



Hybrid Conference

26 – 27 February 2026

Analytical Microscopy in Earth and Planetary Sciences
CONFERENCE PROGRAMME



The
Geological
Society

Supported by



Mineralogical Society
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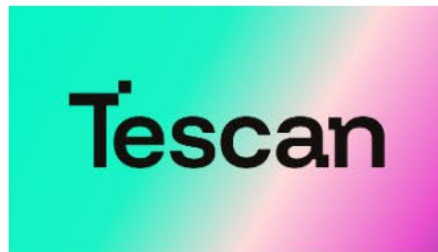
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CO2 Sequestration in Basalt

50 µm

Courtesy of TotalEnergies

**Natural Hydrogen in
Peridotite (Lherzolite)**

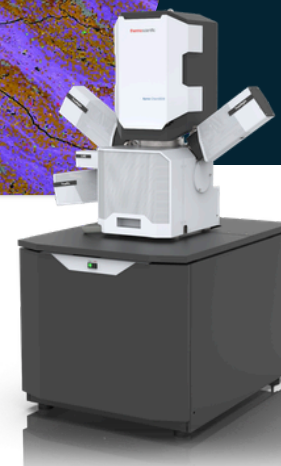
100 µm

Courtesy of Université de Pau et des Pays de l'Adour

**Lithium Resource
Development**

500 µm

Courtesy of Eramet



Complete the workflow with
Thermo Scientific Apreo ChemiSEM¹

Discover Subsurface Insights for Energy Transition with Thermo Scientific™ Maps Min Software

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thermo scientific

Superior characterization of geological samples with spherical indexing

EDAX® OIM Matrix™ improves electron backscatter diffraction (EBSD) pattern analysis by comparing experimental EBSD measures to master patterns derived from both physics-based models or experimental benchmarks. Powered by state-of-the-art EDAX spherical indexing, this approach delivers more accurate and reliable results—especially for the complex and compositionally diverse minerals commonly found in geological materials.

Sample: Devonian-age granite collected with an EDAX Velocity™ EBSD camera and Octane Elite energy dispersive x-ray spectroscopy (EDS) detector at 500 points per second with simultaneous EDS and EBSD data.

