

# Materials and Nanotechnology

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## Department Information

- **Program Director:**  
Erik K. Hobbie, Ph.D.
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[www.ndsu.edu/materials\\_nanotechnology/](http://www.ndsu.edu/materials_nanotechnology/) ([http://www.ndsu.edu/materials\\_nanotechnology/](http://www.ndsu.edu/materials_nanotechnology/))
- **Application Deadline:**  
April 1 for fall semester.
- **Credential Offered:**  
Ph.D., M.S.
- **Test Requirement:**  
GRE
- **English Proficiency Requirements:**  
TOEFL iBT 71, IELTS 6; Duolingo 100

## Affiliated Faculty

### **Iskander Akhatov, Ph.D.**

Lomonosov University of Moscow, 1983

Research Interests: Fluid Dynamics, Multiphase Systems, Heat and Mass Transfer

### **Dilpreet Bajwa, Ph.D.**

University of Illinois, 2000

Research Interests: Biobased Polymer Composites, Wood Composites, Processing and Characterization, Recycled Materials Utilization, Durability Engineering via Weathering and Degradation Mechanisms

### **Achintya N. Bezbaruah , Ph.D.**

University of Nebraska-Lincoln, 2002

Research Interests: Environmental sensors, Recalcitrant and micro pollutants, Contaminant fate and transport, Small community water and wastewater treatment, Environmental management

### **Gordon P. Bierwagen, Ph.D.**

Iowa State University, 1968

Research Interests: Surface chemistry of coatings materials, corrosion, electrochemistry of coatings, coating lifetime prediction, concentrated random composites

### **Bret Chisholm, Ph.D.**

University of Southern Mississippi, 1993

Research Interests: Combinatorial chemistry methods for coatings, novel organic-inorganic coatings applications, new polyester nanocomposites

### **Dr. Yongki Choi, PhD**

City University of New York, 2010

Research Interests: Nanoparticle based electronics and sensors.

### **Andrew Croll, Ph.D.**

McMaster University, Ontario, 2009

Research Interests: Polymers, Diblock Copolymers, Thin Films, Pattern Formation, Mechanics

### **Stuart G. Croll, Ph.D.**

University of Leeds, 1974

Postdoctoral: National Research Council, Canada

Research Interests: Weathering durability of coatings, physical chemistry and suspension stability, pigment/polymer interactions, film formation processes, coating and polymer physics

### **Alan R. Denton, Ph.D.**

Cornell University, 1991

Postdoctoral, University of Guelph, 1991-94; Technical University of Vienna, 1994-95, Research Center Julich, 1996-98

Research Interests: Soft Condensed Matter Theory, Computational Physic

**Daniel L. Ewert, Ph.D.**

University of North Dakota, 1989

Research Interests: Biomedical Engineering

**Thomas Ihle, Ph.D.**

Technical University, 1996

Research Interests: Theory and Simulation of Complex Fluids (Colloids, miroemulsions and Biopolymers).

**Long Jiang, Ph.D.**

Nanyang Technological University, 2003

Research Interests: Polymer and Polymer Composite Processing, Polymer Processing Machinery and Design, Nanocomposites, Polymers and Composites Derived from Biomass, Functional Composites with Novel Microstructures.

**Alan R. Kallmeyer, Ph.D.**

University of Iowa, 1995

Research Interests: Theoretical, Computational, and Experimental Solid Mechanics, Fatigue and Fracture of Engineering Materials, Composite Materials

**Dinesh Katti, Ph.D.**

University of Arizona, 1991

Research Interests: Geotechnical Engineering, Constitutive Modeling of Geologic Materials, Expansive Soils, Multiscale Modeling, Steered Molecular Dynamics, Computational Mechanics, Nanocomposite, and Bionanocomposites. Computational Biophysics

**Kalpana Katti, Ph.D.**

University of Washington, 1996

Research Interests: Advanced Composites, Nanomaterials, Biomaterials, Biomimetics, Materials Characterization and Modeling, Analytical Electron Microscopy, and Microspectroscopy, Bone Tissue engineering

**Svetlana Kilina, Ph.D.**

University of Washington, Seattle, 2007

Research Interests: Photoexcitation process on the organic-inorganic interfaces in hybrid nanostructures: functionalized carbon nanotubes and quantum dots; Non-adiabatic dynamics in hybrid nanostructures: electron-phonon interactions in ligated quantum dots and functionalized carbon nanotubes; Self-assembly of bio-nanomaterials: structural aspects; Transport properties in amorphous conjugated polymers: effect of structural disorder.

**Ivan T. Lima Jr., Ph.D.**

University of Maryland, 2003

Research Interests: Photonics

**Valery R. Marinov, Ph.D.**

Technical University of Sofia, 1992

Research Interests: Process Modeling for Machining, Theory of Metal Cutting, Tribological Coatings, Including Nanocomposite Coatings and Deposition Methods, Design for Composites Manufacturing Processes, Packaging for low-cost disposable microelectronics, Direct-write material deposition methods, Laser processing

**Sylvio May, Ph.D.**

Jena, 1996

Research Interests: Physics of Lipid Membranes, Biophysics

**Seth C. Rasmussen, Ph.D.**

Clemson University, 1994

Postdoctoral, University of Oregon, 1995-99

Research Area: Inorganic/Organic Materials Chemistry, Chemical History

**Jing Shi, Ph.D.,**

Purdue University, 2004

Research Interests: Microelectronics

Packaging, Direct Write Material Depositing, Laser Processing for Electronics, RFID Applications, Numerical Modeling of Manufacturing Processes, Computer Integrated Manufacturing

**Wenfang Sung, Ph.D.**

Chinese Academy of Sciences, 1995;  
Postdoctoral, University of Alabama, Birmingham, 1997-1999  
Research Area: Organic Materials Chemistry

**Chad A. Ulven, Ph.D.**

University of Alabama at Birmingham, 2005  
Research Interests: Advanced Composites Materials Development, Environmentally Friendly Materials Processing, Nondestructive Evaluation, Impact/  
High Strain Rate Characterization of  
Advanced Materials

**Alexander J. Wagner, Ph.D.**

University of Oxford, 1997  
Postdoctoral MIT, 1998-2000, Edinburgh, 2000-2002  
Research Interests: Computational Soft Matter, Phase Separation, Diffusion, Interfaces Physics

**Xinnan Wang, Ph.D.**

University of South Carolina, 2008  
Research Interests: Experimental Biomechanics, Synthesis of Nanomaterials, Nanomechanical Characterization, Nanomanipulation

**Dean Webster, Ph.D.**

Virginia Polytechnic Institute and State University 1984  
Research Interests: Synthesis of high performance polymers, polymerization reactions, crosslinking chemistry, and quantitative structure-property  
relationship

**Xiangfa Wu, Ph.D.**

University of Nebraska-Lincoln, 2003  
Beijing Institute of Technology, 1998  
Research Interests: Nanofabrication and Nanomaterials, Advanced Composites, Fracture and Impact Mechanics