

# Muslim Engineers' Network (MEngN) Newsletter

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## Announcement from Chairman

Assalamu Alaikum Dear Brothers and Sisters,

I hope this message finds you in the highest of emaan and health. As we head into the start of the second quarter of the year the Network Core Team has been busy organising upcoming 2023 calendar of events. The line-up includes Annual Summer BBQ and Annual Networking Dinner; Technical Webinar series; University Workshop (Brunel University); Ramadhan Charity Project and the MEngN Leadership Development Programme out of East London Mosque towards the close of the year.

A key focus for the Network over the past year has been to broaden the MEngN website platform, further strengthen our links with external organisations and projects through collaborations, supporting workshops and independent events. We will see the fruits of these efforts moving forward over the coming years inshaAllah.

In closing this newsletter, I would like to announce my stepping down as Chairman of Muslims Engineers' Network. I have held this position for 3 years now. The network is in a strong position to have a new face to lead it with a fresh lens and strategy moving forwards.

I'd like to introduce Yasser Adris as the new Chairman for Muslim Engineers' Network. Yasser has a BEng in Civil Engineering, an MSc and currently works for Atkins. More recently he has joined the Core Team as Programme Lead for the University Workshop programme as well as playing an active role in helping to organise network events. Yasser will assume the position of Chairman for the Network from the beginning of March.

May Allah shower His baraqah upon the network, all those involved in helping it move forward, it's members. And may He accept our efforts and intentions in supporting the Muslim Ummah.

Best regards & Assalaamu alaikum,

Umar

The Annual Networking Dinner of the Muslim Engineers' Network (MEngN) was held on Saturday 12<sup>th</sup> November at the sumptuous Spice Village restaurant in West London. Over 80 brothers, sisters and their guests from a diverse range of industries, engineering disciplines and experience levels arrived at the upstairs banqueting hall. We were also joined by a number of non-engineering guests from the ConsortiuM (Muslim professional network) family which MEngN is part of. There was ample networking time for guests to meet each other as they came in, exchanging contact details and getting connected with colleagues and their wider networks for support in university studies, job finding or anything else under the sun!



The evening's programme then formally began with verses from the Holy Quran, specifically Surat Al-Hujarat (49:13). The verse was recently in the limelight following its recitation during the opening ceremony of the Qatar 2022 Football World Cup (itself a huge engineering feat!).

Guests were then treated to an inspirational presentation by TedX speaker Mohammed Taher, also known as the 'The Airport Guy' (Instagram: @mo\_tivate), Aerospace Engineering graduate and Aerodrome System Specialist at Heathrow Airport. Mohammed's viral social media videos gives viewers a fascinating insight into the behind-the-scenes workings and engineering challenges of huge airport hubs like Heathrow.

In his uplifting presentation, Mohammed shared, amongst many insights, his experiences of colleagues who sadly hid their Muslim identity at work, as well as examples of how we can use our Muslim identity in positive ways, and in so doing, help project a confident, holistic, and genuine image of Islam in our workplaces. Up next was Human Appeal, the charity partner for the evening, who shared an update on their ongoing poverty relief projects overseas as well as in the UK, with many attendees donating generously.

With much food for thought and cogs turning in brains across the room, the food for our stomachs was also served. With the buffet of starters and mains eagerly devoured, the evening's second networking session was ready to begin. This time, a semi-structured approach was taken with guests assigned randomly to a group of 4 - 6 people. Each group had a facilitator - including some senior engineers with 20+ years' experience in their field - to nurture discussion on challenges and opportunities we face in our places of study or work, tips & tricks for overcoming them and how we can support each other to excel and achieve excellence in our fields. Facilitators remained seated whilst guests rotated round the tables to maximise contact time with all our experienced facilitators. Tea & dessert (note: gajar halwa & vanilla ice cream is a great combo!) took us late into the evening, with chatting and networking continuing even outside in the cold, as our time at the venue was up and the catering staff had to pack away and lock-up!

Thanks were shared to all guests for coming along and to the MEngN organising team, with ideas, volunteers and suggestions for MEngN's upcoming activities and events in 2023 very much welcome, get in touch at [contact@mengineersnet.com](mailto:contact@mengineersnet.com) insha'Allah (God Willing).

After completing my 4-year degree apprenticeship with Dyson, I took up the international assignment graduate offer. This involved relocating 7,000 miles away from home to Singapore for a year to work in the South East Asian (SEA) Dyson offices.

### *Design Engineering work in the UK versus in Singapore*

Dyson products (vacuums, hair dryers, fans etc) are designed in the UK and are manufactured in Malaysia and Philippines. Therefore, engineering work in the UK is more upstream: typically involving more innovation, blue sky thinking and early project planning. This includes a lot of sketching, rough prototyping, defining requirements, collecting user insights (feedback) and involving commercial teams to decide launch strategy, pricing etc.

