



FRG: Fundamental Approaches to the Design of New Mg Alloys

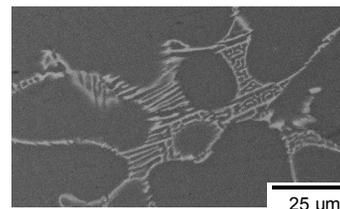
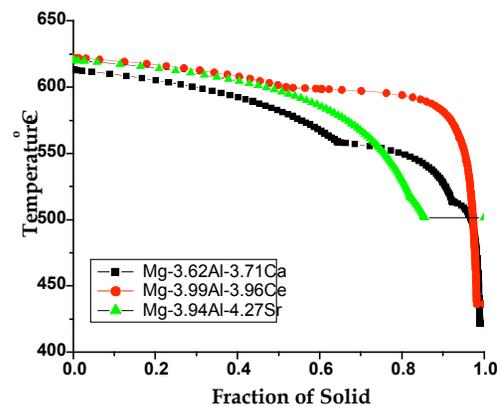


J.W. Jones & T.M. Pollock, University of Michigan
Y. A. Chang & S. Kou, University of Wisconsin
DMR Award #0309468

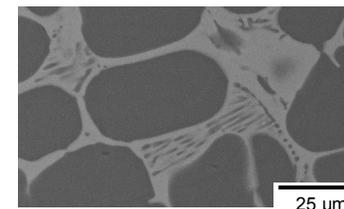
The overall objective of this program is to establish a strong fundamental basis for the design of future high temperature magnesium alloys for energy efficient automotive systems

The program is a collaborative effort between the University of Michigan and University of Wisconsin with significant collaboration with the Ford Motor Company and General Motors

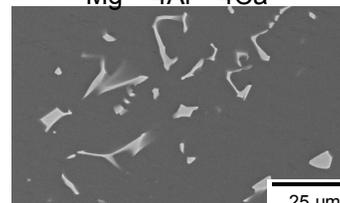
There is a strong focus on thermodynamic modeling for alloy design, solidification & casting and high temperature mechanical properties



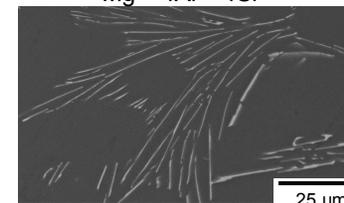
Mg - 4Al - 4Ca



Mg - 4Al - 4Sr



Mg - 4Al - 4Ce



Mg - 4Al - 4La



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Education (Year 1):

- 1 undergraduate, S. Wildy (Oxford Univ. / UM)
- 2 grad students, N. Saddock (UM), G. Cao (UW)
- 2 post-docs, A. Suzuki (UM), K. Wu (UW)

Outreach:

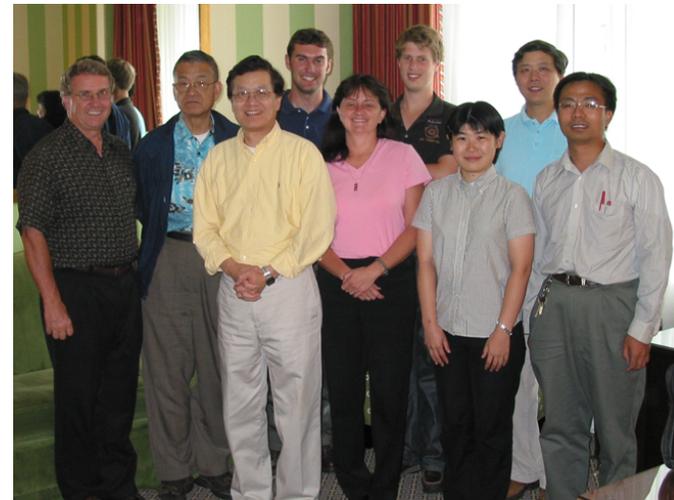
ASM International High School Teacher's Workshop - UM, Ann Arbor; July 12 - 16, 2004

Synergistic Activities:

- A new Mg permanent mold casting capability has been established at Ford in support of the program (shown at right)
- General Motors has fabricated experimental materials for the program
- 2 UM - UW joint group meetings have been held in Year 1 of the program



UM Student
(Saddock) at new
Mg casting facility at
Ford



UM-UW FRG Team at Joint Group Meeting, July 2004