UC SANTA BARBARA

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Here Comes the Sun

Thuc-Quyen Nguyen, a professor of chemistry and biochemistry at UC Santa Barbara, has received the Humboldt Research Award from Germany's Alexander von Humboldt Foundation. The award is presented in recognition of her groundbreaking achievements in science research. Nguyen is internationally known for developing a solution-processable small molecule used in organic solar cells — plasticlike photovoltaics that produce electricity from sunlight.

The Humboldt Research Award is granted to senior scientists whose fundamental discoveries, new theories or insights have had a significant impact on their own discipline and who are expected to continue producing cutting-edge achievements in the future. Each winner receives a stipend of 60,000 Euros (approximately $67,000).

"I am proud to join with our colleagues in congratulating Professor Thuc-Quyen Nguyen on her Humboldt Research Award," said Chancellor Henry T. Yang. "This prestigious honor recognizes the excellence, impact and promise of her research, including her pioneering work on organic electronic devices. As a distinguished faculty member in our highly ranked Department of Chemistry and Biochemistry, and a member of our Center for Polymers & Organic Solids, Mitsubishi Chemical Center for Advanced Materials, Center for Energy Efficient Materials, and Institute for Energy Efficiency, Professor Nguyen exemplifies UC Santa Barbara's spirit of interdisciplinary collaboration, innovation and discovery."

Named for the late Prussian naturalist and explorer, the Alexander von Humboldt Foundation promotes academic cooperation and each year enables more than 600

researchers from varying disciplines to conduct research in Germany. The Humboldt Foundation annually grants up to 100 Humboldt Research Awards to scientists and scholars regardless of their discipline or nationality.

“It was wonderful to receive this award not only because it helps my future research direction with my collaborator in Germany, but also because of the honor associated with it,” said Nguyen, whose group also conducts research on light-emitting diodes and field-effect transistors. “The award means that your work is well-recognized and respected by your peers and the scientific community.”

Currently, Nguyen and her research group focus on charge transport in organic semiconductors; new materials for organic solar cell applications; materials processing; nanoscale and bulk characterization of organic solar cells; device physics; organic transistors; organic ratchets; and biomaterials/bioelectronics. Nguyen also works with professor Dieter Neher of the University of Potsdam, where the two focus on the effect of energetic disorder on charge-carrier transport and device characteristics.

“The beauty of working with the solution-processed small molecules that my group developed at UCSB is that you get exactly the same molecule each time and that consistency is important for device applications,” Nguyen explained. “These molecules can be processed from solution, which means an organic solar cell can be made flexible using roll-to-roll coating similar to printing a newspaper. The other nice thing with this type of technology is that it can be made semitransparent to coat windows or glass.

“I grew up for 16 years without electricity so I have had a long interest in solar energy,” added Nguyen, who was raised in a small village in Vietnam and came to the United States when she was 21.

Nguyen learned English at adult school, then attended Santa Monica College before transferring to UCLA. There she trained as a physical chemist and received bachelor’s and master’s degrees as well as a doctorate. Nguyen pursued her postdoctoral studies at Columbia University and joined the faculty in 2004.

In addition to the Humboldt Research Award, Nguyen is the recipient of numerous honors and awards, including the 2010 National Science Foundation American Competitiveness and Innovation Fellowship; the 2009 Alfred P. Sloan Foundation Research Fellowship; the 2008 Camille Dreyfus Teacher Scholar Award; the 2007

Harold J. Plous Memorial Award and Lectureship; the 2006 National Science Foundation’s Faculty Early Career Development Award; and the 2005 Office of Naval Research Young Investigator Award.

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.