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❖ Education

Feb. 1992 – Jan. 1997 Ph.D., Materials Science, University of Delaware.
Dissertation: Interface Characterization of an SCS-6/Ti-22Al-23Nb Composite
Advisor: Prof. Ian W. Hall

Sept. 1984 – Aug. 1987 M.Eng., Metallic Materials and Heat Treatments, China Academy of Railway Sciences, Beijing, China.
Thesis: Plasma Boronizing of Steel
Advisor: Prof. Yang Deng

Feb. 1978 – Jan. 1982 B.Eng., Metallic Materials and Heat Treatments, Zhenjiang Institute of Agricultural Machinery (currently Jiangsu University), Jiangsu, China
Senior thesis: Gas Carbonitriding of Spheroidal Graphite Cast Iron for Enhanced Wear Resistance
Advisor: Prof. Qifu Luo

❖ Professional Experience

Sept. 2016 – present Professor, Department of Materials Science and Engineering
Director, W.M. Keck Center for Advanced Microscopy and Microanalysis, College of Engineering, University of Delaware

Sept. 2010 – Aug. 2016 Associate Professor, Department of Materials Science and Engineering
Director, W.M. Keck Center for Advanced Microscopy and Microanalysis, College of Engineering, University of Delaware

May 2001 – Aug. 2010 Director, W.M. Keck Center for Advanced Microscopy and Microanalysis, College of Engineering, University of Delaware.
Associate Professor (Secondary appointment, Sept. 2005 – Aug. 2010), Department of Materials Science and Engineering.
Assistant Professor (Secondary appointment, May 2001 – Aug. 2005), Department of Materials Science and Engineering.

Apr. 1999 – May 2001 Scientist (2000 - 2001), Metrology Engineer (1999 - 2000), R&D, Rodel Inc. (Rohm & Haas Electronic Materials, currently Dow Chemical), Delaware.

May 1997 – Apr. 1999 Laboratory Manager (1998 - 1999) and Transmission Electron Microscopy Specialist (TEM, PLM, PCM, 1997 - 1999), Batta Laboratories Inc., Delaware.

Jan. – May 1997 Post-doctor, Department of Physics and Astronomy, University of Delaware.
Advisor: Prof. George Hadjipanayis

Nov. 1996 – Jan. 1997 Laboratory Assistant, Institute of Energy Conversion, University of Delaware

Sept. 1987 – Jan. 1992 Dept. Head and Lecturer (1989 - 1992), Assistant Professor (1987 - 1989), Department of Mechanical Engineering, Jiangnan University, Wuxi, China

Feb. 1982 – Aug. 1984 Assistant Engineer, Qishuyan Locomotive & Rolling Stock Technology Research Institute, Changzhou, China

❖ Research

Research interests

My general research interest centers on the characterization of novel structures and composites using transmission electron microscopy (TEM) and scanning electron microscopy (SEM). Expertise includes electron crystallography and e-beam associated spectroscopy. Active efforts are on the process-structure-property relationships of advanced composites, mesoporous crystals, functionalized nanostructures and assemblies, thin films, interfaces and coherence growths.

Publications (total citations 3777, h-index 32, Google Scholar as of 09/10/2016)

Refereed journal publications

1. Ning Ye, Joseph P Feser, Sridhar Sadasivam, Timothy S Fisher, Tianshi Wang, Chaoying Ni, Anderson Janotti, Thermal Transport Across Metal Silicide-Silicon Interfaces: An Experimental Comparison between Epitaxial and Non-epitaxial Interfaces, 2016, arXiv preprint arXiv:1609.01776

2. Xiazhang Li, Wei Zhu, Yu Yin, Xiaowang Lu, Chao Yao, Chaoying Ni, $La_{1-x}Ag_xFeO_3$/halloysites nanocomposite with enhanced visible light photocatalytic performance, *Journal of Materials Science: Materials in Electronics*, 2016, 27(5), 4180-4185.

