

Oxford Instruments NanoScience introduces TeslatronPT Plus, an open-architecture low temperature measurement system

Oxford Instruments NanoScience introduces its low temperature, superconducting magnet measurement system for fundamental materials physics, TeslatronPT Plus.

OXFORD, OXFORD, UNITED KINGDOM, March 6, 2025 /EINPresswire.com/ -- Oxford Instruments NanoScience today introduces its low temperature, superconducting magnet measurement system for fundamental materials physics, [TeslatronPT Plus](#). The system promises simpler access to high performance measurement capabilities, allowing users to spend more time on the measurement rather than the set-up, while gaining a flexible, scalable and secure system.



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Matthew Martin, Managing Director at Oxford Instruments NanoScience

TeslatronPT Plus uses an open architecture, providing greater flexibility to users than closed “black-box” systems, with a browser interface allowing remote, OS-independent control. In addition, TeslatronPT Plus does not use proprietary measurement software or locked-in hardware and is designed to scale and adapt to the researchers’ needs as experimental programmes evolve.

Matthew Martin, Managing Director at Oxford Instruments NanoScience, commented: “With more and more pressure on universities and researchers to do more with less and

to deliver results quickly, we wanted to bring to market a best-in-class solution building on our leading innovation in Cryofree® superconducting magnets and system integration. The TeslatronPT Plus delivers a truly easy to use and scalable solution so that our customers can

focus on the measurement. A characterised set-up from Oxford Instruments gives confidence in measurement performance, but with the open modular architecture allowing use of other assets already owned by our users. Ultimately, it makes measurement more simple, flexible and future proof.”



Oxford Instruments has integrated Lake Shore’s flagship measurement instrumentation onto a significantly upgraded TeslatronPT cryomagnetic system with new automated operation and environment control. TeslatronPT Plus enables critical characterisation and investigation of fundamental materials physics, with measurement capabilities including low and high resistance, Hall effect in both Hall bar and van der Pauw geometries, and I-V characterisation.

TeslatronPT Plus users benefit from familiar open-source software that allows them to build and adapt their measurements based on their own research needs, and not to be constrained by a “black-box” solution. This includes a Python programming environment using Jupyter Notebook, with pre-written scripts that facilitate immediate experimentation while allowing complete customisation. Real-time visualisation and dashboards are provided by Grafana. The open architecture supports third-party instruments via the QCoDeS driver framework, which benefits from an active development community of researchers and instrument providers, ensuring easy incorporation of any QCoDeS-compatible instrument. This approach enables researchers to build tailored measurement solutions upon a reliable yet flexible software and hardware base.

Cryogenic environment parameters – temperature and magnetic field – are seamlessly integrated via [oi.DECS](#), Oxford Instruments’ cross-platform control software. Together with TeslatronPT Plus automation, oi.DECS shortens set-up time, ensures consistent experimental results, and offers network-based access remotely using any browser on any platform. Cryogenic environment data from oi.DECS and from the measurement instruments are fully time-stamped to allow completely correlated data analysis.

The first ready-bundled and scripted software options include Lake Shore’s M81 Synchronous Source Measure System and its M91 FastHall™ Measurement Controller. The M81 Synchronous Source Measure System is a versatile and modular tool designed for scientific-grade low-level electrical transport measurements - including low-level DC and AC lock-in measurements in the same unit. Lake Shore’s M91 FastHall™ Measurement Controller provides complete Hall analysis, improves accuracy by minimising thermal drift and is up to 100× faster for low-mobility materials. Users can also choose from a variety of Oxford Instruments breakout boxes and measurement probe options, maintaining a fully validated low-noise signal chain.

The TeslatronPT Plus measurement system and software will be shown live for the first time at

the upcoming APS Global Physics Summit 2025, 17-21 March, Anaheim, CA. Visit Oxford Instruments at Booth 515 to find out more.

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Issued for and on behalf of Oxford Instruments NanoScience
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About Oxford Instruments NanoScience

Oxford Instruments NanoScience designs, supplies and supports market-leading research tools that enable quantum technologies, new materials and device development in the physical sciences. Our tools support research down to the atomic scale through creation of high performance, cryogen-free low temperature and magnetic environments, based upon our core technologies in low and ultra-low temperatures, high magnetic fields and system integration, with ever-increasing levels of experimental and measurement readiness. Oxford Instruments NanoScience is part of the Oxford Instruments plc group.

About Oxford Instruments

Oxford Instruments provides academic and commercial organisations worldwide with market-leading scientific technology and expertise across its key market segments: materials analysis, semiconductors, and healthcare & life science.

Innovation is the driving force behind Oxford Instruments' growth and success, supporting its core purpose to accelerate the breakthroughs that create a brighter future for our world. The vigorous search for new ways to make our world greener, healthier and more productive is driving unprecedented levels of R&D investment in new materials and techniques to support productivity and decarbonisation worldwide, creating a significant opportunity for Oxford Instruments to grow.

Oxford Instruments holds a unique position to anticipate global drivers and connect academic researchers with commercial applications engineers, acting as a catalyst that powers real world progress. Founded in 1959 as the first technology business to be spun out from Oxford University, Oxford Instruments is now a global, FTSE250 company listed on the London Stock Exchange (OXIG).

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