UC SANTA BARBARA
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Early Recognition

Talk about an honor.

For his outstanding work in the field of 2D electronics early in his career, UC Santa Barbara graduate student researcher Jiahao Kang has received a prestigious student fellowship from the Institute of Electrical and Electronics Engineers (IEEE). Kang is only the second student from UCSB to receive the annual IEEE Electron Devices Society Ph.D. Student Fellowship Award in its 15-year history — and the only one from the Americas for this round.

“I am thrilled to receive this recognition from IEEE, and more so since it is the second time that a student from our group has won this highly competitive award,” said Kang. “I owe my success to the stimulating research environment in our group and to my advisor, Professor Kaustav Banerjee. I would like to thank him for his vision, mentorship and inspiration.”

Two-dimensional electronics emphasizes the electronic properties of materials — such as graphene — that are only a single atom thick. It is an emerging field of research that is notable because of the interesting new physics that emerges in two dimensions and the potential for discoveries and applications that can be derived from such materials.

“Jiahao’s doctoral research is focused on 2D materials, which is perhaps one of the most promising electronic material groups that can potentially replace conventional materials such as silicon and can revolutionize future generations of electronics,

photonics and bioelectronics," said Banerjee, a professor of electrical and computer engineering in UCSB's College of Engineering.

A leader in the field of nanoelectronics, Banerjee is internationally recognized for his pioneering work on energy-efficient electronics. Kang joined Banerjee's Nanoelectronics Research Lab in 2010 as a dual M.S./Ph.D. student after completing his bachelor of engineering degree in microelectronics at Tsinghua University in China.

According to Banerjee, Kang's doctoral work spans fundamental materials physics, including the physics of contacts and interfaces to device design, and finally to experimental demonstration of applications uniquely enabled by these materials. "Among his several influential contributions, Jiahao has carried out crucial work on understanding the nature of electrical contacts to 2D materials, which has played an important role in achieving many significant results in this domain," Banerjee said.

"I offer my sincere congratulations to Jiahao Kang for receiving this extraordinary student fellowship from the IEEE," said Rod Alferness, dean of the College of Engineering. "It fills us with pride, both for him, and for Professor Banerjee and his laboratory, where student researchers receive the support and mentoring that enable them to reach the highest levels of achievement."

The IEEE Electron Devices Society Ph.D. Student Fellowship Award recognizes a demonstrated ability to perform independent research in the fields of electron devices and a proven history of academic excellence. Kang's research contributions are chronicled in over 40 papers in leading publications, including Nature, Nature Materials, Nature Nanotechnology, Nano Letters, ACS Nano, Physical Review X, and Applied Physics Letters, as well as leading IEEE journals and conferences such as the annual International Electron Devices Meeting (IEDM). Kang's works have generated significant interest in the nanoelectronics community with over 1,100 citations and a score of 15 in the Google Scholar Hirsch Index, which measures productivity and impact of scientists and scholars.

The Electron Devices Society (EDS), which began in 1952, is a technical society of the IEEE with more than 11,000 members worldwide, spread across more than 145 chapters on six continents.

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.