EDITH COWAN UNIVERSITY

Mössbauer Spectroscopy: Fundamentals and Applications in Materials Science, Environment, and Space Exploration

This one-day course offers a comprehensive introduction to Mössbauer spectroscopy, a powerful technique for probing the atomic and magnetic structure of materials.

Tailored for materials scientists, engineers, and environmental professionals, the course covers the fundamental principles of the Mössbauer effect—such as isomer shifts, quadrupole splitting, and magnetic hyperfine interactions—and how these phenomena provide deep insights into the local environments of Mössbauer-active nuclei, particularly iron.

Participants will gain practical knowledge of experimental setups, data acquisition, and spectral interpretation, with a strong emphasis on real-world applications. Key topics include:

- Materials science applications
- Green steel development
- Mineral characterisation
- Data analysis
- Fe^2 /Fe^3 analysis
- Environmental science
- Space exploration
- Operational safety

Facilitator: Professor Paulo de Souza is the Executive Dean of the School of Science at ECU and a leading expert in Mössbauer spectroscopy. He has applied Mössbauer techniques across a wide range of disciplines, including materials science, environmental geochemistry, and planetary exploration including NASA's Mars Exploration Rover missions.

Details

DATES
Wednesday 16 July 2025

TIME
10:00 am - 4:00 pm
(lunch and tea provided)

LOCATION
Building 27
ECU Joondalup Campus

COST
Free

Register now

https://www.trybooking.com/DCQKO

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More information visit www.ecu.edu.au/short-courses or email seadmin@ecu.edu.au

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