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CAMBRIDGE SOCIETY FOR THE APPRECIATION of RESEARCH

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Nuclear Fusion as a Global energy source?

Work at the UKAEA Culham Laboratory and elsewhere to harness fusion energy

Professor Chris Llewellyn-Smith FRS

Director, UKAEA Culham Laboratory, Abingdon, Oxford
Chairman Consultative Committee for Euratom on Fusion

7.30 p.m., Monday 11th June 2007

The Wolfson Lecture Theatre, Churchill College, Storey's Way, Cambridge

Professor Llewellyn-Smith writes:

"THE PATH TO FUSION POWER"

Fusion, which powers the sun and stars, is potentially an environmentally responsible and intrinsically safe source of essentially limitless energy. The Joint European Torus (JET) has produced 16 MW of fusion power, and construction of a power station sized device called ITER (International Tokamak Experimental Reactor), which should produce at least 500 MW, is about to begin. An International Fusion Materials Irradiation Facility (IFMIF) is also needed to test materials that will have to stand up to years of intense neutron bombardment in a fusion power station.

Given

- i) its potential attractions (which include essentially limitless fuel, and the absence of green-house gas and of long-lived radio-active by-products), and that
- ii) it looks as if the economics of fusion power will be acceptable

the time has come to develop fusion as rapidly as reasonably possible.

The status and potential advantages of fusion will be described, together with the outstanding challenges, the remaining steps and a timetable for developing fusion power.

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About the Speaker:

Professor Llewellyn-Smith is a theoretical physicist who has worked on a wide range of topics related to particle physics experiments. He was elected Fellow of the Royal Society since 1984, and knighted in 2001 for services to particle physics. After working at Moscow's Lebedev Institute, CERN and Stanford Linear Accelerator Centre, he joined Oxford University in 1974, leading the creation of one of the UK's top-rated physics departments. Became CERN Director General in 1994, and was President and Provost of University College, London from 1999-2002.

The Organising Secretary adds.....

We've had Professor Llewellyn-Smith as a speaker before, and very good he was, too! He visited us a few years ago to talk about his work commissioning the Large Hadron Collider at CERN. Obviously, that was not sufficient of a challenge for him, so now he's the UK's top man on nuclear fusion as a power source!

I am sorry about the loss of Dr Jonathan Milner's lecture on 28th May; he inadvertently booked himself a visit to Greece. But we'll get him next year, and I shall try and work out ways of making up for the 'lost lecture' in this programme. I did explore tacking it on to the end of this year's programme, but he is out of the UK for several weeks, and a lecture in the middle of summer probably doesn't make good sense. We'll see him in next year's programme

Have a lovely summer!

Best Regards

Richard Freeman, CSAR Organising Secretary

Coffee available, as usual, in the foyer outside the lecture theatre from ~7.00 p.m.

You will notice a change in my address; I no longer work for Sagentia, so I am organising your CSAR lectures from my home!

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