Joseph R. Gladden, III

Curriculum Vitae

Department of Physics & Astronomy	Work: (662) 915-7428
University of Mississippi	jgladden@olemiss.edu
University, MS 38655	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

Associate Professor, University of Mississippi, Dept. of Physics and Astronomy, Oxford, MS (2011-present)

Assistant Professor, University of Mississippi, Dept. of Physics and Astronomy, Oxford, MS (2005-2011)

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 Epsicopal School, Lynchburg, VA (1994-1996)

List of Publications

1. J. R. Gladden, G. Li, R. Adebisi, S. Firdosy, T.Caillat, and V. Ravi, *Elastic Moduli of Lanthanum Telluride and Zintl Phase Thermoelectrics at Elevated Temperatures*, in preparation for J. Applied Physics.

2. R. Adebisi, D. Safarik, J.R. Gladden, *Strong softening of elastic moduli in palladium hydride systems near the tri-critical point*, in preparation for Acta Materiala.

3. J.R. Gladden, A.M. Gamble, C.E. Skelton, J. Mobley, *Shear waves in viscoelastic wormlike micellar fluids over a broad concentration range.*, J. Acoustical Society of America, submitted (Sept. 2011).

4. Q. Zhang, R. Adebisi, J.R. Gladden, *Synthesis procedures, mechanical and electrical properties of Poly(vinylidene fluoride) nanocomposite thin films containing multi-walled carbon nanotubes*, J. of Polymer Composites, submitted (Sept. 2011).

5. T. Cao, P. Sokol, J.R. Gladden, *Temperature and concentration dependent small angle neutron scattering in concentrated wormlike micellar materials*, submitted to Langmuir (July 2011).

6. G. Li and J.R. Gladden, *High Temperature Resonant Ultrasound Spectroscopy*, invited paper for Int. J. of Spectroscopy, 206362 [doi:10.1155/2010/206362] (Dec. 2011).

7. J.R. Gladden, C.E. Skelton, J. Mobley, *Shear waves in viscoelastic wormlike micellar fluids*, J. Acoustical Society of America - Express Letters, 128 (5) [DOI: 10.1121/1.3492794] (Sept. 2010).

8. J. R. Gladden, G. Li, R. Adebisi, S. Firdosy, T.Caillat, and V. Ravi, *High temperature elastic moduli of nanostructured n- and p-type silicon germanium.*, Phys. Rev. B **82**, 045209 (2010).

9. W. Wu, A. Al-Ostaz, J. Gladden, A.H.D. Cheng, G. Li, *Measurement of Mechanical Properties of Hydrated Cement Paste Using Resonant Ultrasound Spectroscopy*, J. ASTM International **7**(5), JAI102657 (2010).

10. Joel Mobley, Richard Mack, J. R. Gladden, P. Raju Mantena, *Determination of power-law attenuation coefficient and dispersion spectra in carbon nanotube composites using Kramers-Kronig relations.*, J. of the Acoustical Society of America **126**(1), 92-97 (2009).

11. J.R. Gladden, *The Archeology of Relic Sound Waves*, an invited popular version of a paper presented at 156^{th} meeting of the ASA and published through the AIP press office, (Nov. 2008).

12. 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).

13. 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).

14. 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*, Prog. in Electromagnetic Res. B, **2**, 1-13, (Feb. 2007).

15. 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.

16. J. R. Gladden, A. Belmonte, N. Z. Handzy, and E. Villermaux, *Dynamic buckling and fragmentation in brittle rods*, Physical Review Letters, **94**(3) 035503 (2005).

17. J. R. Gladden, Jin H. So, J. D. Maynard, *Unique mechanical properties of carbon nanotube film-solid state interfaces*, submitted to Physical Review Letters.

18. 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).

19. 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).

20. 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).

21. 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

1. 162^{th} Meeting of the Acoustical Society of America, November 2011, San Diego, CA
Resonant Ultrasound Spectroscopy at high temperatures and pressures: palladium hydride near the try-critical point.

2. 161^{st} Meeting of the Acoustical Society of America, May 2011, Seattle, WA
Broadband versus narrowband experimental methods in acoustics