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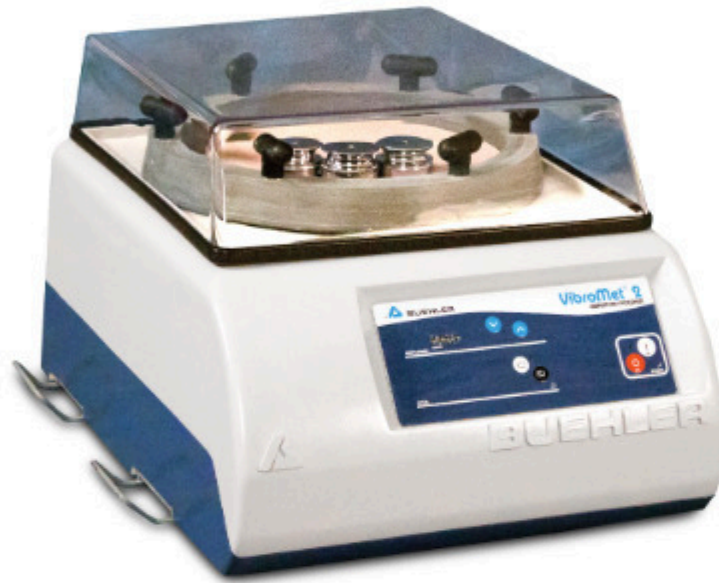
Thursday 26 February 2026		
0930 –1000	Registration & Coffee	
1000 – 1010	Welcome Address	Natasha Stephen, Geological Society of London
1010 – 1100	Keynote: Precise quantitative mineral analysis by EDS-SEM	Johan Lissenberg, <i>Cardiff University</i>
SESSION ONE		
1100 – 1120	No WDS? No Problem! Why Do Geoscientists Continue to Overlook EDS?	George Stonadge, <i>Oxford Instruments</i>
1120 – 1140	Element mapping of the lawsonite to epidote transition	Sara Hanel, <i>University of Minnesota</i>
1140 – 1200	From Sparse Measurements to Full Maps: Machine Learning Prediction of Mineral Phase Data	Julia Schmitz, <i>MaP - Microstructure and Pores GmbH, Germany</i>
1200 -1210	Automated Mineralogy as a part of complex analytical workflows	Marek Dosbaba, <i>Tescan</i>
1210 – 1230	Break	
SESSION TWO		
1230 – 1250	Quantifying Facies-Controlled Pore Connectivity in Heterogeneous Porous Media with Alloy Intrusion Porosimetry (AIP)	Joyce Schmatz, <i>MaP - Microstructure and Pores GmbH</i> & Julia Schmitz
1250 – 1310	SEM-BEX Mapping on Unprepared and Uncoated Samples: did we find the oldest extraterrestrial zircons?	Alexandra Stavropoulou, <i>Oxford Instruments</i>
1310 – 1330	The Importance of being oriented: a review of thirty years of Electron Backscatter Diffraction research in Earth and Planetary Sciences	John Wheeler, <i>University of Liverpool</i>
1330 - 1430	Lunch	
COMMUNITY UPDATES		
1430 – 1445	High resolution structural and chemical analysis at the electron Physica Sciences Imaging Centre	Chris Allen, <i>ePSIC</i>
1445 – 1500	Imaging & Characterisation at the Henry Royce Institute: Facilities and Access	Alexander Massey, <i>Henry Royce Institute</i>
1500 – 1515	The Space Nanomaterials atom probe (SNAP) providing an atoms eye view of the Solar System	Luke Daly, <i>University of Glasgow</i>
1515 – 1530	An Update for the Microscopy Community from EPSRC	Neil Robinson, <i>EPSRC UKRI</i>
1530 – 1600	Break	
1600 – 1610	Automated Mineralogy: Faster, Smarter geological insights with MapsMin	Salomé Larmier, <i>Thermo Fisher Scientific</i>

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Buehler machines used in petrography and electron microscopy (EBSD)

VibroMet 2



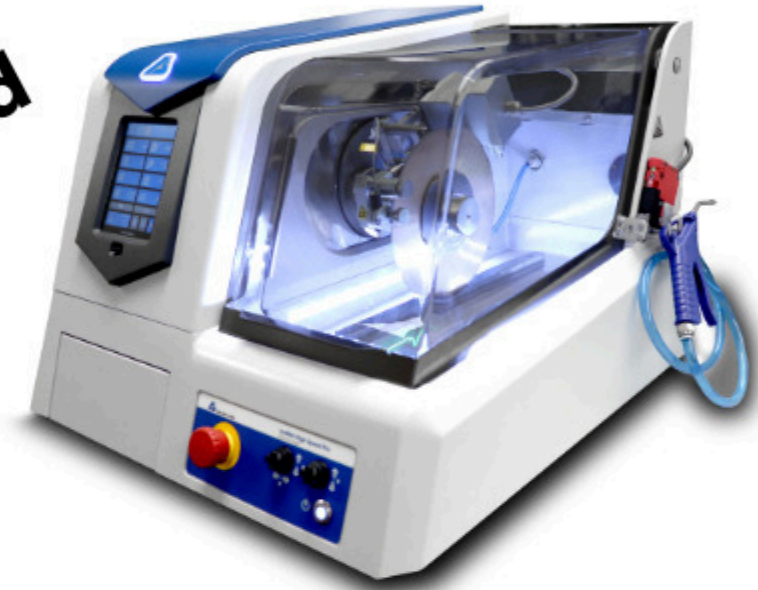
- **Vibratory polisher** for multiple samples
- Prepares high quality polished surfaces, **e.g for EBSD analysis**

SimpliVac



- **Advanced vacuum system** for epoxy mounting
- Superior pore impregnation
- Ideal **for petrography** applications

IsoMet High Speed Pro



- **Automatic precision sectioning**
- Precision alignment to an **accuracy of 1 micron**, which is crucial for analysis

For further questions meet us
at the lower library at our booth.

