

NEWS RELEASE – January 19, 2012

## Three UCSB Professors Elected as IEEE Fellows

**Three faculty members with the UCSB College of Engineering are recognized by the world's largest technology professional association for their research contributions**

(Santa Barbara, Calif.) – The [College of Engineering](#) at University of California, Santa Barbara (UCSB) is proud to announce the elevation of three of its faculty members to the rank of Fellow of the Institute of Electrical and Electronics Engineers ([IEEE](#)). The IEEE Grade of Fellow is conferred upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. IEEE Fellow is the highest grade of membership and is recognized by the technical community as a prestigious honor and an important career achievement.

**The newly elected IEEE Fellows from UCSB are:**

**Divyakant Agrawal**, professor of Computer Science, for contributions to large-scale data management in distributed and networked systems.

Dr. Agrawal's early work was to develop algorithms and protocols for high-throughput transaction processing systems in client-server environments. With the advent of the Internet, Dr. Agrawal and his research group focused their attention to the efficient storage and retrieval of non-traditional data encompassing text, images, and other multimedia data. He made seminal contributions to develop efficient techniques for indexing and querying multimedia data. Agrawal's current research investigations are in the areas of scalable and elastic data management in the cloud computing environments; security and privacy of data in the cloud; and data-driven analysis of online social networks.

Agrawal is the Director of Engineering Computing Infrastructure and former Chair of the [Computer Science Department](#) at UCSB. He served as VP of Data Solutions and Advertising Systems at the internet search company ASK.com. Agrawal is also a Senior Member of the Association of Computing Machinery ([ACM](#)), an ACM Distinguished Scientist, and an ACM Fellow. Agrawal received a PhD in Computer Science from SUNY at Stony Brook.

**Kaustav Banerjee**, professor of Electrical and Computer Engineering, for contributions to modeling and design of nanoscale integrated circuit interconnects.

Banerjee is being recognized as an IEEE Fellow by his peers in just his first decade of academia. His research has been fundamental to comprehending the complex nature of nanoscale interconnection structures that link billions of transistors and central to improving the performance, energy-efficiency and reliability of modern microelectronic chips including multi-core microprocessors and



Divyakant Agrawal



Kaustav Banerjee



Chris Van de Walle



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network-on-chip designs. Banerjee's seminal works quantifying the benefits of 3-D ICs in mitigating interconnect related problems and highlighting their unique advantages for heterogeneous integration of disparate materials (such as Si and III-V) and technologies (e.g. logic, memory, RF, MEMS, Optoelectronics) have triggered wide-scale proliferation of this technology. Banerjee is also a recognized thought leader in graphene-based next-generation green electronics. His work brought carbon-nanomaterials for ultra-low-power interconnects and low-loss passives to the forefront of emerging technologies in the semiconductor industry.

Banerjee is the Director of the [Nanoelectronics Research Lab](#) at UCSB, and an affiliated faculty member with the [California NanoSystems Institute](#) and the [Institute for Energy Efficiency](#). He joined the faculty at UCSB in 2002. Banerjee received a PhD in Electrical Engineering and Computer Sciences from UC Berkeley.

**Chris Van de Walle**, professor of Materials, for contributions to the theory of interfaces, doping and defects in semiconductors.

Dr. Van de Walle has been a leader in applying cutting-edge first-principles calculations to problems in semiconductors with high technological relevance, including predictions of heterojunction band alignments and the elucidation of doping problems. His work has impacted materials used for such varied applications as solid-state lighting, lasers, CMOS transistors, and quantum computing.

Van de Walle is Director of the [Computational Materials Group](#) and an affiliated faculty member with the California NanoSystems Institute, Institute for Energy Efficiency, [Solid State Lighting and Energy Center](#), [Center for Energy Efficient Materials](#), and Interdisciplinary Center for Wide Bandgap Semiconductors at UCSB. Before joining the UCSB Materials Department in 2004, Chris Van de Walle was a Principal Scientist in the Electronic Materials Laboratory at the Xerox Palo Alto Research Center. Van de Walle received a PhD in Electrical Engineering from Stanford University.

"I am proud to congratulate our faculty for this distinctive honor bestowed by IEEE," said Rod Alferness, Dean of the UCSB College of Engineering. Alferness served as President of the IEEE Photonics Society and received the 2005 IEEE Photonics Award. "IEEE represents the world's most distinguished engineering, computing, and technology professionals. The achievements of Professors Agrawal, Banerjee, and Van de Walle reinforce the standard of excellence among our Engineering faculty."

*IEEE is the world's largest professional association dedicated to advancing technological innovation and excellence for the benefit of humanity. Through its 385,000 members in 160 countries, the association is a leading authority on a wide variety of areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics. IEEE and its members inspire a global community through IEEE's highly cited publications, conferences, technology standards, and professional and educational activities. Learn more about IEEE at [www.ieee.org](http://www.ieee.org).*

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