ANSTO interview: Dr Michael James

**The Australian Synchrotron – the swiss army knife of particle accelerators**

### About this interview

Watch this interview with [Dr Michael James](https://www.ansto.gov.au/people/prof-michael-james) as he discusses the physics principles used in the Australian Synchrotron to collect data for a wide variety of applications.

### Syllabus links

Investigating Science

* Module 7 –Technologies, IQ2 a continuous cycle
  + Using examples, assess the impact that developments in technologies have had on the accumulation of evidence for scientific theories, laws and models.

Physics

* Module 7 – The nature of light, IQ4 light and special relativity
  + Describe the consequences and applications of relativistic momentum
* Module 8 – From the universe to the atom, IQ5 deep inside the atom
  + Investigate the operation and role of particle accelerators in obtaining evidence that tests and/or validates aspects of theories, including the standard model of matter.

Science Extension

* Module 2 IQ 4 Processing Data for Analysis
  + assess the impact of making a large data set from scientific sources public

### In the classroom

This resource can be used to investigate technologies used to validate evidence and understanding of models and theories.

Further reading for

* [Australian Synchrotron beamlines](https://www.ansto.gov.au/user-access/instruments/australian-synchrotron-beamlines)
* [Meet an Expert Videoconferences](https://www.ansto.gov.au/education/secondary/videoconferences/meet-an-expert): Choose a research topic and interview one of ANSTO's scientists
* Data processing at the LHC
  + <https://home.cern/resources/video/computing/processing-lhc-data>
  + [Computing at CERN](https://indico.cern.ch/event/743308/contributions/3396767/attachments/1879687/3096548/HST-CERN-2019-v1.2.pdf) – a presentation from Xavier Espinal delivered as part of the 2019 International High School Teacher Programme.
* [Transporting and processing data at the Square Kilometre Array](https://www.skatelescope.org/signal-processing/)

### Acknowledgements

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