Selected Publications

- Refereed Journal Articles
- Book Chapters
- Published Proceedings
- First Author Presentations

Refereed Journal Articles

B. D. Huey, R. Langford, "Low-dose focused ion beam nanofabrication and characterization by atomic force microscopy," Nanotechnology, **14**, 2003, p. 409-412.

A. P. McGuigan, B. D. Huey, G. A. D. Briggs, O. V. Kolosov, Y. Tsukahara, Y. Yanaka, "Measurement of Debonding in Cracked Nanocomposite Films by Ultrasonic Force Microscopy," Applied Physics Letters, **80** (7), 2002, p. 1180-82.

B. D. Huey, D. Bonnell, "Spatially Localized Dynamic Properties Of Individual Interfaces In Semiconducting Oxides," Applied Physics Letters, **76** (8), 2000, p. 1012.

B. D. Huey, D. Bonnell, "Nanoscale Variation in Electric Potential at Oxide Bicrystal and Polycrystal Interfaces," Solid State Ionics, **131** (1-2) 1999, p. 51-60.

B. D. Huey, D. Lisjak, D. Bonnell, "Nanometer Scale Variations in Interface Potential by Scanning Probe Microscopy," Journal of the American Ceramic Society, **82** (7), 1999, p. 1941-44.

F. Kral, D. Perednis, B. D. Huey, D. Bonnell, G. Kostorz, L. Gauckler, "Imaging Current Distributions in Polycrystalline Bi2Sr2CaCu2Ox Superconductors by Magnetic Force Microscopy," Advanced Materials, **10** (17), 1998.

R. Penna, F. Mante, B. D. Huey, J. Ghafari, "Comparison of Surface Treated Orthodontic Bands: Evaluation of Shear Force and Surface Roughness," American Orthodontics and Dentofacial Orthopedics, **114** (2), p. 162-5, 1998.

A. Gorbunov, W. Pompe, H. Eichler, B. D. Huey, and D. Bonnell, "Nanostructuring of Laser-Deposited Ti Films by Self-Limited Oxidation," Journal of the American Ceramic Society, **80** (7), p. 1663-7, 1997.

A. Gorbunov, H. Eichler, W. Pompe, and B. D. Huey, "Lateral Self-Limitation in the Laser-Induced Oxidation of Ultrathin Metal Films," Applied Physics Letters, **69**, p. 2816-8, 1996.

D.Bonnell, B.Huey, D.Carroll, "In-Situ Measurement of Electric Fields at Individual Grain Boundaries in TiO2," Solid State Ionics, **75**, p. 35-42, 1995.

Book Chapters

B. D. Huey, "Nanometer Scale Measurement and Control of Ferroelectric Polarization at MHZ Frequencies" in Nanoscale Phenomena in Ferroelectric Thin Films, S. Hong, submitted, January, 2003.

D. Bonnell, B. D. Huey, "Basic Principles of Scanning Probe Microscopy" in Scanning Probe Microscopy and Spectroscopy: Theory, Techniques, and Applications, 2nd edition, 2001, ed. D. Bonnell.

Published Proceedings

B. D. Huey, "Ultrasonic Force Microscopy: Nanometer Scale Mechanical Contrast," 26th International Acoustic Imaging Symposium proceedings, Windsor, Canada, 2001.

B. D. Huey, R. M. Langford, G. A. D. Briggs, O. V. Kolosov, "Characterisation of the nm-scale Mechanical Compliance of Semiconductors by UFM," Microscopy of Semiconductor Materials XII proceedings, Oxford, 2001.

R. M. Langford, D. Ozkaya, B. D. Huey, A. K. Petford-Long, "Broad ion beam milling of focused ion beam prepared transmission electron microscopy cross-section specimens for high resolution electron microscopy," Microscopy of Semiconducting Materials XII proceedings, Oxford, 2001.

B. D. Huey, D. Bonnell, A. Akhsakhalian, A. Gorbunov, A. Sewing, W. Pompe, "Laser Induced Nanofabrication on Titanium Thin Films," Advanced laser processing of materials, M R S Proceedings, Symposium C, p. 625-30, 1995.

B. D. Huey, D. Bonnell, D. Carroll, "Observation and Characterization of Electric Fields at Grain Boundaries," Structure and Properties of Interfaces in Ceramics, MRS Proceedings, 357, p. 401-406, 1994.

First Author Presentations

B. D. Huey, J. Blendell, G. White, C. Ramanujan, M. Bobji, A. Kulik, "The influence of distributed loading and cantilever angle in Piezo-Force Microscopy," ICE, Boston, Massachusetts, 2003.

