

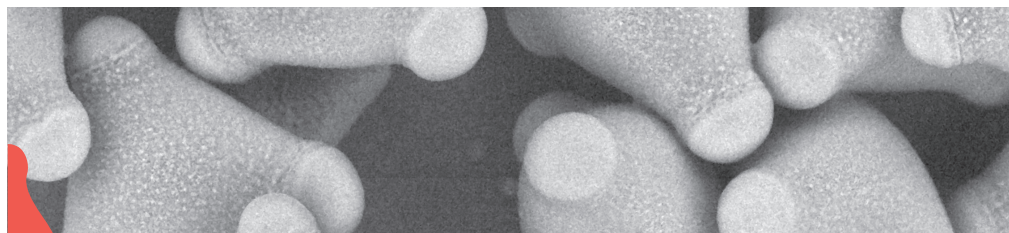


The Hitachi “Inspire STEM Education” initiative is being delivered to Queensland schools through a partnership between the Centre for Microscopy and Microanalysis (CMM) at the University of Queensland and the Adelaide-based company NewSpec. This program strives to build connections to the world around us through hands-on, experimental, and discovery learning, forging strong and genuine learning outcomes.

## About the Program

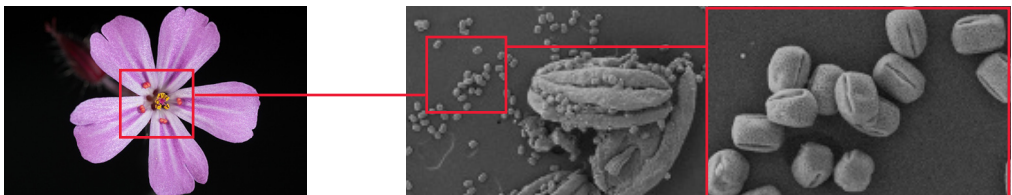
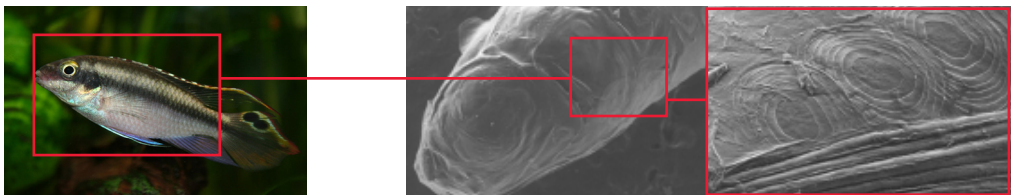
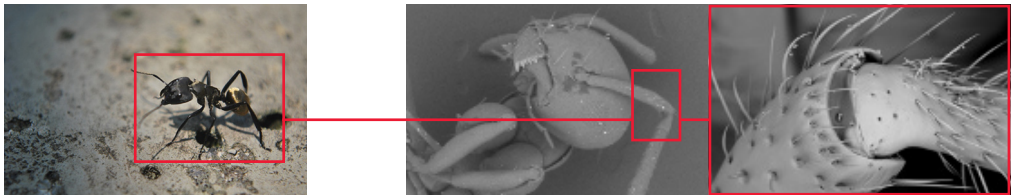
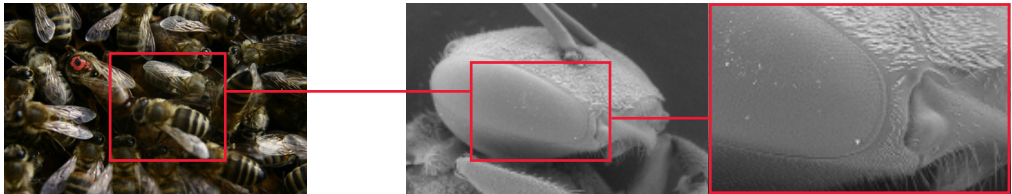


When used in philosophically sound, high-quality programs, technology can ignite, enhance, and fortify learning pathways, and inspire curious minds to explore broadly, question further and deeply enriches our experience of the world. The program is designed to add value to both teachers and students. Becoming familiar with nanotechnology is of significant importance when we consider the breadth of its real-world applications. Whatever the topic, whatever the interest, this technology is relevant and can be applied in a way that enriches the learning experience and enhances learners’ connections to our incredible world.



The gap between the technical skills available for STEM related careers and the technical skills required will impact directly upon our ability to find solutions for many of the world’s problems (Hitachi, 2017).

