ANSTO interview: Dr Andrew Smith

**Every question is worth asking**

### About this interview

Watch this interview with Dr Andrew Smith as he discusses the role of accelerator science in the dating of ice cores from Antarctica in order to analyse past climates through the composition of air bubbles trapped inside the ice.

This interview would be relevant for students studying climate science in Earth and Environmental Science as well as technologies in Investigating Science.

### Syllabus links

Earth and Environmental Science

* Module 7 – Climate Science, IQ2 evidence for climate variation
  + Identify and explain more recent evidence of climate variation including but not limited to ice cores containing gas bubble and oxygen isotopes.

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 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.

### In the classroom

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

Further reading for Investigating Science and Physics:

* [ANSTO Accelerator mass spectrometry](https://www.ansto.gov.au/accelerator-mass-spectrometry)
* [ANSTO Accelerators](https://www.ansto.gov.au/research/facilities/centre-for-accelerator-science#content-accelerators)
* [CERN Accelerators](https://home.cern/science/accelerators)

Further reading for Earth and Environmental Science and Investigating Science:

* [ANSTO Cosmogenic isotope dating](https://www.ansto.gov.au/cosmogenic-isotope-dating)
* [ANSTO Radiocarbon dating](https://www.ansto.gov.au/research/facilities/centre-for-accelerator-science/radiocarbon-dating)
* [How carbon atoms are extracted from old Antarctic air](https://www.abc.net.au/news/2020-04-07/nols_foreigncoro1_0604/12125664?nw=0) Foreign Correspondent, ABC clip (1:22)
* [The hunt for hydroxyl radicals in Antarctica](https://www.abc.net.au/news/2020-04-07/antarctica-climate-change-law-dome-hunt-for-hydroxyl-radicals/12110980?nw=0) could reveal the secrets of our future climate Foreign Correspondent ABC News video (1:42) and article.
* [ANSTO Data set](https://www.ansto.gov.au/education/resources/data-sets): Historic greenhouse gas concentrations from Antarctic ice core sampling

### Acknowledgements

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