THAO D. NGUYEN

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EDUCATION

1998-2004 Stanford University, Stanford, CA.
Ph.D. in Mechanical Engineering, June 2004.
M.S. in Mechanical Engineering, January 2000.

1994-1998 Massachusetts Institute of Technology, Cambridge, MA.
S.B. in Mechanical Engineering, June 1998.

PROFESSIONAL APPOINTMENTS

10/2007 – Present Johns Hopkins University, Dept. of Mechanical Engineering., Baltimore, MD.
Assistant Professor

7/2004 – 9/2007 Sandia National Laboratories, Mechanics of Materials Dept., Livermore, CA.
Senior Member of the Technical Staff

9/1998 – 6/2004 Stanford University, Division of Mechanics and Computation, Stanford, CA.
Graduate Research Assistant

3/2002 – 6/2002 Max Planck Institute for Metals Research, Stuttgart, Germany.
Visiting Scholar

GRANTS

- 05/2008-Present Micro-scale experiments for characterizing constituent TBC properties, Co-PI, ONR IO#90033635, $110K/year
- 04/2008-Present Investigating the Molecular Mechanisms of Amorphous Shape Memory Polymers, PI, NSF # 0758390, $249K/year
- 10/2007-Present Novel Active Polymers for Light and Temperature Detection, PI, Sandia Contract PO# 754821, $40K/year
- 10/2007-Present Modeling nanoindentation of compliant elastic and viscoelastic substrate systems, PI, Sandia Contract PO# 754814, $30K/year

FELLOWSHIPS

- 1998-2001 National Science Foundation Graduate Fellowship.
- 1998 DOD National Defense Science and Engineering Graduate Fellowship (declined).

PROFESSIONAL SOCIETY

- 2008-Present Solid MechanicsTechnical Committee Member, ASM Bioengineering Division
- 2007-Present Symposium Organizer, Society of Engineering Science

- 2005-2007 Recording Secretary for the ASME Applied Mechanics Div. Executive Committee.

PUBLICATIONS

Boyce, B. L., J. M. Grazier, Jones, R. E., Nguyen T. D. (2008) "Full-Field Deformation of Bovine Cornea Under Constrained Inflation Conditions", *Biomaterials*, in press, doi:10.1016/j.biomaterials.2008.06.011.

Nguyen, T. D., Qi, H. J., Castro, F., Long, K., (2008) "A Thermoviscoelastic Model for Armorphous Shape Memory Polymers: Incorporating Structural and Stress Relaxation", *Journal of Physics and Mechanics of Solids*, in press, doi:10.1016/j.jmps.2008.04.007.

Qi, H. J., Nguyen, T. D., Castro, F., Yakacki, C., Shandas, R., (2008) "Finite Deformation Thermo-Mechanical Behavior of Thermally Induced Shape Memory Polymers", *Journal of Mechanics and Physics of Solids*, **56**, pp. 1730-1751.

Nguyen T. D., Boyce, B. L., Jones, R.E. (2008) "A Nonlinear Viscoelastic Model for the Tensile Behavior of Bovine Cornea", *Journal of Biomechanical Engineering*, **130** 041020-1.

Nguyen T. D., Jones, R.E. Boyce, B. L., (2007) "Modeling the anisotropic finite-deformation viscoelastic behavior of soft fiber-reinforced composites," *International Journal of Solids and Structures*, **44**, pp. 8366-8389.

Boyce, B. L., Jones, R. E., Nguyen T. D. (2007) "Nonlinear Viscoelastic Tensile Behavior of Bovine Cornea", *Journal of Biomechanics*. **40**, pp. 2367-2376.

Nguyen, T.D. and Govindjee, S. (2006) "Numerical Study of Geometric Constraint and Cohesive Parameters in Steady-State Viscoelastic Crack Growth," *International Journal of Fracture*, **141**, p.255–268.

Nguyen, T. D., Govindjee, S., Klein, P. A., Gao, H. (2005) "A Material Force Method for Inelastic Fracture Mechanics," *Journal of the Mechanics and Physics of Solids*, **53**, p.91–121.

