Materials Innovation for Future Electronics

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Abstract
Materials innovation is essential for future electronic devices. In this talk, I will present our recent advancements in the integration of high mobility semiconductor "X", with a thickness down to a monolayer, on Si substrates for various device applications. This new material and device platform is termed X-on-insulator or XOI in analogy to the well-established Si-on-insulator technology. The use of both III-V compound semiconductors and layered chalcogenides as the "X" layer will be discussed. XOI devices exhibit excellent electrical properties while operating at lower voltages as compared to Si MOSFETs; thereby, making this new technology platform highly promising for future generation electronics.

Biography
Ali Javey received a Ph.D. degree in chemistry from Stanford University in 2005, and was a Junior Fellow of the Harvard Society of Fellows from 2005 to 2006. He then joined the faculty of the University of California at Berkeley where he is currently an associate professor of Electrical Engineering and Computer Sciences. He is also a faculty scientist at the Lawrence Berkeley National Laboratory where he serves as the program leader of Electronic Materials (E-Mat). He is an associate editor of ACS Nano. He is the co-director of Berkeley Sensor and Actuator Center (BSAC), and Bay Area PV Consortium (BAPVC).

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