

Joseph R. Gladden, III

Curriculum Vitae

Department of Physics & Astronomy
University of Mississippi
University, MS 38655

Work: (662) 915-7428
jgladden@olemiss.edu
www.phy.olemiss.edu/~jgladden/

Professional Preparation

University of the South, B.S. Physics, 1991

University of Montana, M.S. Physics, January 1994

Thesis title: *Thermal Desorption Spectroscopy Study of the Initial Oxidation of Si(111)*

Advisor: Enjiro Uchimoto

The Pennsylvania State University, Ph.D. Physics, August 2003

Thesis title: *Characterization of Thin Films and Novel Materials by Resonant Ultrasound Spectroscopy*

Advisor: Julian Maynard

The Pennsylvania State University, Postdoctoral Fellowship, Department of Mathematics, June 2005

Advisor: Andrew Belmonte

Appointments

Assistant Professor, University of Mississippi, Dept. of Physics and Astronomy, Oxford, MS (2005-Present)

Physics Instructor, The United World College, Montezuma, NM (1996-1999)

The United World College is an international school for gifted students representing approximately 70 countries with a network of 10 sister campuses located around the globe.

Physics and Computer Science Instructor, Virginia Episcopal School, Lynchburg, VA (1994-1996)

List of Publications

1. J. So, J.R. Gladden, J.D. Maynard, *Elastic constant measurements of thin films using small-sample resonant ultrasound spectroscopy*, Modern Physics Letters B (invited paper to be published)
2. R. Challa, D. Kajfez, V. Demir, J.R. Gladden, A.Z. Elsherbeni, *Characterization of Multiwall Carbon Nanotube Composites in a Waveguide of Square Cross Section*, IEEE Microwave and Wireless Components Letters, **18** (3), 161 (March 2008).
3. G. Li, G. Lamberton, J.R. Gladden, *Acoustic modes of finite length homogeneous and layered cylindrical shells: Single and multiwall carbon nanotubes*, Journal of Applied Physics **104**, 033524, (Aug 2008).
4. R. Challa, D. Kajfez, V. Demir, J.R. Gladden, A. Elsherbeni, *Permittivity Measurements with a Non-standard Waveguide by using TRL Calibration and Fractional Data Fitting*, IEEE Trans. on Instrumentation and Measurement, in press, (March 2007).
5. J. R. Gladden, A. Belmonte, *Motion of a Viscoelastic Micellar Fluid Around a Cylinder: Flow and Fracture*, Physical Review Letters **98** (22), 224501 (2007).
This paper was noted in the *Physics News of 2007* compiled by the APS.
6. J. R. Gladden, A. Belmonte, N. Z. Handzy, and E. Villiermaux, *Dynamic buckling and fragmentation in brittle rods*, Physical Review Letters, **94**(3) 035503 (2005).
7. J. R. Gladden, Jin H. So, J. D. Maynard, *Unique mechanical properties of carbon nanotube film-solid state interfaces*, submitted to Physical Review Letters.

8. J. R. Gladden, Jin H. So, J. D. Maynard, P. W. Saxe, and Y. Le Page, *Reconciliation of ab initio theory and experimental elastic properties of Al_2O_3* , Applied Physics Letters **85**, 392 (2004).
9. J. H. Kinney, J. R. Gladden, G. W. Marshall, S. J. Marshall, Jin H. So, and J. D. Maynard, *Resonant ultrasound spectroscopy measurements of the second order elastic constants of human dentin*, Journal of Biomechanics **37**, 437-441 (2004).
10. J. So, J. R. Gladden, Yufeng Hu, J. D. Maynard, and Q. Li, *Measurements of Elastic Constants in Thin Films of Colossal Magnetoresistance Material*, Physical Review Letters **90**, 036103 (2003).
11. G. D. Mahan, J. R. Gladden, J. D. Maynard, *Elastic oscillations of cylindrical fuses*, Journal of Applied Physics, **90**, 4415 (2001).

Reprints and preprints of each of the above publications can be obtained from my web site:
<http://www.phy.olemiss.edu/~jgladden/> or by request: jgladden@phy.olemiss.edu.