Nguyen, T.D., Govindjee, S., Klein, P. A., Gao, H. (2004) "Application of the Material Force Method to Ductile Fracture", Multiscaling in Applied Science and Emerging Technology, Fundamentals and Applications in Mesomechanics: Proceedings of the Sixth International Conference for Mesomechanics, p.522–529.

Nguyen, T. D., Govindjee, S., Klein, P. A., Gao, H. (2004) "A Rate-Dependent Cohesive Continuum Model for the Study of Crack Dynamics," *Computer Methods in Applied Mechanics and Engineering*, **193**, p.3239–3265.

Zywicz, E, O'Brien, M. J., Nguyen, T. (2003) "On the elastic-plastic response of a large-tow triaxially braided composite," *Journal of Thermoplastic Composite Materials*, **16**, p.183–191.

Zywicz, E. and Nguyen, T. (2000) "On the flexural and extensional behavior of a large-tow triaxial braided composite," *Composites Science and Technology*, **60**, p.2989–2999.

TECHNICAL REPORTS

Nguyen, T. D., Holdych, D. J., Klein, P. A., in 't Veld, P. J., Stevens, M. J. (2006) "Modeling the Coupled Mechanics, Transport, and Growth Processes in Collagen Tissues" SAND2006-6462,Sandia National Laboratories, Albuquerque, NM.

Boyce, B. L. Grazier J. M. Jones R. E., and Nguyen, T. D., (2008) "The mechanics of soft biological composites" SAND2007-6191, Sandia National Laboratories, Albuquerque, NM.

INVITED PRESENTATIONS

Nguyen, T.D. "Modeling the Indentation of Stiff Film - Compliant Substrate Systems: Effects of Geometry and Film and Substrate Elasticity", Workshop on Macroelectronics, San Francisco, CA, March 23, 2008.

Nguyen, T.D. "Investigating the Mechanical Behavior of the Cornea", Department of Mechanical Engineering, Brown University, March 17, 2008.

Nguyen, T.D. "A Thermoviscoelastic Model for Shape Memory Polymers", Dept. of Materials Science, Johns Hopkins University,February 27, 2008.

Nguyen, T.D. "Investigating the Mechanical Behavior of the Cornea", Dept. of Civil Engineering, Johns Hopkins University, November 27, 2008.

Nguyen, T. D., Jones, R. E., Boyce, B. L, Grazier, J. M., McLeod S., "Characterization and Modeling the Mechanical Behavior of Bovine Cornea," keynote presentation at the 43rd Technical Meeting of the Society of Engineering Sciences in State College, Pennsylvania, August 13, 2006.

Nguyen, T. D., Jones, R. E., Boyce, B. L, Grazier, J. M., Regueiro, R., Nalla, R. K., "The Nonlinear Viscoelastic Tensile Behavior of Bovine Cornea," Dept. and Mechanical Engineering, University of Colorado, Boulder, Feb. 9, 2005.

CONFERENCE PRESENTATIONS

Nguyen T.D. "Modeling the Anisotropic Behavior of the Cornea ", World Congress in Computational Mechanics, Venice, Italy, July 2, 2008

Nguyen T.D. "Modeling the Anisotropic Behavior of the Cornea ", Summer Bioengineering Conference, Marco Island, FL, June 28, 2008

Nguyen T.D. "An Anisotropic Nonlinear Viscoelastic Framework for Modeling Tensile Behavior of Soft Fiber-Reinforced Tissues ", IUTAM Symposium on Cellular, Molecular and Tissue Mechanics Woods Hole, MA, June 18, 2008

Nguyen, T.D. "A Thermoviscoelastic Model for Shape Memory Polymers", Mechanics of Time-Dependent Materials, Monterey, CA , April 4, 2008.

Nguyen T.D. "An Anisotropic Nonlinear Viscoelastic Model for Soft Fiber-Reinforced Composites", Mechanics of Time-Dependent Materials Conference, April 3, 2008.

