



## Doctor James Downes

ASSOCIATE DEAN LEARNING AND TEACHING  
FACULTY OF SCIENCE AND ENGINEERING

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James Downes (B.Sc. (Hons) Victoria University (NZ) 1995, PhD Boston University (USA) 2004) is the Associate Dean Learning and Teaching in the Faculty of Science and Engineering and Senior Lecturer in the Department of Physics and Astronomy of Macquarie University.

In his faculty role, he provides leadership in learning and teaching matters and oversees the student experience, from staff professional development through to innovations in teaching technology and associated governance processes.

His research group studies novel semiconductor materials and their application to new electronic devices, characterising their electronic and magnetic structure using synchrotron x-ray- and reactor neutron-based techniques respectively. His current research looks at rare-earth nitride intrinsically ferromagnetic semiconductors, with applications in spintronics, and electronic devices based on the optical manipulation of the 2-D hole gas formed in hydrogen-terminated single-crystal diamond surfaces.

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