3. Xiazhang Li, Wei Zhu, Xiangyu Yan, Xiaowang Lu, Chao Yao, Chaoying Ni, Hierarchical La0.7Ce0.3FeO3/halloysite nanocomposite for photocatalytic degradation of antibiotics, *Applied Physics A*, (2016) 122, 723. doi:10.1007/s00339-016-0240-3

4. Huan Yang, Hailan Xu, J Kriss Frank, Guangtong Xu, Weiwei Huan, Chaoying Ni, Yuxiang Yang, Influences of SiO_2/Na_2O Molar Ratio on Aging and Chemical Modification of Water Glass, *Open Journal of Inorganic Chemistry*, 6(2), 2016, 125-134, DOI: 10.4236/ojic.2016.62008

5. Xiazhang Li, Zuosong Zhang, Chao Yao, Xiaowang Lu, Xiaobing Zhao, Chaoying Ni, Attapulgite-CeO_2/MoS_2 ternary nanocomposite for photocatalytic oxidative desulfurization, *Applied Surface Science*, 2016, 364, 589-596, doi:10.1016/j.apsusc.2015.12.196

6. Xiazhang Li, Yu Yin, Chao Yao, Shixiang Zuo, Xiaowang Lu, Shiping Luo, Chaoying Ni, $La_{1-x}Ce_xMnO_3$/attapulgite nanocomposites as catalysts for NO reduction with NH_3 at low temperature, *Particuology*, 2016, 26, 66-72

7. Yufu Zhu; Chengfeng Yu; Chaoying Ni, Low temperature synthesis and photocatalytic performance of tungsten trioxide film, *Surface Engineering*, 32(1), 2016, 26-31, http://dx.doi.org/10.1179/1743294415Y.0000000104

8. Xiaoqian Ma, Jinglin Liu, Chaoying Ni, David C Martin, D Bruce Chase, John F Rabolt, Estrella Laredo, Dinorah Newman, Romina Pezzoli, Alejandro J Muller, Alfredo Bello, Madeleine P. Gordon, Lawson T. Lloyd, and David S. Boucher Poly (3-hexylthiophene) Films Prepared Using Binary Solvent Mixtures, *Journal of Polymer Science | Part B: Polymer Physics*, 54, 2016, 525-610, DOI: 10.1002/polb.23987

9. Xiazhang Li, Chaoying Ni, Xiaowang Lu, Shixiang Zuo,Wenjie Liu, Chao Yao, *In situ* fabrication of $Ce_{1-x}La_xO_{2-\delta}$/palygorskite nanocomposite for efficient catalytic oxidation of CO: effect of La doping, *Catalysis Science & Technology*, 2016, 6, 545-554, DOI: 10.1039/C5CY00909J.

10. Xiaoqian Ma, Jinglin Liu, Chaoying Ni, David C. Martin, D. Bruce Chase, John F. Rabolt, The effect of collector gap width on the extent of molecular orientation in polymer nanofibers, *Journal of Polymer Science | Part B: Polymer Physics*, 54, 2016, 617-623, DOI: 10.1002/polb.23944

11. Liang Gong, D. Bruce Chase, Isao Noda, Jinglin Liu, David C. Martin, Chaoying Ni, and John F. Rabolt, Discovery of β-Form Crystal Structure in Electrospun Poly[(*R*)-3-hydroxybutyrate-co-(*R*)-3-hydroxyhexanoate] (PHBHx) Nanofibers: From Fiber Mats to Single Fibers, *Macromolecules*, 2015, 48(17), 6197-6205, DOI: 10.1021/acs.macromol.5b00638.

12. Jinglin Liu, Bin Wei, Jennifer D. Sloppy, Liangqi Ouyang, Chaoying Ni, and David C. Martin, Direct Imaging of the Electrochemical Deposition of Poly(3,4-2 ethylenedioxythiophene) by Transmission Electron Microscopy, *ACS Macro Lett.*, 2015, 4, 897-900, DOI: 10.1021/acsmacrolett.5b00479

13. G. Hassnain Jaffari, Abdul K. Rumaiz, C. Ni, Emre Yassitepe, M. Bah, S. Ismat Shah, Observation of metastable phase separation and amorphous phase in Fe 67 Co 33 alloy thin films synthesized by pulsed laser depositions, *Current Applied Physics,* 15(6), 2015, 717-721.

14. Xiazhang Li, Chao Yao, Xiaowang Lu, Yu Yin, Shixiang Zuo, Chaoying Ni, TiO_2/Attapulgite Nanocomposite as Photocatalyst: Impact of Phase Transition, *Science of Advanced Materials*, 7, 2015, 1400-1405.