Nguyen, T.D. "Modeling the Indentation of Stiff Film - Compliant Substrate Systems: Effects of Geometry and Film and Substrate Elasticity", MRS Spring Meeting, San Francisco, CA, March 24, 2008.

Nguyen T.D. "An Anisotropic Nonlinear Viscoelastic Model for Soft Fiber-Reinforced Tissues", MRS Spring Meeting, San Francisco, California, March 25, 2008.

Nguyen T.D. "An Anisotropic Nonlinear Viscoelastic Model for Soft Fiber-Reinforced Tissues", 9th US National Congress on Computational Mechanics, San Francisco, California, July 26, 2007.

Nguyen T.D. "An Anisotropic Nonlinear Viscoelastic Model for Soft Fiber-Reinforced Tissues", Summer Bioengineering Conference, Keystone, Colorado, June 23, 2007.

Nguyen T.D. “An Anisotropic Nonlinear Viscoelastic Model for Soft Fiber-Reinforced Tissues”, ASME Applied Mechanics and Materials Conference, Austin, Texas, June 5, 2007.

Nguyen, T. D., Jones, R. E., Boyce, B. L, Grazier, J. M., McLeod S., “Characterization and Modeling the Mechanical Behavior of Bovine Cornea,” US Army Solid Mechanics Symposium. Baltimore, MD, April 5, 2007.

Nguyen, T. D., Holdych, D. J., Klein, P. A., Noble, D. (2006) “Modeling Nutrient Transport Coupled with Mechanics in Collagen,” a symposium presentation at the World Congress on Computational Mechanics in Los Angeles, California, July 18, 2006.

Holdych, D. J., Nguyen, T. D., Klein, P. A., Noble, D. (2006) “Modeling Nutrient Transport Coupled with Mechanics in Collagen,” a symposium presentation at the US National Congress on Theoretical and Applied Mechanics in Boulder, Colorado, June 28, 2006.

Nguyen, T. D., Jones, R. E., Boyce, B. L, Grazier, J. M., McLeod S., “A Nonlinear Viscoelastic Model for the Tensile Behavior of Bovine Cornea,” a symposium presentation at the Summer Bioengineering Conference in Amelia Island, Florida, June 25, 2006.

Nguyen, T.D. and Govindjee, S. “Effects of geometric constraint and cohesive parameters on viscoelastic crack growth,” a symposium presentation at the 29th Annual Meeting of the Adhesion Society in Jacksonville, Florida, February 21, 2006.

Nguyen, T.D. and Govindjee, S. “Steady-State Cohesive Crack Growth in Thin Viscoelastic Strips,” a symposium presentation at the ASME International Mechanical Engineering Congress and Exposition in Orlando, Florida, November 9, 2005.

Nguyen, T.D. and Govindjee, S. “Steady-State Cohesive Crack Growth in Thin Viscoelastic Strips,” a symposium presentation at the US National Congress on Computational Mechanics in Austin, Texas, July 27, 2005.

Nguyen, T.D. and Govindjee, S. “Steady-State Cohesive Crack Growth in Thin Viscoelastic Strips,” a symposium presentation at the International Conference on Fracture in Torino, Italy, March 24, 2005.

Nguyen, T. D., Govindjee, S., Klein, P. A., Gao, H., “A Material Force Method for Inelastic Fracture Mechanics,” a symposium presentation at the Seventh U.S. National Conference on Computational Mechanics in Albuquerque, New Mexico, July 30, 2003.

Nguyen, T. D., Govindjee, S., Klein, P. A., Gao, H., “A Rate-Dependent Cohesive Continuum Model for the Study of Crack Dynamics,” a poster presentation at the Ringberg Workshop on Dynamic Fracture in Ringberg, Germany, July 17, 2003.

Nguyen, T. D., Govindjee, S., Klein, P. A., Gao, H., “A Rate-Dependent Cohesive Continuum Model for the Study of Crack Dynamics,” a symposium presentation at the ASME Mechanics and Materials Conference in Scottsdale, Arizona, June 20, 2003.