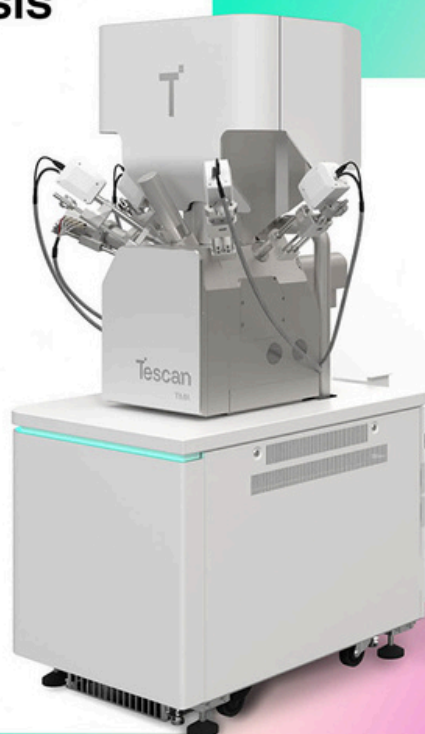
VIRTUAL POSTER SESSION		
1610 – 1620	Resolving Mixed Spinel Signatures with EPMA Element Mapping in Metasomatized Peridotites	Danielle Carr, <i>University of Texas at Arlington</i>
1620 – 1630	The Macroscopic and microscopic mineralisation controlled by the Yanshanian movement surface in the Xitian area, Hunan Province, South Central China	Hongyuan Zhang, <i>China University of Geosciences (Beijing)</i>
1630 – 1640	High-resolution Scanning Electron Microscopy Imaging in Mudstone Thin Sections with Different Metallisation Alternatives	Mateus A Rodrigues, <i>Fluminense Federal University</i>
1640 – 1655	Lighting session	
1655 - 1830	Poster session & Drinks Reception	

Posters	
Resolving Mixed Spinel Signatures with EPMA Element Mapping in Metasomatized Peridotites	Danielle Carr, <i>University of Texas at Arlington (Virtual)</i>
Telling the time with SEM-EDS: Application of quantitative EDS to diffusion chronometry	Joe Gardener, <i>University of Liverpool</i>
The macroscopic and microscopic mineralization controlled by the Yanshanian movement surface in the Xitian area, Hunan Province, South Central China	Hongyuan Zhang, <i>China University of Geoscience, Beijing (Virtual)</i>
Quantifying Porosity and Mineralogy in Rock Samples through Integrated SEM/EDS and Machine Learning Approaches	Joyce Schmatz, <i>MaP - Microstructure and Pores GmbH</i>
High-resolution Scanning Electron Microscopy Imaging in Mudstone Thin Sections with Different Metallization Alternatives	Renan de Melo Correia Lima / Mateus A. Rodrigues, <i>Fluminense Federal University (Virtual)</i>

