

Qatar Science & Technology Park Hosts 'Pumps & Pipes' International Conference

May 1, 2011

The Peninsula Newspaper

Focusing on collaborative efforts to share advanced technologies and explore new ideas, two of Qatar's largest industries, medical and energy, came together recently at the Pumps & Pipes Conference. The event, organized by Qatar Science and Technology Park and ExxonMobil, brought together more than 150 international experts in the fields of medicine and energy.



“The Pumps & Pipes conference had experts in medicine and energy make real strides in identifying technology-based opportunities that can benefit Qatar and countries around the world. What the event demonstrates to people here is the latest technologies that are being developed in Houston and the collaboration between both the sectors,” said Dr. Tidu Maini, Executive Chairman for QSTP and Science and Technology Advisor.

With the idea that oil is pumped through a pipeline similar to how the heart pumps blood through vessels in the body, researchers, scientists and engineers used the opportunity at Pumps & Pipes to discuss challenges and opportunities with shared technologies, especially in the areas of imaging, fluid dynamics, robotics and remote monitoring.

“Robots are very much common in oil gas industry and in the medical world robots do a lot more complicated work in terms of manipulation and visualization though at very small scale. The idea is how these small microscopic movements can be translated to moving big machinery in the energy sector,” Dr. Maini told *The Peninsula*.

“The medicine and energy sector collaboration was born through an idea based upon the similarities of the technology used,” said Alex Dodds, President and General Manager of ExxonMobil Qatar Inc. “The Pumps & Pipes with regards to oil and gas would mean massive pieces of equipment while in medicine it would be minute. The concept makes sense — the idea of fluid, be it blood or oil — pumping through long, narrow tubes is of interest to both parties, as is ensuring the integrity and longevity of

that process.”

The conference highlighted the profits of sharing technology and ideas. “Just like the heart is pumping blood through the body, the reservoirs supply fuels through LNG networks. The fluid mechanics in both are same. Also there are technologies used both in health sector and oil and gas industry. We have catheter process in cardiovascular surgeries and in energy sector we have coil-tube, which is used to look at our production. Similarly, both are hard-to-navigate areas as it’s difficult to reach heart and fuel reservoirs are 10,000 feet under the earth,” said Hani Al Karaz, Production Engineering Advisor, RasGas.

The conference has been instrumental in exchange and realizing many interventions in both the sectors, since Pumps & Pipes came into being in 2007. One of the oft-cited examples is the Inferior Vena Cava filter or Greenfield Filter, a conical filter inserted into blood vessels to restrict movement of blood clots, where the idea actually came from a drilling engineer.

“Also, engineers in the energy sector have helped build software and pumping systems that simulate actual heart which has allowed us to test artificial heart valves and new artificial blood vessels,” said Dr. Alan Lumsden, Chairman, Department of Cardiovascular Surgery and Medical Director, The Methodist DeBakey Heart and Vascular Center, Houston and co-founder of the Pumps & Pipes Program.

“New metals and chemicals are always being developed in the chemical industry which is spin-off from oil and gas industry which is of high interest to us. They have created ‘shape memory polymer’ that can grow to fill space annulus in abdomen or brain,” he told *The Peninsula*. Additionally, conference participants were able to watch a live open-heart surgery case performed in Houston at the Methodist DeBakey Heart & Vascular Center via Web streaming.

Qatar records first robotic ENT surgery in Gulf region

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THE Qatar Robotic Surgery Centre (QRSC) performed the first robotic ENT surgery in the Gulf region recently.

QRSC Director and Chairman of Surgery at the Hamad Medical Corporation (HMC) Dr Abdulla al Ansari said the procedure was successfully conducted on an obese patient suffering from snoring and sleep apnea.

Speaking to the media on the sidelines of the just-concluded Pumps and Pipes Conference on Thursday, Ansari said, "We were impressed with the procedure because it was faster than we thought. The procedure is called tongue reduction and is performed for people who are obese and suffering from snoring and sleep apnea.

"We decreased the size of the patient's tongue base to open the airway and make it easier for the patient to breathe. It was done through robotic surgery, so it was



Participants at the Pipes and Pumps conference, in Doha, on Thursday. (JALAL PATHIYOOR)

minimally invasive".

Robotic surgery where a robot performs a surgical procedure on a patient is known for its excellent dexterity and preciseness. Due to smaller incisions and shorter recovery times, the operations often result to better patient outcomes.

Ansari said that the QRSC is planning to conduct the first robotic pediatric surgery in Qatar within two weeks.

The Pumps and Pipes Conference, which was host-

ed by the QSTP and ExxonMobil, was attended by over 150 experts in the fields of medicine and energy on Thursday.

Speaking during the event, Professor the Lord Darzi of Denham, chairman for the Institute of Global Health Innovation at Imperial College, London, highlighted the importance of innovation in addressing the challenges faced by both the medical and oil and gas sectors.

"Qatar is leading investment in healthcare. The demand on healthcare in the country has increased by 400 per cent within a short time. Qatar is responding to the increase by investing, expanding and building new facilities. Smart healthcare systems are always looking for innovative solutions to their problems," he said.

QSTP Executive Chairman, Dr Tidu Maini said, "Medical sciences are already capitalising on tech-

nologies and processes used to develop energy resources. Our time together resulted in another step towards the advancement of these technologies which have the potential to lead to more effective treatments of cardiovascular diseases".

Alex Dodds, president and general manager of ExxonMobil Qatar said, "Supporting innovation and advanced technologies is at the heart of promoting Qatar's National Vision 2030 on human, social, economic and environmental developments. As a company that places great emphasis in technological advancements, ExxonMobil recognises the need to promote such innovation and applauds Qatar for its progressiveness in this area".

Future discussions at the conference are likely to focus on cutting-edge robotic technologies, the cross-applicability of imaging techniques and the use of nanotechnology in both medical and oil and gas industries.