15. Jianqing Chen, Donghui Yang, Dan Song, Jinghua Jiang, Aibin Ma, Michael Z Hu, Chaoying Ni, Recent progress in enhancing solar-to-hydrogen efficiency, *Journal of Power Sources*, 280, 2015, 649-666.

16. Xiazhang Li, Chao Yao, Xiaowang Lu, Zonglin Hu, Yu Yin, Chaoying Ni, Halloysite-CeO_2-AgBr nanocomposite for solar light photodegradation of methyl orange, *Applied Clay Science*, 104, 2015, 74-80.

17. Xiazhang Li, Fei Deng, Chaoying Ni, Zhigang Chen, Progress in *in-situ* transmission electron microscopy, *Physical Testing and Chemical Analysis Part A: Physical Testing*, 51(4), 2015, 225-228, (in Chinese).

18. Liangdong Feng, Yufu Zhu, Hongyan Ding, Chaoying Ni, Recent progress in nickel based materials for high performance pseudocapacitor electrodes, *Journal of Power Sources*, 2014, 267, 430-444.

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22. Chao Yao, Shan Zhang, Shixiang Zuo, Wenjie Liu, Yong Kong, Xiaoheng Liu, Xin Wang, Chaoying Ni, The relationship between modulated morphology of attapulgite/polypyrrole composites and electrical property, *Materials Letters*, 2014, 126, 135-138.

23. Nopporn Rujisamphan, Roy E Murray, Fei Deng, Chaoying Ni, S Ismat Shah, Study of the Nanoscale Morphology of Polythiophene Fibrils and a Fullerene Derivative, *ACS Appl. Mater. Interfaces,* 2014, 6 (15), pp 11965–11972, DOI: 10.1021/am502577s.

24. Caifeng Chen, Daiwei Hong, Andong Wang, Chaoying Ni, Zhenxiang Chen, Preparation of Flexible Nano Piezoelectric/Glass Fiber Cloth Composite by Hydrothermal Method, *Nanoscience and Nanotechnology Letters*, 2014, 6 (4), 357-360.

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fibers via a photon irradiation process, *Applied Physics Letters*, 100 (21), 2012, 213109, DOI: http://dx.doi.org/+10.1063/1.4720509

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Publications in conference proceedings

120. Sean Fudger, Eric Klier, Prashant Karandikar, Chaoying Ni, Evaluation of Intermetallic Reaction Layer Formation within Steel Encapsulated Metal Matrix Composites, *TMS 2016 145th Annual Meeting Supplemental Proceedings*, Feb. 14-18, 2016, Nashville, Tennessee, 109-117.

121. Tianshi Wang, Chaoying Ni, and Prashant Karandikar, Microstructual Characteristics of Reaction-Bonded B4C/SiC Composite, *TMS 2016 145th Annual Meeting Proceedings*: *Characterization of Minerals, Metals, and Materials,* Feb. 14-18, 2016, Nashville, Tennessee, 279-286.

122. Sean Fudger, Eric Klier, Prashant Karandikar, Brandon McWilliams, Chaoying Ni, Mechanical Properties of Steel Encapsulated Metal Matrix Composites, *Advanced Composites for Aerospace, Marine, and Land Applications II*, 2015, 121-136.

123. Hongtao Lin, Lan Li, Yi Zou, Fei Deng, Chaoying Ni, Sylvain Danto, J. David Musgraves, Kathleen Richardson, Stephen T. Kozacik, Maciej Murakowski, Dennis Prather, Juejun Hu, Planar chalcogenide glass mid-infrared photonics, *Proceedings of SPIE - The International Society for Optical Engineering* 02/2014; DOI:10.1117/12.2035688.

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127. Fei Deng, Chaoying Ni, Stephen C. Hawkins, Properties improvement of carbon nanotube fiber and carbon nanotube fiber/polymer composites by photon irradiation, Proceedings of the 36th Symposium on Composite Materials, Sendai, Japan, October 20, 2011

128. Brian G. Willis, Rahal Gupta and Chaoying Ni, Atomic Layer Deposition for Nanoelectrode devices, *ECS Transactions - Las Vegas, NV,* Volume 33, Atomic Layer Deposition Applications 6, October 2010, 25-35.

