

# Umesh Mishra Receives Welker Award for Achievements in Energy Efficient Semiconductor Research

**Heinrich Welker award recognizes Professor Mishra for sustained leadership in the development of gallium nitride-based high-power electronics**

✘ Umesh K. Mishra, professor of [electrical and computer engineering](#) at UC Santa Barbara, was recently awarded the Heinrich Welker award, for "sustained leadership in the development of gallium nitride-based high-power electronics from conception, education to commercialization." The award was presented to Mishra at the International Symposium for Compound Semiconductors held at UCSB, and is given for innovative and outstanding research in the area of III-V compound semiconductors.

Mishra's research in the field of energy efficient power conversion revolves primarily around electronics and materials using the highly efficient and versatile semiconductor gallium nitride (GaN), as well as other energy efficient materials and means, such as non-stoichiometric semiconductors, oxide-based electronics, vacuum microelectronics, and iridium phosphide (InP) and gallium arsenide (GaAs) based electronics.

Mishra's company Transphorm was also recently selected by the World Economic Forum as a 2013 [Technology Pioneer](#) for its innovations in GaN technology, the solutions from which can cut total world electrical energy waste by up to 10 percent.

In receiving the Welker Award, Mishra joins a long list of other inventors and pioneers in the world of energy efficient electronics, materials and technology, including Nick Holonyak, inventor of the LED; Federico Capasso, inventor of the heterotransistor; UCSB Materials professor Carl Weisbuch, whose research deals primarily with the optics of semiconductors; and 2000 Nobel Laureates Zhores Alfarov and Herbert Kroemer, who is also a UCSB professor of materials and electrical and computer engineering.

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## Images



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