

Carnegie Mellon

Materials Science and Engineering Seminar Series

Materials Research at Carnegie Mellon

Prof. Alex King

Purdue University

“Triple Junction Science and Engineering”

Friday, November 3, 2006

11:00 A.M. Seminar in Doherty Hall 1212

Refreshments precede seminar at 10:30 A.M. in 2325 Wean Hall

Triple junctions are linear microstructural features where the interfaces between three distinct components meet. While they have traditionally been regarded as “property-less” junctions between planar defects, there is increasingly persuasive evidence that they have distinct properties of their own. In this presentation, we will review the state of the art in measuring triple junction properties, and demonstrate that there are some intrinsic problems in determining the triple junction energy, in particular. We will also present some recent experimental results from a project aimed at exploiting triple junctions to design materials with unusual properties.

Alex King was born and raised in London, England. He attended the University of Sheffield as an undergraduate and earned his doctorate from Oxford, in 1979. He has worked as a post-doc at Oxford and MIT before joining the State University of New York at Stony Brook as an assistant professor in 1981. He served as Stony Brook's Vice Provost for Graduate Studies (Dean of the Graduate School), from 1987 to 1992. He moved to Purdue University to be the Head of the School of Materials Engineering, in 1999. He was a US State Department Jefferson Science Fellow for 2005-06 and a Co-Chair of the Gordon Conference on Physical Metallurgy, for 2006

King's research program focuses upon interfacial structure and behavior but he has diversified from his original work in metals into other areas such as thin films, semiconductors, polymers and materials processing. He is a Fellow of both ASM International and the (UK) Institute of Materials. He was a Visiting Fellow of the Japan Society for the Promotion of Science in 1996. He has been the Print and Electronic Media Review Editor for the Elsevier journal Materials Science & Engineering A and is an Editorial Advisory Board Member for Trans Tech Publications. He was a member of the Board of Review of Metallurgical Transactions A from 1988 to 1998. He was an elected Councilor of MRS for 1998-2000, and a member of its Executive Committee from 1999 through 2003. He was the President of MRS for 2002. He serves as a member of the Executive Committee of the Federation of Materials Societies (from 2004) and chairs the University Materials Council for 2006-07.