129. Emre Yassitepe, C. Ni, S. Ismat Shah, Rapid route to synthesize $CuIn_{1-x}Ga_xSe_2$ films by tip sonication, Proceedings of the Society of Vacuum Coaters Annual Meeting, Orlando, FL, April 2010

130. Valeria Gabriela Stoleru, Elias Towe, Chaoying Ni, and Debdas Pal, Quantum-Dot Molecules for Potential Applications in Terahertz Devices, *Mater. Res. Soc. Symp. Proc.* Vol. 829, 2005, B1.3.1-B1.3.6

131. Abdullah Ceylan, C. Ni, and S. Ismat Shah, Enhanced Solubility of Cu in Ag Nanoparticles Synthesized by Inert Gas Condensation, *Mater. Res. Soc. Symp. Proc.* Vol. 829, 2005, U5.5

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135. C. Vahlas, I. W. Hall, P. Chevalier, C.-Y Ni, Thermodynamic and experimental modeling of interfacial reactivity in metal matrix composites, *Key Engineering Materials Proceedings of the 1st International Conference on Ceramic and Metal Matrix Composites*, CMMC 96. Part 1 (of 2) Sep 9-12 1996 v 127-131, San Sebastian, Spain, 1997 Transtec Publ Ltdd. Zurich Switzerland, 359-366.

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Book chapters

1. Chaoying Ni, Scanning Electron Microscopy, In: Wang Q., Chung Y. (Ed.) Encyclopedia of Tribology: Springer Reference (www.springerreference.com). Springer-Verlag Berlin Heidelberg, 2013. DOI: 10.1007/SpringerReference_341143 2012-08-22 13:57:34 UTC.

2. Wanfeng Li, Chaoying Ni, Electron Energy Loss Spectroscopy (EELS), In: Wang Q., Chung Y. (Ed.) Encyclopedia of Tribology: Springer Reference (www.springerreference.com). Springer-Verlag Berlin Heidelberg, 2013. DOI: 10.1007/SpringerReference_332887 2012-07-11 15:14:27 UTC.

3. Hui-Yin (Harry) Li, Rui Liu, Carl Behrens, and Chaoying Ni, Chapter 7 Industrial Application of Chiral Technologies, Wiley, 2011, 253-296

❖ Presentations and posters

Invited talks (presented by Chaoying Ni or otherwise indicated)

1. Probing structural responses to environmental stimuli via in-situ electron microscopy, Changzhou University, Changzhou, China, Nov. 18, 2015.

2. *In-situ* electron microscopy for intrinsic material properties and mechanisms, Hohai University, Nanjing, China, Nov. 19, 2015.

3. Structural and property characteristics of advanced carbides and thin films, Hohai University, Nanjing, China, Nov. 24, 2015.

4. Structural and property evaluation of multifunctional ceramic composites, November 26, 2016, The 9th International Conference on Multifunctional Materials and Applications (ICMMA 2015), Suzhou, China, November 26-28, 2015.

5. Methods and applications of *in-situ* transmission electron microscopy, Changzhou University, Changzhou, China, August 15, 2014

6. Hongtao Lin, Lan Li, Yi Zou, Fei Deng, Chaoying Ni, Juejun Hu, Sylvain Danto, Kathleen Richardson, Stephen Kozacik, Maciej Murakowski, Dennis Prather, J. David Musgraves, Planar chalcogenide glass mid-infrared photonics, SPIE Photonics West, San Francisco, February 13 - 18, 2014. (presented by Juejun Hu)

7. Advanced Electron Microscopy: Recent Progress and Applications, Suzhou University of Science and Technology, China, July 6, 2013

8. Modifying CNT assemblies via photon induced simultaneous surface activation and polymer deposition, Huaiying Institute of Technology, China, June 20, 2013.

9. Recent Progress in *In-Situ* Transmission Electron Microscopy: Challenges and Opportunities, Changzhou University, China, June 18, 2013

10. CNT functionalization via simultaneous Xe-VUV light irradiation and photon induced polymer coatings, Eastern Analytical Symposium, Somerset, New Jersey, November 14, 2012.

