy production, distribution and usage are no longer sustainable on account of its huge carbon intensity and consequential environmental and climate related hazards. UN SDG 7 aims to address the issue by ensuring that everyone has access to affordable, reliable, and modern energy services by the year 2030 and at the same time enhance energy efficiency and develop more and more renewable energy resources. Now-a days, over three quarters of the increase in energy consumption come from developing regions. According to the latest BP Statistical Review of World Energy, in 2019, renewable resources which include wind, water, solar, biomass and geothermal energy constituted 5 percent of the global primary energy consumption- an increase of 0.5 percent from 2018.

Both the 2030 Agenda for Sustainable Development and the Paris Agreement on

Both the 2030 Agenda for Sustainable Development and the Paris Agreement on ClimateChange recognise that the world is currently not on track to meet the Sustainable Development Goals including SDG 7 on energy or to keep global temperature rise this century below 1.5°C above pre-industrial levels and therefore, the global energy transformation must be accelerated to achieve the goals. At the same time, there is also a deep concern that over three billion people still lack access to clean energy. In order to overcome these problems, the power sector needs a whole lot of a decarbonisation and also the traditional centralized organization of the power system be transformed to distributed and renewable generation. Smart grids, distributed photovoltaic (PV) and other renewable sources and digital technologies will be at the centre of this transformation.

The International Renewable Energy Agency (IRENA) defines the pathway to energy

transition through a transformation of the

global energy consumption from fossil-based to zerocarbon by the second half of this century. At its heart of the transition are the need to reduce energy-related CO2 emissions to limit climate change, decarbonisation of the energy sector incorporating more and more renewable content to it and increasing energy efficiency measures across all user segments.

The history of energy consumption of people clearly indicates a change in energy mix with time -wood to charcoal and coal to oil and gas to renewables. The approach towards change in energy mix depends mostly on the political ideology of nations. Some are for a transition from fossil fuels to low carbon resources at a slow pace citing the need to manage the transition and further establish the credibility of renewables. Others are more liberal and progressive advocating for a faster transition on account of the advancing climate impacts. At the policy level, both propose to invigorate the slow pace and clamp down the fast pace by setting time bound targets for the transition counting on the historical experiences and deliver adequate, cost effective, safe and environment friendly energy solutions for future. Truly, we need a pragmatic policy and approach for energy transition which is not too fast to inflict heavy damages to the environment or too slow so that the consequences are irreversible.

The unsustainability of present-day energy production emphasizes the need for a gradual decline in the use of fossil fuels, natural gas to occupy the interim stage and pave the way for a carbon neutral energy mix. Though it is accepted well among mainstream scientists that the climate is changing all over the globe, there is no consensus that it is mostly contributed by anthropogenic emissions. Rather than emissions some regard it due to growing population and its energy and other resources related pressure and hold that the variations are nothing alarming and they only a natural variation or average when considered in totality. Due to certain industrial accidents occurred in the past, public sentiments are against nuclear energy andfavour solar and other renewables over fossil fuels. The gradual reduction in the cost of generation of solar power and countries like India going for massive solar power projects indeed, is encouraging. There are certain concerns in promoting biofuels for reducing emission of greenhouse gases even as a transition alternative. The socio-economic and environmental dimensions of climate change are to be clearly unearthed and well brought out before narrowing down on a select fuel or energy resource.

While the COP21: Paris climate agreement depends mostly on commitment from national governments, the Trump administration's negative approach citing US interests have slowed down the momentum of advancement towards sustainable use of energy. With the US retracting on the environmental agenda being pursued by the previous presidency, it is clear that business interests prevail over everything. The incoming Biden administration in the US is believed to have a perception to positively contribute to the global sustainability agenda. Here we also shall not forget the collaborative efforts under the Oil & Gas Climate Initiative (OGCI) of the oil and gas industry majors. Fast tracking e-mobility, producing green ammonia from water and renewable power, increas-

ing digitization of manufacturing sectors, harnessingutmost energy efficiency, full scale recycle and reuse -all now-a-days, have seen a renewed effort and accelerated thrust. Post Covid 19, our ways of doing things and our outlook towards global issues and concerns are undergoing changes more than ever before. We have to define our future energy needs and decide on the kind of energy mix that is capable of meeting the needs with a positive impact on the environment. The current technologies supporting this requirement are low-carbon energy sources (wind, solar power, hydropower, biomass, nuclear, and geothermal), electricity storage solutions, smart grids, network interconnections, sector coupling, demand-side management and carbon capture, utilization, and storage.

The energy transition of any society is a long-drawn-out process involving multiple stakeholders. During anytime the energy mix changed in the past, the interplay of such forces is evident. A gradual, but, time bound shift from fossil fuels to natural gas and hydrogen as transition fuels and to commercial nuclear fusion by the latter half of this century may be acceptable to all. This prescription looks very encouraging, but technologies for super grid power handling, construction of natural gas pipeline and other related infrastructure,establishment of techno-economic viability of hydrogen as a fuel and technology development of nuclear fusion have to be hastened.

Formerly Secretary to Chief Minister, Kerala and Chairman, Public Sector Restructuring & Audit Board, Kerala State. India

Dr MP Sukumaran Nair*

Excom IEI - Qatar

Annual General Meeting was held by Qatar Chapter of The Institution of Engineers (India), at the Indian cultural centre.

المعرفة بلا حدود

Knowledge & Beyond

Discover British Education in Qatar

Undergraduate Programmes

BSc (Hons) Civil Engineering
BSc (Hons) Quantity Surveying
BSc (Hons) Computer Science

Postgraduate Programme

MSc Project Management

About Us

Oryx Universal College offers British BSc (Hons) and MSc qualifications in Qatar, in partnership with prestigious Liverpool John Moores University.

Backed with over 100 years of collective experience of the founders in educating future leaders, we are determined to contribute to the Qatar National Vision 2030 through changing the knowledge and skills development landscape in Qatar.

We are the one and only private sector higher education provider predominantly focusing on STEM (Science, Technology, Engineering and Mathematics) education. We provide students with a balance of practical and theoretical studies which complement one another.

Contact Us :

Address : Building #113, Al Jazira Al Arabiya Street, Zone 36, Al Messila, Doha-Qatar.

Call : +974 4021 0000

Email : hello@oryxuni.com

www.oryx.edu.qa

ORYX UNIVERSAL COLLEGE

In partnership with LIVERPOOL JOHN MOORES UNIVERSITY

The Institution of Engineers (India)

(ESTABLISHED 1920, INCORPORATED BY ROYAL CHARTER 1935)

QATAR CHAPTER

(Under the aegis of Embassy of India)

Patron:- H.E. The Ambassador of India to Qatar

Email: ieiqatar@gmail.com

KAHRAMAA

ENERGY CONSERVATION PROGRAM

KAHRAMAA (TARSHEED) – The Institution of Engineers (India) Project

at MES School , Abu Hamour - Doha

on

8th March, 2020 @ 12:00 – 12:30 PM

Associated with

Conserve

INSPIRE|INNOVATE|INTEGRATE

Tarsheed

M.E.S. INDIAN SCHOOL DOHA - QATAR

KAHRAMAA - TARSHEED Program Inaugurated at MES School

تـربـل ستـار للتجاره والنقليات

TRIPPLE STAR

TRADING CONTRACTING & TRANSPORTATION

Ph: +974 74757076 | 33992962, C.R.No.:135712, Doha - Qatar
info@triplestarcontracting.com | www.triplestarcontracting.com