

UC SANTA BARBARA

# THE *Current*

September 14, 2011

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## **Materials Professor Shuji Nakamura to Receive Emmy Award**

The National Academy of Television Arts & Sciences (NATAS) has named Shuji Nakamura, professor of materials and of electrical and computer engineering at UC Santa Barbara, among the winners of the 63rd Annual Technology & Engineering Emmy Awards. The award will be presented during the International Consumer Electronics Show in Las Vegas in January.

The awards honor outstanding achievement in technical or engineering development, and recognize individuals, companies, and scientific or technical organizations for developments in engineering technology that have significantly impacted broadcast television. Nakamura is being recognized for his pioneering development of large-venue, large-screen direct view color displays.

Nakamura, who is also co-director of the campus's Solid State Lighting and Energy Center, is the first UCSB faculty member to receive an Emmy Award, and one of only a small number of academics to be so honored since the Technology & Engineering awards were established in 1948.

"I am very pleased to receive the Technology and Engineering Emmy Award for my work leading to high-efficiency blue, green, and white LED's, which are now used in backlighting LCD TV's, mobile devices, large-screen direct view color video screens, and, eventually, general illumination," said Nakamura.

"Since Professor Nakamura's invention of the first bright blue light-emitting diode in 1993, white LED lighting has become a reality, and the world has changed," said UCSB Chancellor Henry T. Yang. "Professor Nakamura has created new fields of research and expanded the boundaries of the possible. His inventions and discoveries have led to an unprecedented series of breakthroughs in physics, materials science, and technology, including high-density optical data storage, energy-saving solid-state lighting and displays, and even an ultraviolet water purification process.

"By making it possible to bring affordable, energy-efficient lighting to developing countries, Professor Nakamura has also made a tremendous humanitarian contribution to our world," Yang continued. "I am honored to congratulate him on this exciting Emmy Award, which serves as yet another testament to the far-reaching impact of his achievements and contributions to our global society."

Nakamura joined the UCSB faculty in 2000 and was appointed to the Cree Chair in the Solid State Lighting and Display Center in 2001. Known for his technological achievements with semiconducting gallium nitrides, he is widely recognized as the world pioneer in light emitters based on the wide-bandgap semiconductor gallium nitride (GaN) and its alloys with aluminum and indium.

Before joining the UCSB faculty, Nakamura had worked in research for Japan's Nichia Chemical. While at the company in the early 1990's, he single-handedly initiated the development of novel vapor-phase epitaxial growth techniques to obtain single-crystal GaN heteroepitaxial thin films with excellent structural and electrical properties. His crowning achievement was the development of the blue laser. At UCSB, Nakamura continues to develop GaN thin-film technology.

In 2007, a team of UCSB researchers led by Nakamura reported a major breakthrough in laser diode development. The researchers from the Solid State Lighting and Energy Center achieved lasing operation in nonpolar GaN semiconductors, and demonstrated the world's first nonpolar blue-violet laser diodes.

Nakamura earned his undergraduate, master's, and doctoral degrees at Japan's University of Tokushima. He is the recipient of numerous prestigious awards including the Millennium Technology Prize, two Japan Society of Applied Physics awards, Nikkei Best Products and Excellent Products awards, a Society of

Information Display Special Recognition Award, the IEEE Laser and Electro-Optics Society Engineering Achievement Award, the Materials Research Society Medal, the IEEE Jack A. Morton Award, and the Benjamin Franklin Medal in Engineering. He also has been elected to membership in the National Academy of Engineering.

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