11. Auriga FIB/SEM CrossBeam™ and Its Applications in Solar Cell Research, Institute of Energy Conversion, University of Delaware, March 23, 2012

12. SPM applications in biomaterial research and tribology, a talk in the workshop Nano Surface Metrology - Featuring Atomic Force and 3D Optical Microscopy, Delaware, February 8, 2012.

13. A universal SEM testing stage for in-situ mechanoelectric evaluation of nano- and microstructures, Suzhou University of Science and Technology, China, June 20, 2011.

Other Presentations (presented by Chaoying Ni or otherwise indicated; a partial list)

14. Sean Fudger, Eric Klier, Prashant Karandikar, Chaoying Ni, Evaluation of Intermetallic Reaction Layer Formation within Steel Encapsulated Metal Matrix Composites, TMS 2016 145th Annual Meeting Supplemental Proceedings, Feb. 14-18, 2016, Nashville, Tennessee, (presented by Sean Fudger)

15. Tianshi Wang, Chaoying Ni, and Prashant Karandikar, Microstructual Characteristics of Reaction-Bonded B_4C/SiC Composite, TMS 2016 145th Annual Meeting Proceedings: Characterization of Minerals, Metals, and Materials, Feb. 14-18, 2016, Nashville, Tennessee, (presented by Tianshi Wang)

16. Sean Fudger, Eric Klier, Prashant Karandikar, Brandon McWilliams, Chaoying Ni, Mechanical properties of steel encapsulated metal matrix composites, TMS 2015 144th Annual Meeting & Exhibition, Orlando, Florida, March 15 – 19, 2015. (presented by Sean Fudger)

17. Halise Celik, Xin Fan, Wenrui Wang , Jun Wu , Chaoying Ni , Kyung-Jin Lee , John Xiao , Virginia Lorenz, Magneto-optic-Kerr-effect-based spin-orbit torque magnetometer, ACS March Meeting, Denver, Colorado, March 3-7, 2014. (presented by Halise Celik)

18. Light-induced polymer vaporization and deposition for CNT assembles, Tsinghua-UD Workshop on Nanotechnology for Energy and Environment, Shenzhen, Guangdong Province Jan 9 - 12, 2013 China.

19. Recyclable Transition Metal Catalyst System for Pharmaceutical Processes, DBI Research Symposium, Delaware, August 20, 2013.

20. Fei Deng, Chaoying Ni, Stephen C. Hawkins, Properties improvement of carbon nanotube fiber and carbon nanotube fiber/polymer composites by photon irradiation, Proceedings of the 36th Symposium on Composite Materials, Sendai, Japan, October 20, 2011. (presented by Fei Deng)

21. Chelsea Haughn, Hao Shen, Chaoying Ni, Michael Mackay and Matt Doty, Fluorescent Resonance Energy Transfer Between Colloidal Quantum Dots in Polystyrene Thin Films, MRS Spring Meeting, San Francisco, California, April, 2011. (presented by Chelsea Haughn)

22. G. Hassnain Jaffari, Abdullah Ceylan, Chaoying Ni, S. Ismat Shah, Enhancement of surface spin disorder in hollow $NiFe_2O_4$ nanoparticles, APS March Meeting, Portland, Oregon, March 15-19, 2010. (presented by G. Hassnain Jaffari)

23. Xing Chen, Karl Unruh, Qi Lu, Ali Bakhtyar, Chaoying Ni and John Q. Xiao, Fabrication and Magnetic Properties of Metal Oxide Nanotubes via Electrospinning and Thermal Treatment, MRS Fall Meeting, Boston, 2010. (presented by Xing Chen)

24. Scott Edward Buzby, Chaoying Ni and S. Ismat Shah, Plasma assisted-MOCVD synthesis of N-doped TiO_2 for visible-light photocatalysis, MRS Fall Meeting, Boston, 2010. (presented by Scott Edward Buzby)

25. Weigang Wang, Chaoying Ni, Takahiro Moriyama, Jun Wan, Ed Nowak, John Xiao, Tunneling Magnetoresistance in Magnetic Tunnel Junctions with a (Zn, Cr)Te electrode, APS March Meeting, Baltimore, MD, March 13-17, 2006. (presented by Weigang Wang)

Posters (partial list)

