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Oxford Instruments and Harvard University collaborate to develop dilution refrigerator technology for Quantum information processing.

Oxford Instruments NanoScience and Harvard University are working together on the next generation of cryogen-free dilution refrigerators. Oxford Instruments launched its flagship Triton cryogen-free dilution refrigerator in 2007 and have since shipped over 70 systems. The success of Triton is due to high interest in the new technology allowing fast sample cool down to 10 mK without the need for liquid helium and also the range of applications it is suited for. One key application of Cryogen-free dilution refrigerators is Quantum Information research. Charles Marcus from Harvard University recently purchased another Triton Cryofree[®] dilution refrigerator, demonstrating the suitability of this product to this particular application. He commented: "When we were looking at options for a new cryogen-free dilution refrigerator, we chose the Triton system for his ability to rapidly cycle samples to base temperature, including dc and rf connection capability. We also like the modularity of the sample slug system allowing customization and evolution of our system."

Oxford Instruments is also delighted to be part of the Multi-Qubit Systems Based on Electron Spins in Coupled Quantum Dots project, which is a consortium led by Charles Marcus of Harvard University and funded by the Intelligence Advanced Research Projects Activity as a part of its Multi-Qubit Coherent Operations program. Collaborators include Harvard, Oxford Instruments, UC Santa Barbara, University of Maryland, TU-Delft, University of Sydney, University of Tokyo and University of Basel. The consultancy team at Oxford Instruments will be focusing on developing the Ultra Low Temperature instrumentation required for these experiments, including high density high bandwidth wiring schemes.

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Issued for and on behalf of Oxford Instruments NanoScience

For further information and electronic copies of the images please contact:

Sophie Walker
Marketing Communications Manager
Oxford Instruments NanoScience
e. sophie.walker@oxinst.com
t. +44 (0)1865 393349
f. +44 (0)1865 393333

Notes to editors

About Oxford Instruments NanoScience and Oxford Instruments plc.

Internationally recognised as world leaders in superconductivity and ultra low temperature cryogenic environments, Oxford Instruments NanoScience is driving innovation in these fields. The company's leading-edge technologies support research in nanotechnology, solid state and condensed matter physics. Combining outstanding technical expertise, original thinking and a commitment to meeting customers' needs, Oxford Instruments NanoScience enables real advances both in research and commercial applications by providing the high quality technological environments needed to meet demanding experimental requirements. Oxford Instruments NanoScience is part of the Oxford Instruments plc group.

The Oxford Instruments plc group designs, supplies and supports high technology tools, processes and solutions with a focus on physical science, bioscience, environmental and industrial research and applications. It provides solutions needed to advance fundamental nanoscience research and its transfer into commercial nanotechnology applications. Innovation has been the driving force behind Oxford Instruments' growth and success for 50 years, and its strategy is to effect the successful commercialisation of these ideas by bringing them to market in a timely and customer-focused fashion.

The first technology business to be spun out from Oxford University fifty years ago, Oxford Instruments is now a global company with over 1,500 staff worldwide and a listing on the London Stock Exchange (OXIG). Its objective is to be the leading provider of new generation tools and systems for the Physical Science and Bioscience sectors.

This involves the combination of core technologies in areas such as low temperature and high magnetic field environments, Nuclear Magnetic Resonance, X-ray electron and optical based metrology, and advanced growth, deposition and etching. Our products, expertise, and ideas address global issues such as energy, environment, terrorism and health and are part of the next generation of telecommunications, energy products, environmental measures, security devices, drug discovery and medical advances.

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