3. 2^{nd} Pan-American Meeting on Acoustics, November 2010, Cancun, Mexico
   (a) *Shear wave speed measurements in viscoelastic wormlike micellar fluids*
   (b) *Impulse Excitation of the Singing Rod*
   (c) *Measurement schemes for RUS experiments at high temperatures*
4. 158^{th} Meeting of the Acoustical Society of America, November 2009,
   Drumhead resonances in circular elastic membranes
5. Colloquium: Indiana University, Dept. of Physics, Oct. 7, 2009,
   Mechanical Dynamics in Highly Viscoelastic Structured Semisolids
6. 2009 International Congress on Ultrasonics, Santiago, Chile, January 2009,
   Resonant ultrasound spectroscopy methods at elevated temperatures
7. 156^{th} Meeting of the Acoustical Society of America, Miami, FL, November 2008,
   Hot Topics in Physical Acoustics -
8. 156^{th} Meeting of the Acoustical Society of America, Miami, FL, November 2008,
   Hardware and software solutions to noise in resonance measurements
9. 156^{th} Meeting of the Acoustical Society of America, Miami, FL, November 2008
   Education Committee Special Session: *Standing waves on a string and electromagnetic induction*
10. 154^{th} Meeting of the Acoustical Society of America, New Orleans, LA, November 2007,
    Resonant Ultrasound Spectroscopy in Heterogeneous Systems: Phase Trasitions in Thin Films
11. 153^{rd} Meeting of the Acoustical Society of America, Salt Lake City, UT, June 2007,
    Visualizing Normal Modes of Vibration Using Birefringence
12. Mid-South Area Engineering and Science Conference, May 2007,
    Determination of Elastic Constants and Damping in Homogeneous and Heterogeneous Materials Using Resonant Ultrasound Spectroscopy
13. Society of Industrial and Applied Mathematics, annual meeting July 2005,
    Minisymposium on Gels: *Flow and Fracture in Wormlike Micellar Gels*
14. University of Mississippi, Colloquium, March 2005
    Decoding Deformations: Thin Film Resonant Ultrasound Spectroscopy and Dynamic Buckling of Thin Rods
15. Rochester Institute of Technology, Colloquium, February 2005
    Bending and Breaking: Dynamic Buckling and Fracture of Thin Rods
16. United States Naval Academy, Colloquium, February 2005
    Bending and Breaking: Dynamic Buckling and Fracture of Thin Rods
17. Centre College, Colloquium, January 2005
    Bending and Breaking: Dynamic Buckling and Fracture of Thin Rods
18. University of Pittsburgh, Condensed Matter Group Seminar, December 2004
    Breaking Things: Dynamic Buckling and Fracture of Thin Rods and Elastic Gels

Submitted

1. American Physical Society March Meeting, New Orleans, LA, March 2008,
   Acoustics of Highly Concentrated Wormlike Micellar Materials
2. American Physical Society March Meeting, New Orleans, LA, March 2008,
   High Temperature Elastic Constants using Resonant Ultrasound Spectroscopy

3. Materials Research Society Conference, Boston, MA, December 2003,
   Unique mechanical properties of carbon nanotube film-solid state interfaces

4. First Pan-American/Iberian Meeting on Acoustics, Cancun, Mexico, December 2002,
   Resonant Ultrasound Spectroscopy Applied to Misoriented Crystals of Low Symmetry: Corundum

Grants

- *Acoustic Characterization of Inherently Conductive Polymers*, Crosslink Corporation, March 2011 - Nov. 2012, $271,000
- *Resonant Ultrasound Spectroscopy study of Elastic Moduli of Novel Ceramic Materials*, Delphi Corporation, July 2010, $10,650
- *Elastic Moduli and Grain Size Dynamics of SnAgCu Alloys*, Cisco Systems, June 2010, $35,000
- *High Temperature Elastic Constants of Lead Telluride Thermoelectrics*, Jet Propulsion Laboratory, NASA, June 2010, $27,071
- *Design and Fabrication of Extremely Rugged and Flexible Acoustic Sensors using Carbon Nanotube / PVDF Composites*, Picatinny Center for Contracting and Commerce, U.S. Army, October 2009 - October 2011, $93,316 for 2009 + $95,283 for 2010
- *Elastic Constants of Palladium Hydrides Near the Tri-Critical Point*, Los Alamos National Lab, DOE, April 2009, $33,000.
- *High Temperature Elastic Constants of Lanthanum Telluride Thermoelectrics*, Jet Propulsion Laboratory, NASA, April 2009, $13,000.
- *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., Syndey 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.

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" $\sim$ Steering committee of promising recent alumni of the University of the South, Sewanee, TN (Fall 2005)
- Best Student Paper Award in Physical Acoustics, 2^{nd} place $\sim$ Summer 2002 Acoustical Society of America meeting
- Duncan Fellowship $\sim$ support for promising doctoral students, Penn State University (1999-2001)
- Bradock Fellowship $\sim$ support for promising doctoral students, Penn State University (1999-2000)
- Tandy Technology Scholars Award for Education in Science (1995)
- William T. Allen Award in Physics $\sim$ University of the South (1990)

Continuing Education and Committee Work

- **Graduate and Undergraduate Student Recruiting and Admissions** (2006-present)
  University of Mississippi, Department of Physics and Astronomy
- **Tenure Track and Visitor Hiring Committees** (2007-2010)
  University of Mississippi, Department of Physics and Astronomy
- **Head Residential College Faculty Fellow Hiring Committee** (2009)
  University of Mississippi
- **Educational Technology Committee** (2007 - present), University of Mississippi
  Guiding decisions and allocating funds for the implementation of academic technology.
- **Physical Acoustics Summer School** (2000, 2010, & 2012 (Director))
  An intensive week long summer school covering all major aspects of physical acoustics taught by internationally recognized experts. I was a student in 200 and invited back as a Discussion Leader in 2010. I have been asked to be the Director of PASS for 2012.