



How Thorium Could Save the Planet

Professor Robert Cywinski,
School of Applied Sciences, University of Huddersfield

WOLFSON LECTURE THEATRE, CHURCHILL COLLEGE

7.30 p.m., Monday 14th, November 2011

Towards an alternative nuclear future

There are very strong arguments that nuclear power has a crucial role to play in the global drive for cleaner energy. However, it is equally clear that there remain concerns about safety, sustainability, waste management and proliferation. In this talk I will show how these concerns could be alleviated by moving from a nuclear industry based upon uranium and plutonium fuel cycles to one based upon the element thorium. Methods of deploying thorium fuel will be presented, and in particular it will be proposed that nuclear power generation based upon an innovative accelerator driven subcritical nuclear reactor technology fuelled by thorium may offer an acceptable way forward.

About the speaker:

Professor Cywinski graduated with a PhD from the University of Salford in 1976, and embarked upon a research career in neutron scattering and μ SR studies of magnetic and superconducting alloys and compounds. In 1980, following research fellowships at Imperial College, London, and Monash University, Melbourne, he joined the small team that built ISIS, which for 20 years was the world's most powerful neutron spallation source, at the Rutherford Appleton Laboratories. In 1985 Bob was appointed as Lecturer in Physics at the University of Reading, and in 1994 became Professor of Natural Philosophy at the University of St Andrews. From 2000 to 2008 Bob was Professor of Physics and Dean of Research for the Faculty of Maths and Physical Sciences at the University of Leeds, before moving to the University of Huddersfield where he is Dean of Applied Sciences.

Whilst maintaining active research programmes in condensed matter science, Bob has also taken a leading role in large scale national and international science projects. He has been a key figure in developing and promoting the 1.3b€ European Spallation Source project, soon to be built in Sweden, and was responsible for initiating the £8M RCUK CONFORM project to develop, construct and exploit an entirely new type of particle accelerator (the ns-FFAG) for cancer therapy, power generation and muon production. CONFORM has spawned a number of projects focussing upon Accelerator Driven Subcritical Reactor technology, particularly using thorium as a nuclear fuel. This in turn has led to the foundation of the Thorium Energy Amplifier Association (ThorEA), which Bob now chairs.

Bob's role in international science has included Chairmanship of the European Neutron Scattering Association, Presidency of the International Society for Muon Spectroscopy (Europe) and advisory committee membership at JINR (Dubna), TRIUMF (Vancouver), J-PARC (Tokai), ILL (Grenoble), and ISIS (Oxfordshire) as well as membership of three international prize committees. Bob also actively promotes the public understanding of science and has made a number of science movies, appearing as the Quantum Cowboy, and working with Lord Robert Winston and Sir Patrick Stewart.

Additional note

The CSAR Lectures are open to all; CSAR members are admitted free. Non-members are asked to make a nominal donation of £3.00.

Coffee and biscuits will be available in the Wolfson Foyer from around 7pm until the start of the lecture. Location information: <http://www.chu.cam.ac.uk/about/visitors/directions.php>

The talk will be held in the lecture theatre in Wolfson Hall (4):