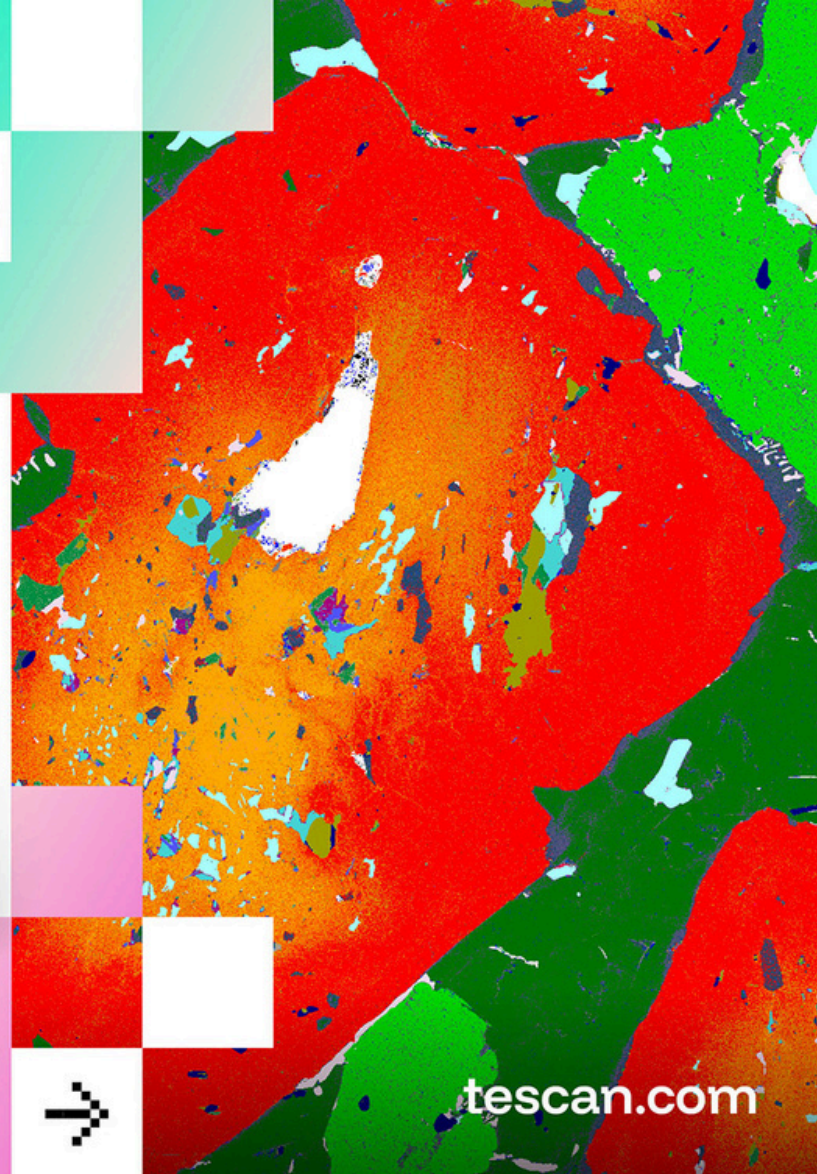
Tescan TIMA

The combined Automated Petrography and Microanalysis solution for Geoscientists

- Identify and quantify minerals automatically
- Correlate high-resolution BSE, elemental maps, and cathodoluminescence images
- Analyze thin-section scale samples with reproducible results
- Pinpoint locations of specific minerals
- Understand chemical variability across grain populations and bulk sample composition
- Estimate presence of elements not detected by EDS



Compositionally zoned garnet with abundant inclusions in eclogite rock.



tescan.com

Wonderful Scientific



Delivering world-leading imaging technologies

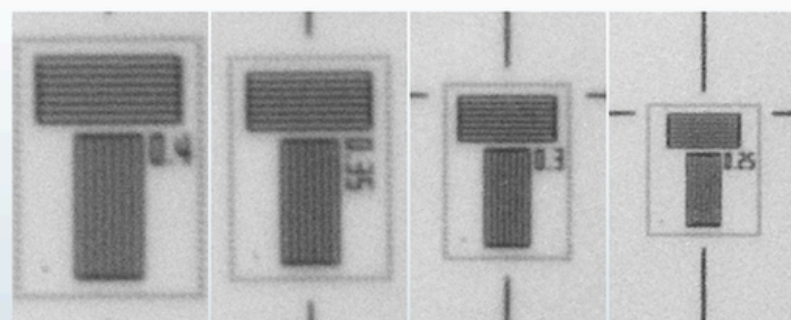
Wonderful Scientific is a sales and consulting company specialising in scientific and clinical imaging scanners.

Wonderful Scientific is the proud distributor of NeoScan benchtop Micro-CT and Nano-CT products in the UK and Ireland. We are committed to providing the highest quality instruments to our customers.

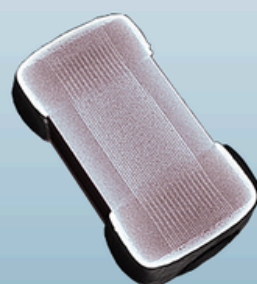
NeoScan scanners are the most advanced and innovative in the market. The recently launched N90 is the World's first bench-top Nano-CT and has 300nm spatial and 40nm voxel size at maximum resolution.

