Fusion technology: from ANU to the world

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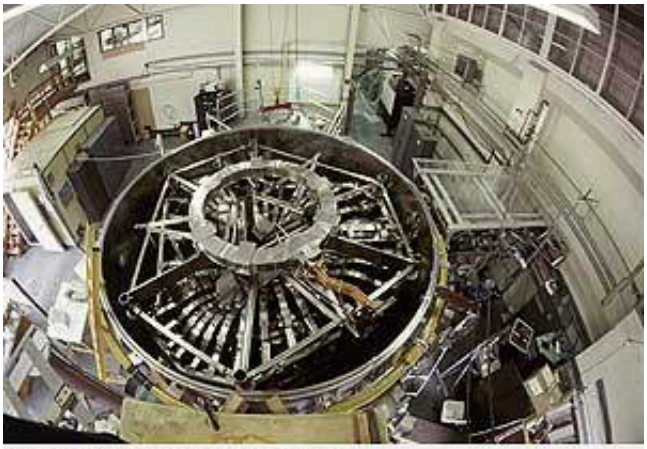

The H1 Plasma Facility at ANU.

Technology pioneered at ANU that could see the future of power generation become clean and green has come a step closer today with the announcement of an international development to harness fusion technology.
Australian scientist Sir Mark Oliphant is regarded as the discoverer of the process of fusion in 1932. He founded fusion plasma research at ANU in the early 1950s, which continues today.

Fusion uses plasma physics — the process which powers the sun — to generate power with minimal greenhouse gas emissions. Fusion occurs when the hydrogen isotopes deuterium and tritium are placed under great pressure.

A major project to begin large-scale investigation into the potential of fusion technology was announced overnight, with the $10 billion International Thermonuclear Experimental Reactor (ITER) to be built in Cadarache, in southern France.

ITER will be owned and funded by the United States, Russia, China, Japan, South Korea and the European Union.

Dr Matthew Hole from the ANU Research School of Physical Sciences and Engineering says it is a major move towards truly 'green' power.

"Unlike traditional fossil fuel and nuclear power plants, fusion reactors produce minimal greenhouse gas emissions with short-lived radioactive waste, by comparison to fission. They're also inherently safe, with no possibility of the reaction itself running out of control.

"What's exciting about it is that it has near-zero greenhouse gas emissions and there's a virtually limitless quantity of fuel. It's green energy that will hopefully power civilization in the future."

Today, the H1 Major National Research Facility at ANU is considered to be at the forefront of fundamental fusion research in Australia.

The H1 experiment, which confines the hot plasma in flexible magnetic fields, is designed to provide a test bed for fundamental plasma research.

Dr Hole says it will be at least another 30 years before the commercial development of fusion energy becomes a possibility, but in the meantime ANU researchers are continuing their work to better understand the fusion process.

Dr Hole leads an Australian group of scientists and engineers from universities around the country, the Australian ITER Forum, which aims

to advance fusion science in Australia and promote an Australian role in the ITER project in France.

Source: Australian National University