



Symposium Summary

Phase Transformations and Deformation in Magnesium Alloys

Organizers: Jian-Feng Nie (Monash University, Australia), Sean Agnew (University of Virginia), and Suveen Mathaudhu (U.S. Army Research Office)

The second mini-symposium on the Deformation and Phase Transformations in Magnesium Alloys, co-sponsored by the Phase Transformations and Magnesium Committees, was a great success. This symposium had 18 presentations, with an average attendance of 65 at the two sessions held on March 13.

Like the first mini-symposium held in the TMS 2004 in Charlotte, NC, this event brought together a diverse community of researchers. The invitation-only list of speakers and planned publication of the proceedings papers in a special issue of *Metallurgical and Materials Transactions A* helped to attract a number of researchers who would not normally attend the Magnesium Technology Symposium series. In this way, the mini-symposium provided an excellent forum for “cross-pollination,” with strong representation of top researchers from the Pacific Rim countries, as well as Canada, the United States, and Europe.

It is suggested that the presentations offered by leading researchers at this symposium will provide a basis for future directions in research within the field. For example, Rainer Schmid-Fetzer from Technical University of Clausthal, Germany, gave a comprehensive summary on thermodynamic calculations of phase equilibria for a range of magnesium alloy systems and highlighted some opportunities for further work in that area. Kazuhiro Hono from Japan National Institute for Materials Science presented his latest research findings on 3D atom tomography of precipitates in magnesium alloys and effects of micro-alloying additions on precipitation in magnesium alloys. Joseph Robson from University of Manchester, UK, provided some elegant analysis of how precipitate shapes can influence the propagation of gliding dislocations and twins in magnesium. The presentations from Subhash Mahajan from University of California Davis, Kwang Seon Shin from Seoul National University, Korea, and Matthew Barnett from Deakin University in Australia outlined the current status in the understanding of various aspects of deformation twins in magnesium alloys. The presentations from Dallas Trinkle from University of Illinois Urbana-Champaign, and Yunzhi Wang from The Ohio State University represent fresh attempts in the applications of first-principles and phase-field methods to some challenging puzzles in magnesium alloys.

--Submitted by Sean Agnew