1. Chun-yen Hsu, Fei Deng, Prashant Karandikar, Chaoying Ni, SiC-Si interfacial thermal and mechanical properties of reaction bonded SiC/Si ceramic composites, APS Spring Meeting, Baltimore, 2016

2. Chun-yen Hsu, Fei Deng, Bo Yuan, Prashant Karandikar, Robert Opila, Chaoying Ni, Nano-mechanical properties of SiC in reaction bonded SiC/Si ceramic matrix composites, MRS fall meeting and exhibition, Boston, November, 2015

3. Chang Liu, Fei Deng, Harry Li and Chaoying Ni, Recyclable Transition Metal Catalyst System for Pharmaceutical Processes, DBI Research Symposium, August, 2013

4. Fei Deng, N. Rujisamphan, Chang Liu, Stephen C. Hawkins, S. Ismat Shah, Chaoying Ni, Light-induced polymer coatings on the surface of carbon nanotube forest and yarn, MRS Fall Meeting, Boston, 2012.

5. Fei Deng, N. Rujisamphan, Stephen C. Hawkins, S. Ismat Shah1, Chaoying Ni, Poly (3-hexylthiophene) coated well-aligned multi-walled carbon nanotubes for organic solar cell, MRS Fall Meeting, Boston, 2012.

6. Nopporn Rujsiamphan, Fei Deng, Chaoying Ni, S. Ismat Shah, Understanding the inter-diffusion and blending in P3HT/PCBM bilayers by electron microscopy and coarse-grained simulation, MRS Fall Meeting and Exhibition, Boston, MRS Fall Meeting, Boston, 2012.

7. Z. G. Huang, Rui Liu, Li Zhang, Chaoying Ni, and Harry Li, Si-Thiol supported palladium catalyst for Suzuki coupling reaction, ACS meeting, Washington D.C., 2009

❖ Research

1. Reaction Bonded SiC-Si and B_4C-SiC-Si Ceramic Matrix Composites: Formation, Microstructure and Properties, II-VI Foundation, 7/1/2014 – 6/30/2017

2. Recyclable Porous-SiO_2 Supported Transition Metal Catalysts for Active Pharmaceutical Ingredients (APIs), Co-PIs: David Martin & Harry Li, UD DBI Center for Advanced Technology, 5/1/2012 – 4/30/2014

3. Synthesis and Polymorphism of Pharmaceutical Compounds, Wilmington PharmaTech, 7/1/2007 – 6/30/2011

4. Chipscale photonic sensors for Delaware water and air quality monitoring, Delaware EPSCoR Seed Grant Program, PI: Juejun Hu, 4/1/2012 – 3/31/2013

5. Research Infrastructure Improvement Program (RII-3), Meeting Delaware's 21st Century Water and Energy Challenges through Research, Education, and Innovation, PI: Donald Sparks, NSF EPSCoR, 6/1/2013 – 5/31/2018

6. NIH COBRE III: Molecular Design of Advanced Biomaterials, PI: Tatyana Polenova, Sub-project: Microscopy and Mechanical Testing Core (Xinqiao Jia), 9/30/2014 – 7/31/2019

7. NIH COBRE III: Osteoarthritis: Prevention and Treatment, PI: Thomas S. Buchanan, Sub-project: Cytomechanics Core (Liyun Wang), 8/1/2012 – 4/30/2017

8. **International collaborations (active):**

   1) "*In situ* EM Characterization of Functional Materials and Properties for Environment" PI: Xiazhang Li, Changzhou University, China.

   2) "Hybrid Organic-Inorganic Perovskite Materials and Packaging for Solar Water-Splitting" PI: Jianqing Chen, Hohai University, China.

