March 15, 2012

Speaker: Prof Roger C. Reed
Director of Research, Metallurgy & Materials
University of Birmingham, Edgbaston, Birmingham, UK (www.birmingham.ac.uk)

Directions: Margaritas Mexican Restaurant - 350 Roberts St., East Hartford, CT, Ph: (860) 289-7212
I-84 Exit 58 Roberts Street: From the East, turn right onto Roberts St. and the restaurant is immediate on the left. From the West, turn left on to Robert St. and after the first light the restaurant is immediate on the left.

Agenda:
Cocktails: 5:30-6:30 PM
Dinner: 6:30-7:30 PM
Program: 7:30-8:30 PM

Program Charges:
Regular Members - $28.00
Retirees - $15.00
Full Time Students - $15.00

Technical Chairperson: David Furrer
Reservations: Call Linda at Service Steel Aerospace (203) 906-6381 by noon March 12th.

Thanks!

Abstract:
In the field of high temperature materials – for applications such as jet propulsion and power generation – numerical modelling is playing a pivotal role in driving technology development. In this presentation, the use of modelling to describe the creep deformation behaviour of single crystal superalloys will be described. The role of Re in particular is elucidated. A composition-dependent theory is developed, which is sensitive to both alloy chemistry and microstructure. It is demonstrated that the new theory can be incorporated into alloys-by-design approaches [1] for the isolation of new grades of single crystal superalloy. Examples are given, particularly for power generation applications. The more widespread use of modelling – for example for the modelling of casting and welding processes – will be considered too.


Bio:
Roger Reed is Professor and Director of Research of the School of Metallurgy and Materials, University of Birmingham.
His expertise relates to the physical metallurgy of high temperature materials, particularly those employed in the gas turbines used for jet propulsion and power generation.

He has taught widely in the field at a number of different universities: Cambridge, Imperial College London, The University of British Columbia and now Birmingham.

He earned a PhD in Materials Science and Metallurgy, Cambridge in 1990 and a BA in Natural Sciences, Cambridge in 1987.

Dr. Reed does research on the structure, constitution, processing and performance of high temperature alloys for gas turbine applications, particularly the nickel-based superalloys, titanium alloys and coatings used for them.
He is Director of Partnership for Research in Simulation of Manufacturing and Materials, the Chair of the Programme Committee for International Symposium for Superalloys and a Fellow of the Institute of Materials, Minerals and Mining.