ROBERT J. TICKLE
1236 Ashland Avenue
St. Paul, MN 55104

(612) 645-1103

EDUCATION: **Ph. D., Solid Mechanics, University of Minnesota, 2000**
B.S., Computer Science/Mathematics, St. John's University, 1989

EXPERIENCE: **Research Assistant,** Dept. of Aerospace Engineering and Mechanics, 10/92 to present:

Areas of concentration include magnetostrictive materials, shape-memory alloys, and novel magneto-memory materials. Research entails both theoretical material modeling and experimental design with an emphasis on experimental methods. Specific areas include:

- Custom specimen alloying and single crystal growth, quality determination, and orientation using using arc-melting furnace, Crystallox Bridgman induction furnace and Siemens Laue X-ray diffraction equipment.

- Specimen characterization equipment: Buehler mechanical/chemical polishing, Mettler differential scanning calorimetry, Nikon optical DIC/polarized microscopy, Siemens scanning electron microscopy with EDS, Digital Instruments atomic/magnetic force microscopy, custom resistivity vs. temperature apparatus, kappa bridge susceptibility measurement, vibrating sample magnetometry

- Custom designed and built magnetomechanical testing equipment

Magnetics Consultant, SciMed Corp., 1997-2000:

Provided consulting for improvements to induction heating systems and magnetic property characterization for biomedical materials

RECENT PUBLICATIONS:

R. Tickle and R. D. James, "Magnetic and Magnetomechanical Properties of Ni_2MnGa," *Journal of Magnetism and Magnetic Materials*, Vol. 195, p. 627, 1999.

R. Tickle, R. D. James, T. Shield, M. Wuttig, and V. V. Kokorin, "Ferromagnetic Shape Memory in the NiMnGa System", *IEEE Transactions on Magnetics*, Vol. 35, No. 5, p. 4301, 1999.

R. D. James, R. Tickle, and M. Wuttig, "Large Field-Induced Strains in Ferromagnetic Shape Memory Materials", *Materials Science and Engineering,* A273-295, p. 320, 1999.

J. Schmidt, R. Tickle, G. D. Skidmore, C. Merton, R. D. James, and E. Dan Dahlberg, "Microscopic stress-induced magnetization changes in a fracture (111) surface of Terfenol-D observed with magnetic force microscopy," *Journal of Magnetism and Magnetic Materials*, Vol. 190, p. 98, 1998.

SCIENTIFIC AND PROFESSIONAL SOCIETIES:

Member, Institute of Electrical and Electronic Engineers (IEEE)