This compact and low weight scanner can fit in any laboratory, making it a truly 'personal' nano-CT. With a dual-detector configuration and an integrated full-field micro-XRF module, it provides both 3D structural visualization and elemental composition analysis in a single system. Designed for precision and ease of use, the N90 enables non-destructive imaging for a wide range of materials.

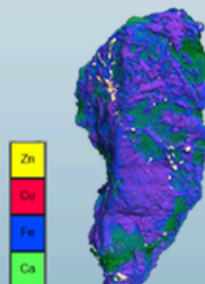
The resulting benefits make it the most robust, long lasting, scientific grade bench-top nano-CT on the market today.



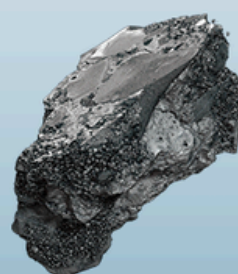
JIMA RT RC-04 RESOLUTION CHART
0.4µm / 0.35µm / 0.3µm / 0.25µm



Multilayer ceramic capacitor (MLCC):
175nm



Chalcopyrite:
N90 Optional
XRF Module



Roman Concrete:
20µm

NeoScan
N90



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Friday 27 February 2026		
0900 – 0930	Registration & Coffee	
0930 - 1000	Panel Discussion: Collaboration in Lab Management, challenges, opportunities, and the eternal quest for funding	
1000 - 1010	Improved geological phase discrimination using spherical indexing	Rene De Kloe, <i>Gatan/EDAX</i>
1010 – 1030	Microscopic Meteorites: Art, Science and Stories from space	Lorelei Robertson, <i>University of Nottingham</i>
1030– 1050	Building a pilot open-access correlative rock microscope	Marco A. Acevedo Zamora, Queensland University of Technology
1050 - 1110	Lithium to Uranium: A New Analytical SEM for Environmental Research hosted by UCL Earth Sciences	Andy Thompson, <i>University College London</i>
1110 – 1150	Break	
THEME THREE		
1150 - 1210	Micro to nanoscale characterisation of olivine, wadsleyite and ringwoodite in the Catherwood L6 ordinary chondrite and implications for the evolution of high-pressure mineral assemblages in planetary materials	Lee White, <i>Open University</i>
1210 - 1230	Hydrothermal Alteration of Isle of Rum Peridotite – A Jezero Crater Analogue	Cesca Willcocks, <i>University of Leicester</i>
1230 - 1250	Constraints on Basaltic Volcanism on Vesta: Insights from Pb-Pb Isotope Systematics in Eucrites	Hayley Lowe, <i>University of Manchester (Virtual)</i>
1250 - 1410	Lunch & Sponsor Networking	
1410 - 1420	Light Element Chemical State Analysis with New Soft X-ray Grating for SEM	Calum Dickinson, <i>JEOL (UK) Ltd</i>
THEME FOUR		
1420 - 1440	Analysis of the CM chondrite meteorite Winchcombe by FIB-TOFSIMS and SEM-EDS as advanced complimentary techniques	Diane Johnson, <i>Cranfield University</i>
1440 - 1500	4D STEM and Correlative EDS Analyses of Planetary Materials	Niamh Topping , <i>University of Leicester (Virtual)</i>
1500 - 1520	Novel Combinations of Quantum Diamond Microscopy and Electron Probe Microanalysis Reveal Intricate Intergrowths in an Unusual Meteorite	Jennifer T. Mitchell, <i>University of Minnesota</i>
1520 - 1530	Title TBC	<i>Bruker</i>
1530 - 1600	Break	
THEME FIVE		
1600 - 1650	Keynote: Laser-induced breakdown spectroscopy (LIBS) as a tool for planetary exploration: From the macroscale to the microscale on Mars and beyond.	Candice Bedford, <i>Purdue University (Virtual)</i>
1650 - 1710	GSL Publications & closing words	

Convenors:

Natasha Stephen (GSL & Imperial College London, UK)

Cesca Willcocks (University of Leicester, UK)

Duncan Muir (Cardiff University, UK)

Jen Mitchell (University of Minnesota, USA)

THANK YOU

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