Presentations

Invited

- 156th Meeting of the Acoustical Society of America, November 2008,
Hot Topics in Physical Acoustics
- 156th Meeting of the Acoustical Society of America, November 2008,
Hardware and software solutions to noise in resonance measurements
- 156th Meeting of the Acoustical Society of America, November 2008
Education Committee Special Session: *Standing waves on a string and electromagnetic induction*
- 154th Meeting of the Acoustical Society of America, November 2007,
Resonant Ultrasound Spectroscopy in Heterogeneous Systems: Phase Transitions in Thin Films
- 153rd Meeting of the Acoustical Society of America, June 2007,
Visualizing Normal Modes of Vibration Using Birefringence
- Mid-South Area Engineering and Science Conference, May 2007,
Determination of Elastic Constants and Damping in Homogeneous and Heterogeneous Materials Using Resonant Ultrasound Spectroscopy
- Society of Industrial and Applied Mathematics, annual meeting July 2005,
Minisymposium on Gels: Flow and Fracture in Wormlike Micellar Gels
- University of Mississippi, Colloquium, March 2005
Decoding Deformations: Thin Film Resonant Ultrasound Spectroscopy and Dynamic Buckling of Thin Rods
- Rochester Institute of Technology, Colloquium, February 2005
Bending and Breaking: Dynamic Buckling and Fracture of Thin Rods
- United States Naval Academy, Colloquium, February 2005
Bending and Breaking: Dynamic Buckling and Fracture of Thin Rods
- Centre College, Colloquium, January 2005
Bending and Breaking: Dynamic Buckling and Fracture of Thin Rods
- University of Pittsburgh, Condensed Matter Group Seminar, December 2004
Breaking Things: Dynamic Buckling and Fracture of Thin Rods and Elastic Gels

Submitted

- American Physical Society March Meeting, New Orleans, LA, March 2008,
Acoustics of Highly Concentrated Wormlike Micellar Materials

- American Physical Society March Meeting, New Orleans, LA, March 2008,
High Temperature Elastic Constants using Resonant Ultrasound Spectroscopy
- Materials Research Society Conference, Boston, MA, December 2003,
Unique mechanical properties of carbon nanotube film-solid state interfaces
- First Pan-American/Iberian Meeting on Acoustics, Cancun, Mexico, December 2002,
Resonant Ultrasound Spectroscopy Applied to Misoriented Crystals of Low Symmetry: Corundum
- 143rd Meeting of the Acoustic Society of America, Pittsburgh, PA, July 2002,
Thin Film Characterization Using Resonant Ultrasound Spectroscopy

Grants

- *High Temperature Elastic Constants of Zintl Phase Thermoelectrics*, Jet Propulsion Laboratory, NASA, June 2008, \$28,195.
- *Elastic Constant Measurements in Novel Piezoelectric Materials*, U-COM Ten Corp., Sydney Australia, August 2007, \$6,500.
- *Electromagnetic and Elastic Properties of Chiral Materials*, Faculty Research Proposal, University of Mississippi, Oct. 2005, \$7,990.
- *Elasticity, Anisotropy, and Dissipation in Aligned Carbon Nanotube/Polymer Composites*, Oak Ridge National Lab - Center for Nanophase Materials Science Users Grant, July 2006 - July 2008.
- *Design and Fabrication of Extremely Rugged Acoustic Sensors using Carbon Nanotube / PVDF Composites*, Picatinny Center for Contracting and Commerce, U.S. Army, submitted July 2008, \$200,000. This is my contribution as a Co-PI to a larger (\$1.5 M) proposal from the NCPA.

Honors and Awards

- Our paper: *Motion of a Viscoelastic Micellar Fluid Around a Cylinder: Flow and Fracture* was listed in "Physics News of 2007" by the American Physical Society.
- "Emerging Leaders Conference" ~ Steering committee of promising recent alumni of the University of the South, Sewanee, TN (Fall 2005)
- Best Student Paper Award in Physical Acoustics, 2nd place ~ Summer 2002 Acoustical Society of America meeting
- Duncan Fellowship ~ support for promising doctoral students, Penn State University (1999-2001)
- Bradock Fellowship ~ support for promising doctoral students, Penn State University (1999-2000)
- Who's Who Among America's Teachers (1996)
- Tandy Technology Scholars Award for Education in Science (1995)
- Awarded a six month competitive research grant with NEC in Japan (1992)
- President of Sigma Pi Sigma ~ Sewanee Chapter (1990-91)
- William T. Allen Award in Physics ~ University of the South (1990)

Continuing Education and Committee Work

- **Graduate and Undergraduate Student Recruiting** (2006-present)
University of Mississippi, Department of Physics and Astronomy
- **Educational Technology Committee** (2007 - present), University of Mississippi
Guiding decisions and allocating funds for the implementation of academic technology.
- **Physical Acoustics Summer School** (2000)
An intensive week long summer school covering all major aspects of physical acoustics taught by internationally recognized experts in each topic.