CENTER FOR MATERIALS PROCESSING AND TRIBOLOGY
DISTINGUISHED SEMINAR

The Evolution of Critical Materials

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Potter 234, The K.S. Fu Room

Abstract

A few times before, and several times since the beginning of the industrial revolution, there have been instances when certain materials have fallen into short supply. These events cause price instabilities, industrial disruptions, and sometimes also result in various kinds of geopolitical turmoil. In almost every case, the direction of technology development is changed.

Most recently we have seen a crisis in the availability of some of the rare earth elements, marked by extreme price rises in 2010 and 2011

In this talk we will look at how materials supply crises arise, what has happened since the rare earth price spike, what the prospects for supply disruptions might be in the coming decades, and what we might be able to do about it.

Bio sketch Alex King is the Director of the Critical Materials Institute – one of DOE's four Energy Innovation Hubs. Alex holds degrees from the Universities of Sheffield and Oxford. He was a postdoc at Oxford and then M.I.T. before joining the faculty at Stony Brook University, where he also served as the Vice Provost for Graduate Studies. He has served as the Head of the School of Materials Engineering at Purdue and the Director of DOE's Ames Laboratory.

King is a Fellow of the Institute of Mining Minerals and Materials; ASM International; and the Materials Research Society (MRS). He was a Visiting Fellow of the Japan Society for the Promotion of Science in 1996 and a US Department of State Jefferson Science Fellow for 2005-06. Alex was the President of MRS for 2002, Chair of the University Materials Council of North America for 2006-07, Co-chair of the Gordon Conference on Physical Metallurgy for 2006, and Chair of the APS Interest Group on Energy Research and Applications for 2010.

Refreshments at 1045 AM

Additional information from S. Chandrasekar (chandy@ purdue.edu)