❖ Courses Taught

- MSEG624 (MSEG667) Practical Electron Microscopy in Materials Science
- MSEG608 Structure of Materials (course owner: Prof. Pochan): co-teaching
- MSEG602 Structure of Materials (course owner: Prof. Pochan): co-teaching
- MSEG603 Structure of Materials (course owner: Prof. Rabolt): co-teaching

❖ Workshop hosted and short course taught

- Nov. 19 – 25, 2015, short course offered at Hohai University, Nanjing, China, Practical Electron Microscopy in Materials Science

- Mar. 31 – Apr. 1, 2015, workshop at the University of Delaware hosted with Gerald R. Poirier & Oxford Instruments, EDS X-Ray Microanalysis in the Modern Electron Microscope

- Feb. 7 – 8, 2012, workshop at the University of Delaware hosted with Bruker, Nano Surface Metrology - Featuring Atomic Force and 3D Optical Microscopy

- Jun. 14 – 25, 2004, short course offered at Changzhou University, Changzhou, China, Introduction to Electron Microscopy in Materials Science

❖ Undergraduates, Graduates, and Visiting Scientists Supervision

- Current:
  PhD graduates (4): Sean Fudger (5th year); Chun-Yen (Nicolas) Hsu (4th year); Tianshi Wang (2nd year); Yuying Zhang (2nd year)

  Visiting scholar (1): Yuxiang Yang

  Undergraduate (1): Yu Cao (sophomore in chemical and biomolecular engineering)

- Previous:
  Sponsored PhDs and post-docs (6)
  Sponsored/hosted visiting professors and scientists (14)
  Sponsored graduates (5)
  Sponsored/hosted undergraduates (4)

❖ Development of Electron Microscopy Facility (since 2001)

Team building (2001-2015, worked with UD Advanced Microscopy Oversight Committee in Physical Sciences)

Apr. 15, 2001 – present	Chaoying Ni
Mar. 01, 2003 – Jun. 30, 2013	Frank Kriss, Senior Technician, retired on Jul. 1, 2013
Aug. 01, 2012 – Aug. 31, 2016	Fei Deng, PhD, Research Associate III
Aug. 19, 2013 – present	Jennifer Sloppy, PhD, Research Associate I
Sept. 26, 2016 – present	Yong Zhao, PhD, Research Associate I

Major equipment acquisitions (2001-2016)
Total: ~ $10 M since 2001

User base and revenue
Users at steady state: ~ 250 annually (200 research and 50 teaching) including 80-100 new research users

❖ Scientific Community Service

Reviewer/referee for the following scientific journals and funding agencies:

- Journal of Power Sources
- RSC Advances
- ACS Applied Materials & Interfaces
- ACS Nano
- Langmuir
- Microscopy and Microanalysis
- Scripta Materialia
- Materials Science in Semiconductor Processing
- Materials Research Express
- Powder Technology
- Electrochimica Acta
- Materials Chemistry and Physics
- Applied Catalysis B: Environmental
- Nanoscience and Nanotechnology Letters
- Microporous & Mesoporous Materials
- Nanotechnology
- Applied Surface Science
- Journal of Colloid and Interface Science
- Materials Research Bulletin
- Journal of Applied Physics
- Journal of Physics D: Applied Physics
- Journal of Crystal Growth
- Journal of Physical Chemistry, C
- Proceedings of MMM-Intermag Conference
- Composites Science and Technology

- National Science Foundation (NSF)
- U.S. Civilian Research and Development Foundation (CRDF)

Societies and other services:

- Symposium organizer and chair of "Analytical Electron Microscopy", Microscopy & Microanalysis 2016 (July 24-28, 2016) in Columbus, Ohio

- Member of Microscopy Society of America

- Member of Materials Research Society
- Member of America Physical Society
- Member of America Chemical Society

- Member (2001-2002) and chair (2002-05), MSE Safety Committee
- Chair of search committee for a Senior Research Technician III in the MSE department (2004-05)
- Chair of search committee for a Research Associate III in the MSE department (2012)
- Chair of search committee for a Research Associate I in the MSE department (2013)
- Member of search committee for a Research Associate II in the MSE department (2013)
- Chair of search committee for a CSS-II in CoE IT (2013)
- Member of Search committee for a CSS-II in CoE IT (2014)
- Member of Search committee for a second CSS-II in CoE IT (2014)
- Member of search committee for an Associate Scientist in the MSE department (2015)

- Member of CoE Instrument/Infrastructure Committee (2008 - 2010)
- Meeting organized & member of Advanced Microscopy Oversight Committee, physical sciences (2001 – present)

- COBRE Cytomechanics Core (Advisor, 2012 – present)
- COBRE Microscopy and Mechanical Testing Core (Advisor, 2014 – present)

- PhD thesis committees (current: 18; past: 19)