Sciences and the Environment

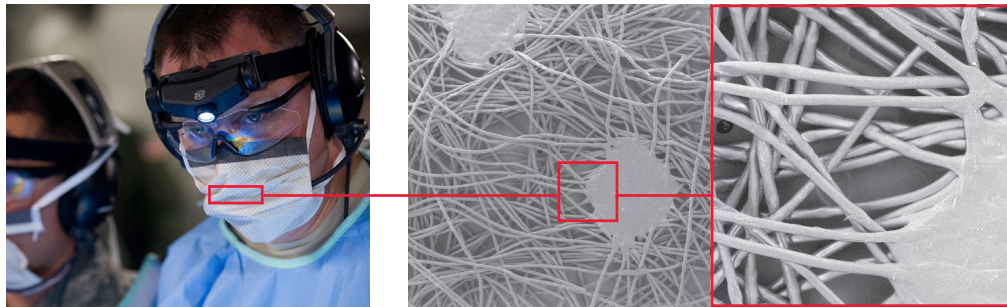
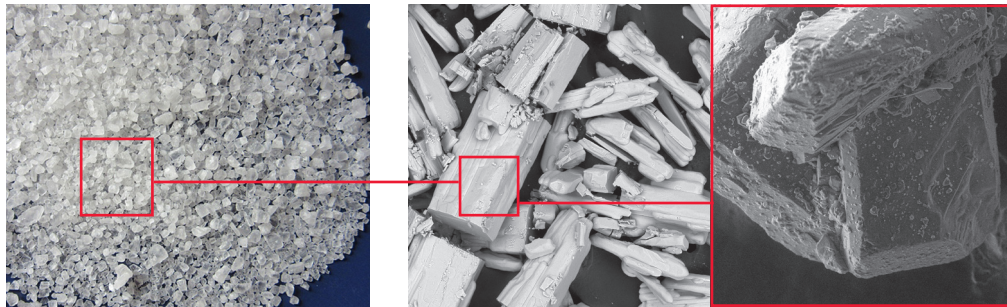
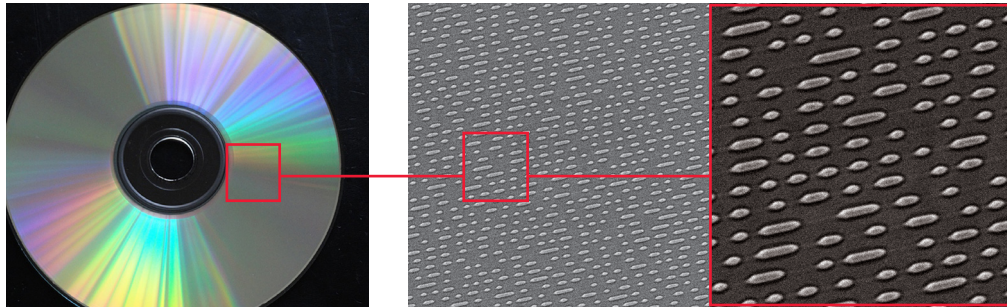


"The highlight for teachers and students was simply being able to access a piece of equipment that most people do not get to see in their lifetime. There were so many "Whoa!" moments as students did slow scans of samples (particularly insects) and saw levels of detail they had not previously seen."

*Tullawong State School*



## Health and Technologies



“The potential to challenge stereotypes is key to engage and build the aspirations of young people in STEM. It is a significant challenge of attracting students, particularly underrepresented groups, but it is exactly why teachers like myself and many others at Yeronga State High School strive every day to be that someone in a young person’s life who encourages and inspires them to ‘have a go’ and aim high.”  
 Louise Edwards, on the value-add of the Inspire STEM Education program to her work.

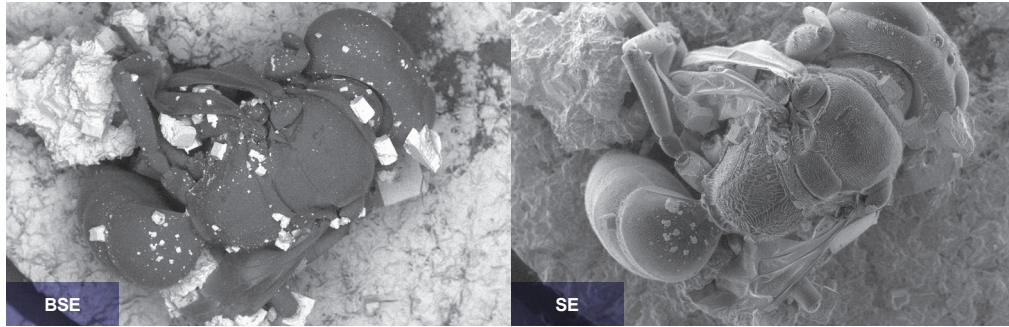
The electron microscope reveals to all age groups, abilities, and fields of interest that there is more to our surroundings than what we can see with the naked eye. A whole new world is opened up when you take something of interest and look at it on a different scale.

There are many applications of this nanotechnology, including in the fields of biological research, industrial manufacturing, medicine, aerospace, geology, food, agriculture, fisheries, cosmetics, archaeology, forensics, materials research, oceanography, and entomology.



## Spot the Differences!

Why do you think the salt crystals and the bee appear differently under different imaging modes?



## Fibre Wheel

How many other fibre types can you find using the electron microscope?

