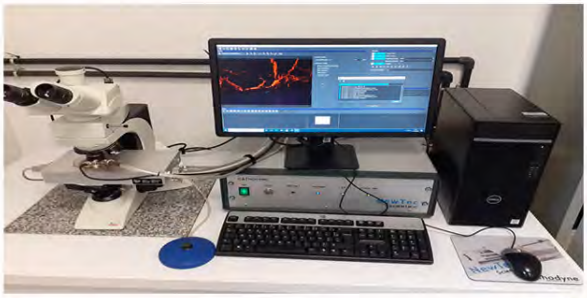
THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

CMM

Frontiers in Microscopy & Microanalysis

14:00 Hands-on Demo - Bring your samples of Cathodyne Optical Cathodoluminescence (CL)



Left & right image : Cathodyne under optical microscope and motorized stage

&

15:00 talk

In Situ Mechanical & Thermal Testing at the Nano and Micro Scale

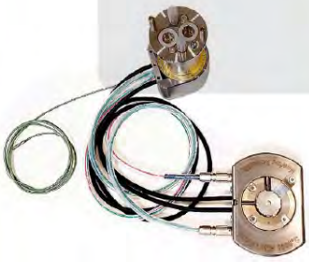
RESERVE A SEAT

NewTec Scientific design and manufacture innovative microscopy instrumentation for researchers that can perform under challenging conditions and environments. These instruments are built around scanning electron (SEM) and optical microscopes enabling researchers to gain a better understanding of their materials. In doing so, they allow them to generate a deeper understanding of how they will perform in-service and accelerate development programs compared to static methods as well as providing vastly more accurate and usable data.Their *in situ* products include:

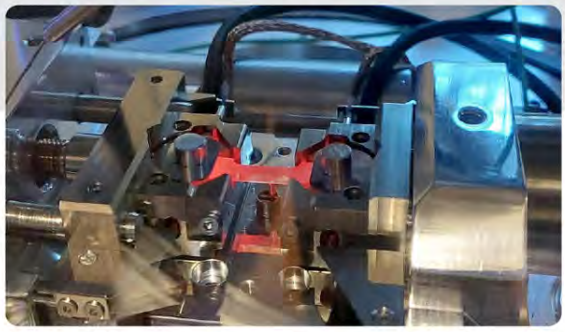
- **MT 1000 Tensile/Compression Stage which allows tensile/compression testing at temperatures up to 1000°C**
- **FurnaSEM for high temperature testing up to 1300°C**

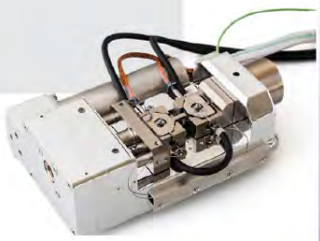
These can be used *in situ* in SEMs or optical microscopes or *ex situ*. They are supported by the ExoSEM which can perform thermomechanical testing outside your SEM, and under controlled atmospheres. The first MT1000 will be installed in the coming weeks at Monash University at a state-of-the-art *in situ* testing facility which was made possible by an ARC LIEF grant. It will be integrated with a TESCAN FEG-SEM allowing high-resolution dynamic studies to be performed.

This presentation will describe the systems and demonstrate their capabilities by way of examples and short case studies giving you a better idea of how they can be applied to your research. With deep integration with TESCAN SEMs and Oxford Instruments EDS & EBSD systems you will be able to observe and monitor physical and structural changes over extended timeframes, ideal for stress and fatigue testing.



FurnaSEM
in situ SEM Furnace





MT 1000
Tensile/Compression Stage

Dr. Kamran Khajehpour
Microscopy & Microanalysis Product Manager, AXT
Kamran is an expert Electron Microscopist with a PhD from Monash University. He has expertise in SEMs and related technologies.

Host

Presenter

Antoine Candeias
Founder, NewTec Scientific
After studying Physical Engineering at Luminy (Marseille, France), we founded NewTec Scientific in 2012 to manufacture scientific instrumentation to qualify and characterise materials *in situ* under microscopy.

Building 57, Research Road; UQ St Lucia
CAI Seminar Room Level 1
on Monday 16th March 2026; 14:00-16:00