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David Awschalom Awarded the 2005 Agilent Europhysics Prize for Outstanding Achievement in Condensed Matter Physics

Santa Barbara , Calif. ? April 7, 2005 ? Agilent Technologies Inc. has announced that the European Physical Soci ety (EPS) awarded the 2005 Agilent Europhysics Prize for Outstanding Achievement in Condensed Matter Physics to Professor David Awschalom of the University of California , Santa Barbara . He and two others are being honored for their investigations of magnetic semiconductors and spin coherence in the solid state, which has paved the way for the emergence of spin electronics, or ?spintronics.? The Europhysics Prize is one of the most prestigious physics prizes presented in Europe .

At UCSB, Awschalom is director of the Center for Spintronics and Quantum Computation, and is associate scientific director of the California Nanosystems Institute. Awschalom and his research group have pioneered new experimental techniques that made possible the discovery of long-lived electron spin lifetimes and coherence in semiconductors and nanostructures. They recently demonstrated all-electrical generation and manipulation of both electron and nuclear spins in prototype solid-state devices. This work opens the door to new opportunities for research and technology in the emerging fields of semiconductor spintronics and quantum computation, including the development of fundamentally new systems for high density storage, ultrafast information processing, and secure communication.

The spintronics center that Awschalom heads is affiliated with the California Nanosystems Institute, one of the four California Institutes for Science and Innovation established in 2000 and supported by the state and private industry. The nanosystems institute is a joint project of UC Santa Barbara and UCLA.

Awschalom joined the University of California , Santa Barbara as a professor of physics in 1991, and in 2001 was also appointed as professor of electrical and computer engineering. His research has been chronicled in his more than 250 scientific journal articles, and has also been featured in the New York Times, the Wall Street Journal, the San Francisco Chronicle, the Dallas Morning News, Discover magazine, Scientific American, Physics World, and New Scientist. His research focuses on optical and magnetic interactions in semiconductor quantum structures, spin dynamics and coherence in condensed matter systems, macroscopic quantum phenomena in nanometer-scale magnets, and quantum information processing in the solid state.

Awschalom?s honors include the IBM Outstanding Innovation Award, the Outstanding Investigator Prize from th e Materials Research Society, the International Union of Pure and Applied Physics (IUPAP) Magnetism Prize, and the 2005 Oliver E. Buckley Prize from the American Physical Society.

Agilent has sponsored the Europhysics Prize for the past 30 years (as Hewlett-Packard until 1999), based on the belief that fundamental advances in science have the potential to revolutionize the way people live and work. The prize recognizes scientific excellence and focuses on work that advances the fields of electronic, electrical and materials engineering. A committee appointed by the EPS, including one representative from Agilent, selects the recipients.

The EPS provides an international forum to discuss science and policy issues of interest to its members.

Created in 1968, it represents over 80,000 members and physicists through its 38 national member societies.

Also awarded the 2005 Agilent Europhysics Prize for Outstanding Achievement in Condensed Matter Physics are Tomasz Dietl, Institute of Physics , Polish Academy of Sciences, Poland ; and Hideo Ohno, Research Institute of Electrical Communication, Tohoku University , Japan .

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