B. D. Huey, J. Blendell, M. Bobji, C. Ramanugan, A. Briggs, O. Kolosov, R. Szoszkiewicz, A. Kulik, "The importance of considering cantilever angle in interpreting piezo-force microscopy results," ACERS, Nashville, 2003.

B. D. Huey, G.A.D. Briggs, O.V. Kolosov, R. Szoszkiewicz, A. Kulik, "UFM: nm-scale mechanical contrast with SPM," **Invited**, Workshop on Nano-Metrology of Materials, NIST, 2003.

B. D. Huey, "Scanning Probe Microscopy: nanoscale detection, mapping, and modification of materials properties," **Invited**, lecture series as part of K.V. Rao's Nanostructured Materials course, Royal Institute of Technology, Stockholm, Sweden, 2002.

B. D. Huey, "Atomic Force Microscopy: nanoscale detection, mapping, and modification of materials properties," **Invited**, lecture as part of King's College Science of Microscopy seminars, Windsor, UK, 2002.

B. D. Huey, G.A.D. Briggs, O.V. Kolosov, "Heterodyne Ultrasonic and Electrostatic Force Microscopy," MRS, Boston, 2001.

B. D. Huey, O.V. Kolosov, G.A.D. Briggs, R. Szoszkiewicz, A. Kulik, "Inteferometric Characterization Of Cantilever Vibrations Resulting From Ultrasonic (Mhz) Excitations," Poster, MRS, Boston, 2001.

B. D. Huey, "Ultrasonic Force Microscopy: Nanometer Scale Mechanical Contrast," **Invited**, International Acoustic Imaging Symposium, Windsor, Canada, 2001.

B. D. Huey, R. Langford, A. Petford-Long, A. Briggs, O. Kolosov, "Focused Ion Beam Induced Local Damage Characterized by Scanning Probe Microscopy," ACERS, Indianapolis, 2001.

B. D. Huey, R. Langford, A. Briggs, O. Kolosov, "Ultrasonic Force Microscopy: Simulations and Experiments," Poster, UK SPM, Leeds, 2001.

B. D. Huey, R. Langford, A. Briggs, O. Kolosov, "Characterization of the nm-scale mechanical compliance of Semiconductors by UFM," Microscopy of Semiconductors XII, Oxford, 2001.

B. D. Huey, A. Briggs, O. Kolosov, "Nanometer-scale Mechanical Properties of SiGe thin films using Ultrasonic Force Microscopy," Poster, M R S, Spring 2000.

B. D. Huey, O. Kolosov, A. Briggs, "Ultrasonic Force Microscopy, Nanometer Scale Mechanical Contrast," **Invited**, Thermomicroscopes-Europe users meeting, 1999.

B. D. Huey, D. Bonnell, "In-Situ Probes of Interface Potentials and Local Electric Fields in Relation to Macroscopic Properties in Oxides," **Invited**, Gordon Research Conference-Solid State Studies in Ceramics, 1999.

B. D. Huey, D. Bonnell, "Electronic Properties of Individual Grain Boundaries in SrTiO3 and ZnO Bicrystals and Polycrystals," M R S, Fall 1998; **MRS student Gold Medal winner**, best student paper.

B. D. Huey, D. Bonnell, "Nanoscale variations of Surface Potentials at Interfaces," American Vacuum Society, 1998; best student paper finalist, Nanoscale Science and

Technology.

B. D. Huey, D. Bonnell, "Direct Observation of Electronic Properties of Individual Grain Boundaries," American Ceramic Society, 1998.

B. D. Huey, D. Bonnell, "SSPM of Individual ZnO Grain Boundary Potential Barrier," Poster, American Ceramic Society, 1998; probe microscopy poster prize winner.

B. D. Huey, D. Bonnell, "Electronic Properties of Individual ZnO Grain Boundaries," Scanning, 1998; **graduate student award winner**.

B. D. Huey, D. Bonnell, "Electronic Properties of Individual Grain Boundaries in ZnO Varistors, Poster, Gordon Research Conference-Solid State Studies in Ceramics, 1997.

B. D. Huey, D. Bonnell, A. Akhsakhalian, A. Gorbunov, A. Sewing, W. Pompe, "Laser Induced Nanofabrication on Titanium Thin Films," Poster, M R S, Fall 1995.

B. D. Huey, D. Bonnell, D. Carroll, "Observation and Characterization of Electric Fields at Grain Boundaries," M R S, Fall 1994; best student paper finalist.