Husam Alshareef

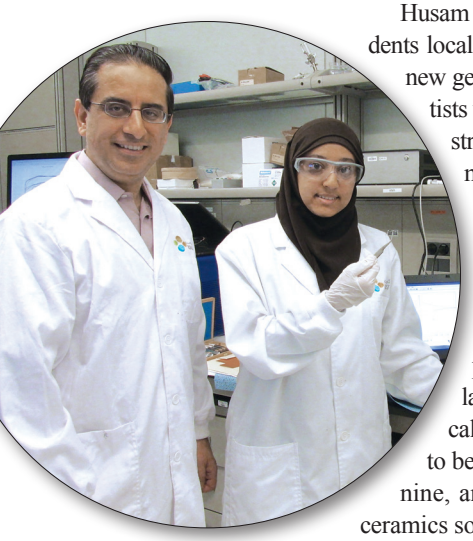
Prominent materials researcher, passionate educator

By **Humaira Taz**

Husam Alshareef has been developing materials from lab to fab. A veteran of the semiconductor industry who has put materials in volume production at companies such as Texas Instruments, he now leads a large research group developing advanced materials for energy and electronics at King Abdullah University of Science and Technology (KAUST).

"I am a passionate materials scientist and have spent my life promoting excellence in materials research, development, and education. I firmly believe that innovation in materials science can help us tackle daunting challenges such as water scarcity, rising CO_2 levels, pollution, renewable energy sources, and personalized health care. The solutions to these rely heavily on the availability of improved materials," said Husam.

He explained that today's problems are increasingly challenging and require multidisciplinary ways of thinking. Innovation in materials science can make a difference because it is the largest common denominator across several domains. "This is why we need to strengthen materials science institutions and fill them with ambitious and passionate materials scientists," he said.



Husam has been involved with students locally and globally to inspire a new generation of materials scientists who can carry the torch and strengthen a network of like-minded individuals committed to materials science.

Husam's passion for materials started at a young age. "My grandfather and most of his children ran pottery shops, which they later developed into small local ceramic factories. I learned to be a good potter at the age of nine, and was glazing and firing ceramics soon afterward," he said.

This led Husam to earn a bachelor's degree in ceramics engineering at Alfred University, N.Y., followed by his doctorate in materials science and engineering at North Carolina State University. He completed a postdoctoral fellowship at Sandia National Laboratories before moving to the semiconductor industry in 1995.

"After Sandia, I spent nearly 10 years in the semiconductor industry. There I developed new materials and processes, several of which entered volume production, bringing great value to these companies. The chips I helped developed were deployed in Sun Microsystems servers and Nokia phones," he added.

A phone call from KAUST in 2009 took Husam back to the Middle East to build a very successful materials science and engineering department in the region. He was responsible for establishing the curriculum, hiring faculty, defining bylaws, and getting the community engaged with the Materials Research Society (MRS).

"I started attending MRS meetings back in 1992 as a graduate student, and it has been a privilege to be a part of this amazing Society," said Husam. Ten years ago, they started the first international MRS University Chapter at KAUST, which is still going strong. "The MRS chapter at KAUST launched after strong support for my petition from Stanley Whittingham (recent Nobel Laureate), who was on the Academic Affairs Committee back then, and Yury Gogotsi," Husam explained.

Their chapter organized the first student-led symposium at an MRS meeting, which focused on building career skills such as proposal writing and submission, CV preparation, manuscript writing, and effective presentations.

In 2014, Husam served as a Meeting chair for the MRS Fall Meeting in Boston. He has organized several symposia on energy-storage materials and devices at both MRS Fall and Spring Meetings. In addition, he served on the New Meetings Subcommittee from 2015 to 2018 and is currently serving as chair of the University Chapters and Special Projects Subcommittee.

"The global challenges today need genuine and effective collaboration between researchers all over the world. I am delighted to say that our collaboration reaches nearly every part of the world—USA, China, Europe, Korea, Australia, Middle East, and Africa. The best part is that I met many of these collaborators at MRS meetings," said Husam.

Outside of research, Husam loves spending time with his family and friends, and traveling. "I am fascinated by the variety of culture when I travel, and the friendships made during those times are precious."

According to Husam, your network is your most important asset after your degree. "Creating a vibrant and strong network of friends and colleagues who are passionate about materials is one of the best pieces of advice I can give to today's students." He suggested that one of the best ways to build these networks is through volunteerism and belonging to societies like MRS. "I have been fortunate to be part of MRS for years and have made many friends along the way." □

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