

# Spinning a new horizon for electronics

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Spintronics has the potential to have as profound an impact on electronics as the development of the transistor had 50 years ago.

This exciting and challenging area of nanotechnology will come under the international spotlight next week when scientists and engineers, from across the world, will gather in York in the UK for a major conference to explore the progress and future of spintronics.

WUN-SPIN 2007 will bring together experts from both academia and industry to share ideas on the how spintronics will affect advanced data storage, microelectronics, automotive sensors, communication and quantum computing.

Spintronics uses electron spin as well as charge to manipulate information processing circuits. Spintronic devices combine the advantages of magnetic materials and semi-conductors, and are likely to be stable, versatile fast and capable of simultaneous data storage as well as being energy-efficient.

The three-day conference at St William's College, York, will feature presentations from world leading experts as well as contributions from established and young researchers.

Co-organised by the University of York and the International Centre for Materials Research at the University of California, Santa Barbara, it is supported by the Worldwide University Network (WUN).

More than 10 WUN universities have research groups in spintronics and related areas. The organisation has established a Spintronics Grand Challenge Project that will bring together expertise across a range of disciplines to search for major breakthroughs in the technology.

Representatives from some of the world's leading electronics companies, including IBM, Seagate and Toshiba, will also address the conference. The aim of the event is to accelerate the production of the world's first viable spintronics transistor capable of both data processing and storage.

The York conference, which runs from 7 to 10 August, will be the first of a series of three which are part of a framework for establishing the group's international profile.

The Vice-Chancellor of the University of York, Professor Brian Cantor, said: "We are on the threshold of a new era in nanotechnology. With current silicon-based electronics technology likely to reach its limit within a decade, this conference will map out some of the enormous potential of spintronics to address the challenges ahead. It is a great honour for York to host an event of such importance."

Dr Yongbing Xu, conference co-chair and the coordinator of WUN Spintronics from York Spintronics Laboratory, said: "This conference offers the opportunity for international centres of excellence to exchange ideas and establish close collaborations in this exciting technology."

Co-chair Professor David D Awschalom, Director of the Centre for Spintronics and Quantum Computation at the University of California, added: "Students will have an extraordinary opportunity to learn about recent research developments, ranging from fundamental spin-dependent effects in semiconductors to the creation of new spintronic materials and devices. We hope that interactions amongst the participants will lead to innovative collaborations and further accelerate the field."

Chief Executive Officer of WUN, David Pilsbury said: “The hope that spintronics offers for the future will only be realised by collaboration between institutions across the world, so WUN is proud to be supporting this conference and the WUN Grand Challenge in Spintronics.”

Source: University of York

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