



Cambridge Society for the Application of Research

Churchill College
Storey's Way
Cambridge
CB3 0DS

www.csar.org.uk

Bulk High Temperature Superconductors Revolution or Red Herring?

Professor David A Cardwell

Professor of Superconducting Engineering
Department of Engineering, University of Cambridge

7.30 p.m., MONDAY 21st March, 2011
WOLFSON LECTURE THEATRE, CHURCHILL COLLEGE
Storey's Way, Cambridge

Please note that we are now **back in Churchill College** for our lectures

About this lecture:

Professor Cardwell writes:

"The discovery of the so-called High Temperature Superconductors in 1987, which are able to conduct very high electrical currents and hence generate extremely high magnetic fields at liquid nitrogen temperatures, was heralded as the most significant scientific breakthrough since the discovery of the transistor. This talk will describe in a qualitative way the properties of these remarkable materials, their manufacture and their potential for engineering applications, which include frictionless bearings, energy storage systems, MRI and high-field permanent magnets."

About the speaker:

David Cardwell is Professor of Superconducting Engineering in the Department of Engineering, University of Cambridge, where he is also Deputy Head of Department with responsibility for Graduate Studies. Formerly, Professor Cardwell worked GEC-Marconi Materials Technology Ltd (formerly Plessey Research, Caswell) as a Senior Principal Scientist. Professor Cardwell leads the Bulk Superconductor Research Group at Cambridge on the processing and applications of bulk high temperature superconductors, which can be used to generate magnetic fields much larger than those that can be produced by conventional magnets.

Along with other roles and duties, he is Chair of the Institute of Physics Superconductivity Group and Treasurer of the European Society of Applied Superconductivity (ESAS)

Professor Cardwell is a Fellow and Admissions Tutor for Sciences at Fitzwilliam College in Cambridge, and has authored over 260 technical papers and patents.

The Organising Secretary adds....

Well, we are finally back in our old haunt; coffee will be in the **Wolfson Foyer**, and the lecture will take place in the **Wolfson Lecture Theatre**.

And chocolate biscuits will be resumed!

The Möller Centre was a charming and most interesting diversion – but it will be nice to be home.

This lecture includes a demonstration of **high-temperature superconductivity**, in the form of **magnetic levitation**. The aeronautical engineers amongst you will not regard this as alarming, but if you do have a problem with heights, perhaps best not to sit too near the back. See <http://www.youtube.com/watch?v=nWTSzBWEsms> for more.

Please watch our website for any last-minute changes. This is now updated in near real-time, thanks to the diligence of our new webmasters Dr Nigel Bennée and Mrs Eileen Bennée. Nigel is also our Membership Secretary.

Best Regards

Richard Freeman
Organising Secretary
Phone 01799 525 948 (home)
07500 444 985 (mobile)
01707 398 729 (work)
richard.freeman@ntlworld.com / richardf@exemplas.com

CSAR Council

Prof Brian J Ford (President)
Dr Richard Freeman (Organising Secretary)
Sir Sam Edwards, (Past President)
Dr Richard Jennings (Past Vice-President)
Dr Nigel Bennée (Membership Secretary)
Mr Jim Cleland

Dr Peter Forster (Vice-President)
Mr Robin Bligh (Honorary Treasurer)
Susan Gurney (Organiser for Visits)
Mrs Elizabeth Platts
Dr Illesh Bidd