

Cold fusion debate heats up again

The long-standing debate about cold fusion is receiving new impetus at the American Chemical Society's national meeting in the US this week.

Cold fusion, first announced 20 years ago on Monday, was claimed to be a boundless source of clean energy by Martin Fleischmann and Stanley Pons.



Pons' and Fleischmann's announcement was made on 23 March 1989

Attempts to replicate their experiments failed, but a number of researchers insist that cold fusion is possible.

The meeting will see several approaches that claim to produce fusion power.

The American Chemical Society has organised sessions surrounding the research at its meetings before, suggesting that the field would otherwise have no suitable forum for debate.

In a bid to avoid the negative connotations of a largely discredited approach, research in the field now appears under the umbrella of "low-energy nuclear reactions", or LENR.

Gopal Coimbatore, ACS programme chair for an LENR session at the 2007 national meeting, said that "with the world facing an energy crisis, it is worth exploring all possibilities".

Heating up

The principle of cold fusion runs counter to that of other fusion production mechanisms that employ enormous lasers or magnetic chambers to contain searingly hot gas.

Pons and Fleischmann ran a current through a simple, room-temperature device called an electrolytic cell.

They observed a heat rise in the cell, suggesting that power was being produced within it from nuclear fusion.

However, a flurry of attempts to repeat the experiment around the world, an extensive review by the US Department of Energy of cold fusion research, and a few years spent by Pons and Fleischmann themselves working on the approach in France failed to establish cold fusion as a reality.

Researchers who pursue LENR approaches say that their work has been marginalised and suffers from a chronic lack of funding in the wake of the initial, flawed announcement.

Frank Close, a professor of theoretical physics at the University of Oxford, says that the far greater problem with cold fusion claims is that results from any given study have never been independently verified - a problem that plagued that first announcement.

"Nothing's really changed in 20 years. I'm not at all surprised that something is being said today," Professor Close told BBC News.

"It is an interesting date in the calendar of wrong results that claim to be science."

Many of the details of Pons and Fleischmann's original electrolytic cell feature in more recent work, including the type of metal used in the cell's electrodes and water made from a heavy isotope of hydrogen.

One wholly new approach will be explained by researchers from Hokkaido University, who have seen unexplained heat production in a chamber filled with compressed hydrogen and a chemical called phenanthrene.

Professor Close said that many inexplicable phenomena have arisen in the 20 years since Pons and Fleischmann's announcement that have been tagged with the "cold fusion" moniker.

"If I come up with a weird phenomenon and call it cold fusion, I know that reporters will be interested. Convincing the scientific community is another matter entirely."

“ I'm not at all surprised that something is being said today. It is an interesting date in the calendar of wrong results that claim to be science ”

Professor Frank Close
Oxford University



NIF, the world's largest laser, is designed to initiate nuclear fusion