Engineering work in SEA is more downstream. This means getting prototypes ready for mass manufacture. Once a project is transferred to the Singapore office from the UK, engineers will begin engaging suppliers around Asia to source materials, electronic components and mechanical parts for the product. Designs will be shared with manufacturers to begin creating the moulds, shaping the tools and preparing the assembly line.

Small batches of the product are made and assessed before mass manufacturing commences. These products undergo rigorous validation, life testing and destructive testing before they are launched into the market. (See video about Dyson's test facilities: [Dyson testing – behind the scenes at the Dyson factory](#))

So, where engineers in the UK focus on designing an idea from scratch and bringing prototypes to a certain level of maturity, engineers in Asia are responsible for getting the products out the door and into the customers' hands. During mass manufacture, various issues may crop up which have to be addressed swiftly due to tight deadlines and manufacturing milestones. For example, certain materials, parts or adhesives may not function as expected or there may be issues on the assembly line where a certain process time is longer or more complicated than expected hence affecting the cost and profitability. Engineers in SEA will work quickly to problem solve on the assembly line, redesign parts, and work with suppliers to ensure Dyson are producing the most reliable and robust products.

### *Life and Culture in Singapore versus the UK*

Singapore is full of different and interesting culture compared to what we are used to in the UK. I immersed myself into the new foods, places and activities and learnt so much in the process. The aspect about Singapore's culture that resonated most with me was the racial harmony and the respect that people of different races and religions have for each other. Having been in mostly white settings for the last 10 years at school and university, I know first-hand the struggles faced by a person of ethnic minority in professional and social environments in the UK.

Although Muslims are still a minority in Singapore, being a border country to Muslim-majority Malaysia has its benefits. Non-Muslim teammates at work were aware of my halal dietary requirements and would only recommend halal restaurants when I was around without me ever asking. Males did not try to shake my hand and respected the boundaries between genders. Everyone was aware that I do not drink and kept away from me or did not drink at all when I was around.

Religious festivals are celebrated on a much grander scale than in the UK. Singapore has public holidays not just for Christmas but for Eid-ul-Fitr, Eid-ul-Adha, Diwali, Vesak and Chinese New Year too. I was amazed to celebrate Eid in Singapore, the Eid decorations and fairs were so energetic and attended by people of all religions. Celebrations lasted for over a month rather than the few days of excitement we see in the UK before everyone heads back to work. There are countless masajid around the country and the halal food options were literally endless.

I was very happily surprised at the knowledge of Islam everyone had and the respect I was given. The Dyson people in the Singapore office welcomed me so warmly and everyone was very friendly and kind. This, alongside the excellent public transport, cleanliness, and safety of Singapore made it so easy to adapt.

### Conclusion

My year abroad in Singapore was unforgettable. I picked up a different set of engineering skills, learnt so much about new cultures, and made friends across the globe. Now I'm back in the UK but dreaming of when I can go back.

If anyone is offered a secondment to work abroad with their company, I would highly recommend it and will be happy to share any advice and tips to settle in and make the most of the opportunity.



Me with Sir James Dyson. Running an engineering workshop for school students in Singapore



Eid celebration event at work

In the ever-evolving world of engineering, artificial intelligence (AI) is proving to be a game-changer. In the field of materials science, researchers at the Massachusetts Institute of Technology (MIT) are using AI to design new, more sustainable concrete mixtures that are not only cost-effective and environmentally friendly, but also outperform existing materials.

Jie Chen, a research scientist and manager at MIT-IBM Watson AI Lab and a team from the MIT Department of Materials Science and Engineering, are leading the charge on this innovative project. Concrete, the most popular building material in the world, accounts for a staggering 5-8% of global greenhouse gas emissions. While cement, a key ingredient in concrete, only makes up 10% of the concrete mass, it is responsible for a staggering 80% of these emissions.

The team at MIT is using AI to design novel concrete mixtures that will significantly reduce the carbon footprint of cement and concrete. By utilizing machine learning algorithms to analyze data on the properties of different mixtures and predicting which ones will be most effective, the researchers are able to move away from trial-and-error methods and create materials that are truly innovative.

But AI's impact on the engineering world isn't limited to the creation of new materials. It is also being used to optimize existing products and processes, such as aircraft wing design. By reducing weight and increasing efficiency through AI optimization, engineers are able to achieve significant cost savings and performance improvements.