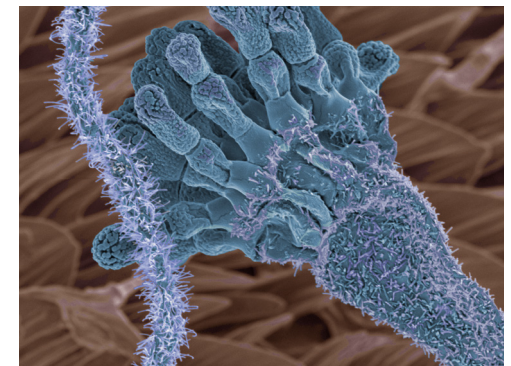
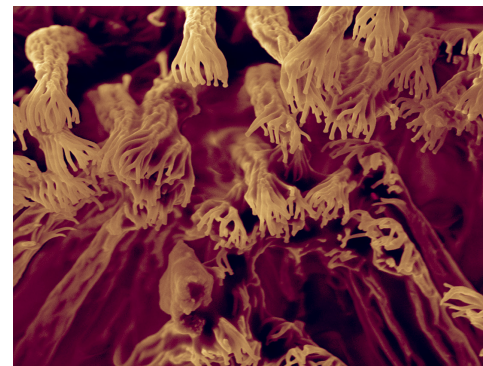
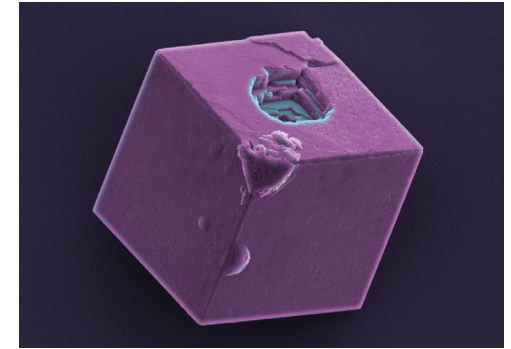
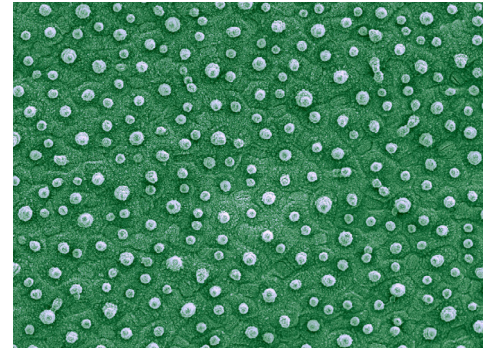
See <http://myscope-explore.org/> for more ideas.



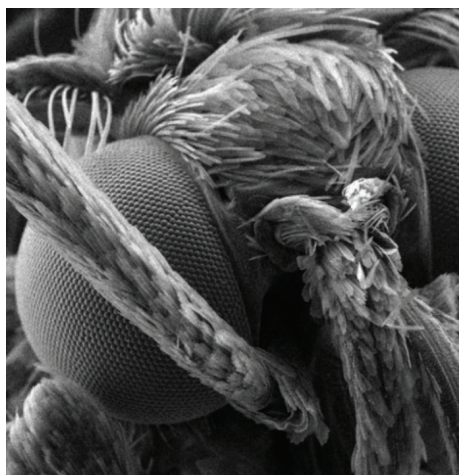
## Can you identify what these images are of?



Carbonate crystal | Fish embryo | Fungal conidia | Gecko foot | Leaf somata | Louse on feather







A new world is discovered when you look at something on a micro level. The learning experience is undisputedly enriched through utilising this technology.

**HITACHI**  
Inspire the Next

## Inspiring our Future



The Hitachi TM4000 is a desktop-sized scanning electron microscope (SEM), making it perfect for students to gain hands-on access to research-grade technology. The easy transport and operation of this instrument make it ideal to install and leave at school sites for weeks at a time. With the adaptability to a changing world, we also offer online introductory and informational sessions on the use of the TM4000 electron microscope.

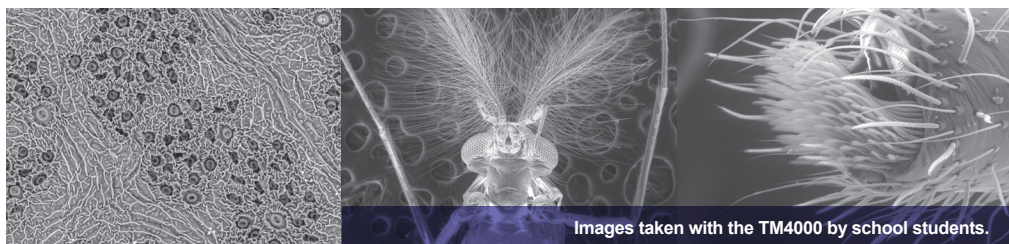
## Contact Us to Book



Once your booking with us is confirmed, the TM4000 will be installed at your site on a Friday afternoon preceding your confirmed hire period. The collection of the instrument will occur on the final Friday of your hire period. Your nominated staff will be fully trained on the mechanics, capabilities, and operational procedures of the TM4000, and will be confident in supporting students to collect and effectively image their own samples.

## Contact us to discover further details:

[outreach@newspec.com.au](mailto:outreach@newspec.com.au)  
[inspireatcmm@uq.edu.au](mailto:inspireatcmm@uq.edu.au)



Images taken with the TM4000 by school students.



**NewSpec**



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