

## *HEmS – Hydrogen in Metals Grant meeting*

Dept. of Engineering Science, University of Oxford - 25 September 2014

The HEmS (Hydrogen in Metals) Programme Grant held its inaugural meeting in Oxford, on 25 September 2014. We were delighted to welcome over 50 supporters from around the world, including academics, students and representatives from our industrial partners. The day focused on the problems of Hydrogen embrittlement in metals and the grant's research plans over the coming 5 years. A huge thank you to all those who participated and attended.



### Presentations

#### *Welcome and overview*

Professor Alan Cocks, University of Oxford

#### *Hydrogen embrittlement in complex microstructures*

Dr Pedro Rivera, University of Cambridge

#### **HEmS – Hydrogen in Metals**

HEmS (Hydrogen in metals - from fundamentals to the design of new steels) is a major initiative to investigate the process of embrittlement of metals from hydrogen. The research is funded by the EPSRC and is a joint collaboration between the Universities of Oxford, Cambridge, Sheffield and Imperial and King's Colleges London.

<http://www.hems.ox.ac.uk/>

***Experimental approach to controlling microstructures in steel for increased resistance to Hydrogen embrittlement***

Professor Mark Rainforth, University of Sheffield

***Computational modelling of Hydrogen embrittlement in welds***

Dr Olga Barrera, University of Oxford

***Multiscale modelling of materials chemomechanics***

Dr James Kermode, King's College London

***Hydrogen at Fe-carbide interfaces***

Dr Robert Horton, Imperial College London

***Accuracy and transferability of GAP models for tungsten***

Dr Wojciech Szlachta, University of Cambridge

***Challenges in Hydrogen embrittlement: from Experiments and Modelling to Prognosis***

Professor Petros Sofronis, University of Illinois

***Hydrogen embrittlement and challenges in the development of new cold rolled high strength steels***

Dr Oliver Rott, ThyssenKrupp Steel Europe AG

***Progress in HEmS Work Package 4, with a focus on atomistic to mesoscale theory***

Professor Tony Paxton, King's College London

***From atomistic to engineering aspects of Hydrogen embrittlement via the defactant concept***

Prof. Dr Reiner Kirchheim, Georg-August-University, Göttingen

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