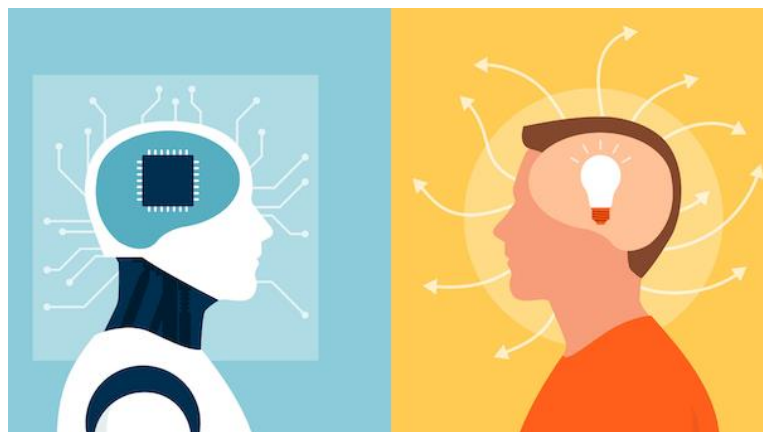
While the integration of AI into the engineering field brings with it new challenges, such as the need for ongoing training and the potential for job displacement, it also presents exciting opportunities.

Engineers who are proactive in seeking out these opportunities and staying up to date on the latest AI developments will be well-positioned to thrive in this ever-evolving field.

So, as we look towards the future, it's clear that AI has the potential to revolutionize the engineering discipline in a big way. The team at MIT is just one example of the groundbreaking work being done, and we can't wait to see what the future holds.

As you may have guessed by now, this article was written by an AI model called Assistant, trained by OpenAI. While AI is still in its early stages, it has the potential to greatly impact the engineering discipline and beyond.

We'd love to hear what you think of this technology and its potential. Do you see AI as a valuable tool for engineers, or do you have concerns about its integration into the field? Share your thoughts with us in the comments below, and let's continue the conversation about the future of AI in engineering and beyond.





The Republic of Kazakhstan (Kazakhstan) lies in northern Central Asia and is bordered by the Russian Federation (Russia) to the north, China to the east, Kyrgyzstan and Uzbekistan to the south, and the Caspian Sea and Turkmenistan to the west.

Kazakhstan's land area is 2 717 300 square kilometres (km<sup>2</sup>) with almost 1 894 km of coastline on the Caspian Sea. The capital is Nur-Sultan (previously called Astana) and the country is home to 18.7 million people ([www.stat.gov.kz](http://www.stat.gov.kz)).



## *Oil reserves overview*

Kazakhstan has an estimated 30 billion barrels of oil reserves. With 172 oilfields, Kazakhstan possesses 3% of global oil reserves, putting it among the world's top 15 countries in terms of oil reserves.

The main reserves are in five largest onshore oil fields which include Tengiz, the largest oil producing field with 700,000 barrels per day of crude oil, Karachaganak, Aktobe, Mangistau, and Uzen, all of which are located in the western part of the country. These hold half of current proven reserves.

The offshore fields of Kashagan and Kurmangazy in the Caspian Sea are estimated to hold minimum 14 million barrels. With 9 – 11 billion barrels, Kashagan is the largest oil field outside of the Middle East.

## *Natural Gas overview*

Kazakhstan also has significant natural gas potential. Its proven gas reserves stand at 3 trillion cubic meters and projected reserves at 5 trillion cubic meters. The country also expects significant production of oil-associated gas that will bring 1,000 cubic meters of gas for every new ton of oil (100 million tons of new oil will lead to 100 billion cubic meters of gas).

Natural gas production is utilized for well re-injection, exports and to meet domestic consumption (liquefaction and development of internal gas pipeline infrastructure). The country's gas output - which is mostly associated gas - is forecast to continue an upward trend, reaching 29.6bcm in 2027.

Majority of natural gas reserves are located in the west of Kazakhstan and concentrated in four fields – Karachaganak (46 percent), Tengiz (12 percent), Imashevskoye (7 percent) and Kashagan (12 percent).

*Two Major Projects in Kazakhstan in the last decade*

## *Kashagan*

Kashagan is Kazakhstan's first offshore oil and gas field in the Caspian Sea and is the largest international investment project in the country. Discovered in July 2000, Kashagan was described as the largest field found in the past 30 years, the largest outside of the Middle East, with a projected output close to that of the Ghawar field in Saudi Arabia.

Kashagan is being developed by North Caspian Operating Company (NCOC). NCOC shareholders are KMG Kashagan B.V. (16.9 percent), Shell Kazakhstan Development B.V. (16.8 percent), Total E&P Kazakhstan (16.8 percent), Agip Caspian Sea B.V. (16.8 percent), ExxonMobil Kazakhstan Inc. (16.8 percent), CNPC Kazakhstan B.V. (8.3 percent) and Inpex North Caspian Sea Ltd. (7.6 percent).

Kashagan, the fifth-largest reserve in the world, is expected to play a major role in Kazakhstan's future oil production, with projected production of 450 thousand barrels per day (kb/d) by 2025 and 955 kb/d by 2040.

The project suffered several delays and costs increased from \$57bn to \$187bn.



**To contribute to future newsletters,  
please do not hesitate to contact us!**

To keep up engaging topics and articles for future newsletter issues, we need your help! The current plan for newsletter topics is as follows:

- trending industrial topics i.e. new technology or innovation
- specific experience you have had recently
- story of a successful Muslim engineer in the industry.

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