

## News from Renishaw

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For immediate release

### **Renishaw adds Raman capabilities to synchrotron research**

*Beamline scientists and Renishaw share expertise, developing new analytical tools for cutting-edge synchrotron research*

Over the last few months, Renishaw engineers and beamline scientists from the Swiss Norwegian Beamlines (SNBL) have developed novel Raman probes to advance cutting-edge synchrotron research. Wouter van Beek and a team of scientists working at SNBL, use simultaneous X-ray diffraction (XRD), extended X-ray absorption fine structure (EXAFS), Raman, and mass spectroscopies (MS), to monitor the kinetics of catalytic reactions *in situ*.

Renishaw scientists and engineers have worked with the team, based at the European Synchrotron Radiation Facility (ESRF) in France, to develop new probes that enable the scientists to perform their experiments more rapidly and efficiently. The integrated set-up is now fully operational and it will open up new avenues of research and offer vital new detail for studies in solid state chemistry including nano-materials, catalysis, biology (protein crystallography), and environmental science.

The new SNBL hardware augments their current Renishaw equipment. This comprises six different fibre optic Raman probes, and three online video systems with relay lenses to provide high numerical aperture at long working distances, all connected to a Renishaw inVia spectrometer. The probes enable *in situ* operation at two remote synchrotron stations, and *ex situ* use attached to a macro chamber on the inVia. This *ex situ / in situ* use with the same experimental setup is crucial; the *ex situ* work enables analytical conditions to be optimised prior to costly on-line experiments (where materials are monitored as they change under external stimuli such as pressure, temperature, or corrosive gas).

Wouter van Beek explains, "I decided to work with Renishaw, first because their engineers immediately understood my complex specifications with respect to applications and implementation, and second because they were able to build upon our ideas, suggest novel solutions to implement them, and even surpass our requests." Renishaw's Dave Cutler, head of the special projects team, adds "It's very satisfying to work on challenging projects like this one; our team is highly skilled at meeting the particularly stringent requirements of this sector of the scientific community."

This project capitalises on Renishaw's extensive experience in developing customised beamline systems; these are installed at ESRF (three systems), the Daresbury Synchrotron Radiation Source, Rutherford Appleton Laboratory ISIS neutron/muon source, and the new Diamond synchrotron source in Oxfordshire. Contact us so we can discuss your beamline system requirements.

For further details about this, and other synchrotron light source applications please contact Viki Lacey ([viki.lacey@renishaw.com](mailto:viki.lacey@renishaw.com), +44 1453 523815) or visit [www.renishaw.com/raman](http://www.renishaw.com/raman)

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## **Notes to editors**

### **Renishaw profile**

Renishaw is a world leader in metrology and spectroscopy technologies, with a strong history of innovation in product development and manufacturing.

Since its formation in 1973, Renishaw has supplied companies small and large, worldwide, with innovative products that increase process productivity, improve product quality, and deliver cost-effective automation solutions.

A high level of investment in research and development (R&D) has resulted in developments across a wide range of other product areas, including Raman microscopes for the spectral analysis of materials. Total annual expenditure on R&D, including related engineering costs, now amounts to 17% of turnover.

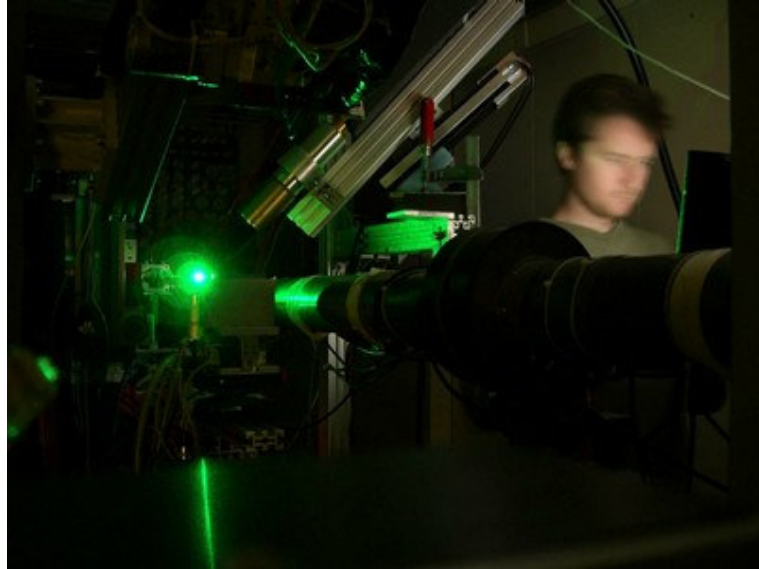
With more than 50 operations in 31 countries, and over 2,250 employees. Renishaw's customers are strongly supported throughout the world with outstanding technical expertise and service.

## Images

Images of the new probe assembly are available (contact us for publication-quality versions)



The new Raman video probe on a test rig, and showing the high NA long WD relay lens



The Raman video probe in place on the experimental apparatus in the Swiss Norwegian beamline workstation

## For further information

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