

SEMINAR & SPEAKER INFO

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Recycling NdFeB Magnets: Why is it so counterintuitive?

Abstract:

The rare earth price spike in 2010-2011 spurred research activity in three distinct directions 1) seeking substitute materials to replace rare earths, 2) redesigning products to use less rare earth material and 3) recycling rare earths to reduce demand. These are all activities undertaken by the Critical Materials Institute at Ames Lab. This talk will focus on the last topic, recycling, as it might be applied to rare earth magnets. These magnets represent the largest single use of rare earths today, so there many potential benefits to recycling them. After discussing where rare earth magnets are used, possible recycling methods will be discussed, along with the accompanying commercial and technical issues. The path to a commercially viable process is not a simple as it might first appear.

Speaker Bio:

Stan's professional life, almost forty years, has been almost evenly divided between the permanent magnet and rare earth industries. For the last twelve years, he has run a consultancy called Spontaneous Materials serving clients in these industries on a wide variety of technical and commercial projects. His previous employers include Molycorp, Magnequench, Hitachi Magnetics, Crucible Magnetics and Recoma. For the current semester, he is a Visiting Assistant Professor of Physics at St. Olaf College in Northfield, MN. Dr. Trout is a registered professional engineer, holds a B. S. in Physics from Lafayette College and a Ph.D. from the University of Pennsylvania in Metallurgy and Materials Science. He is a member of the UK and IEEE Magnetics Societies.