



**Innovation For Life**

Khalifa University of Science, Technology and Research in Abu Dhabi produces graduates (BSc, MSc, and PhD) who form a superlative cadre of engineers, technologists and applied scientists. KU faculty are well-versed in the creation of knowledge, as well as its dissemination and transfer.

**CENTERPIECE**

**AEROSPACE CENTER TAKES FLIGHT**

Now under construction, KU's Aerospace Research & Innovation Center (ARIC) will collaborate with leading UAE companies in the creation of the next generation of high-performance aerospace structures. Mubadala Aerospace will provide guidance on technology focus areas and offer exposure to international partners such as Boeing, Airbus and GE.

**Resin & Robots**

ARIC will produce parts for airplane components using resin transfer molding and automated fiber placement, and will test those parts for durability on next-generation airplanes. The Center is currently performing permeability testing to establish precise timeframes in which the resin fills the mold. Also, ARIC is poised to begin experimenting with robots that can lay fibers automatically on molds to optimize the manufacturing process for complex aerospace structures.

➤ [Click here to read more about ARIC.](#)

**Q&A WITH KU COLLABORATOR FROM UK**

David Bull, Professor of Signal Processing at the University of Bristol, UK worked with KU to establish the Visual Signal Analysis and Processing Research Centre (VSAP) in 2011.

*KU: How did you get involved with Khalifa University?*

DB: Among other things, I have been an advisor to Khalifa University and, before that Etisalat University, for many years. In this role I helped them to establish the first Engineering PhD program in the UAE.

*KU: How does research vary between the UK and UAE program?*

DB: Excellent research is pretty much the same across the world, but I am particularly impressed by the number of women studying engineering in the UAE. The numbers here are roughly equal and few, if any other, countries can claim that. I am delighted that KU's first PhD graduate was not only from VSAP, but also was female.

*KU: VSAP is a collaboration between Khalifa University and the University of Bristol - what is its primary focus?*

DB: The world we live in is hugely visual and about half of human brain function is related in some way to processing visual information. VSAP was created by Dr. Mohammed Al-Mualla and myself to address key questions in image processing and image understanding - its research will have a major impact on future video surveillance, robotic and consumer applications.

➤ [Click here to read more about VSAP.](#)



**PARTNERSHIP**



**KUSTARS**

**FIRST ENGINEERING PhD IN THE UAE**

Last May, Khalifa University graduated the very first Emirati to obtain an Engineering PhD in the UAE. Dr. Fatma Taher conducts groundbreaking work into the early detection of lung cancer based on sputum-color image analysis. A mother of four, Dr. Taher recently joined the faculty of Khalifa University and is now teaching at the Sharjah campus.

➤ [Click here to read more about Dr. Taher.](#)

**AWARDS FOR IDENTIFYING RISK**

Dr. Habiba Al Safar, Assistant Professor of Biomedical Engineering at Khalifa University, garnered two prestigious acknowledgements for her work in the Fall of 2014. She was one of four outstanding Arab women scientists to win the L'Oréal-UNESCO Fellowship Grant worth 20,000 Euros in recognition of contributions to the advancement of science. Dr. Al Safar was recognized for her work in identifying genetic and environmental risk factors associated with diabetes. Dr. Al Safar was also feted during the Fifth National Genetic Diseases Conference, receiving the first Emirates International Award for Genetic Disease Prevention in the category of Best Scientific Researcher.

➤ [Click here to read more about Dr. Al Safar.](#)



**SPOTLIGHTS**

**FISH OUT OF WATER?**

Who says fish can't live in the desert? Led by Assistant Professor Chih-Wen Ni, KU's new animal laboratory is home to myriad Zebra fish – used by the Biomedical Engineering program to conduct scientific inquiries into toxicity testing, cardiovascular development, and drug delivery systems.

The freshwater Zebra fish belongs to the minnow family, and is especially useful to researchers because its genome is fully sequenced. The Zebra fish's embryonic development is very rapid, and embryos are relatively large, robust, transparent, and able to develop outside their mother.

Dr. Ni purchased the initial fish stock at one of Abu Dhabi's local pet souks. Recently, he received a shipment of Zebra fish as a gift from his collaborators at the University of Massachusetts Medical School in the United States.

➤ [Click here to read more about Dr. Ni.](#)



**PATENTLY LESS OBVIOUS**

Dr. Moh'd Rezeq, Assistant Professor of Applied Math and Sciences, has been granted a US patent for creating of the world's smallest semiconductor transistor. His design comes with the potential to build electronic devices at least 10 times smaller than any known technologies.

The patent number is 8563966.

➤ [Click here to read more about Dr. Rezeq.](#)



**BRAND NEW**



For more information about research at Khalifa University, please email [kupulse@kustar.ac.ae](mailto:kupulse@kustar.ac.ae) or visit [www.kustar.ac.ae](http://www.kustar.ac.ae)

