CURRICULUM VITAE

Michael T. Harris

Associate Dean for Undergraduate Education

Robert B. and Virginia V. Colvalt Professor of Chemical Engineering

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January 25, 2017

-Notarization-

***I have read the following and certify that this curriculum vitae is a current and accurate statement of my professional record.***

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Signature

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1. **Personal Information**

Name Michael T. Harris

DepartmentSchool of Chemical Engineering

Current Rank Professor August 2006

**Education**

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| --- | --- | --- | --- |
| Mississippi State University | B.S. Chemical Engineering  Summa Cum Laude | May | 1981 |
| University of Tennessee | M.S. Chemical Engineering  (4.0/4.0) | August | 1987 |
| University of Tennessee | Ph.D. Chemical Engineering | May | 1992 |

(4.0/4.0)

**Employment Background:**

Purdue University

**2016-present:** Robert B. and Virginia V. Covalt Professor of Chemical Engineering

**2015-2016:** Reilly Professor of Chemical Engineering

**2007-present:** Associate Dean for Undergraduate Education, College of Engineering

**Apirl 2006-December 2006**: Interim Associate Dean for Undergraduate Education, College of Engineering

**2006-present:** Professor, School of Chemical Engineering

*Current Research Interests:* Nanoparticle technology, Colloids and Interfacial Phenomena, Laser light and X-ray scattering, electric and ultrasonic dispersion precipitation, electrohydrostatic and electrohydrodynamic computations

**2002-2006:** Associate Professor, School of Chemical Engineering. *Current* *Research Interests*: Nanoparticle technology (particle formation), electrostatic atomization, electrohydrostatic and electrohydrodynamic computations, electric and ultrasonic dispersion precipitation, laser and X-ray scattering spectroscopy, colloid and interfacial phenomena.

University of Maryland at College Park

**1996-2002**: Associate Professor, Department of Chemical Engineering and the Institute for Physical Science and Technology. *Current* *Research Interests*: Nanoparticle technology (particle formation), electrostatic atomization, electrohydrostatic and electrohydrodynamic computations, electric and ultrasonic dispersion precipitation, laser and X-ray scattering spectroscopy, colloid and interfacial phenomena.

Oak Ridge National Laboratory, Oak Ridge, Tennessee

**1995**: Group Leader, Separations and Materials Synthesis Group,

Energy Research Section (ERS), Chemical Technology Division. Manage fundamental research activities in electromagnetic enhanced separations and materials synthesis. Principal Investigator of programs in fine powder synthesis.

**1993-1995**: Staff Member II, Kinetics and Transport Research Group, Energy Research Section (ERS), Chemical Technology Division. Principal Investigator for two major research programs in fine powder synthesis by homogeneous precipitation and electrodispersion. Responsible for earch efforts in electric bed filtration, electrohomogeneous precipitation, and electrohydrostatics of drops suspended from nozzles.

**1990-1993**: Staff Member I, Kinetics and Transport Research Group, Energy Research Section (ERS), Chemical Technology Division. Responsible for research in (a) fine powder synthesis by homogeneous precipitation, electrodispersion and electrohomo- geneous precipitation techniques, (b) theoretical analysis of electrostatics of drops hanging from nozzles, (c) light scattering spectroscopy, and (d) synthesis of model nanometer particles for powder evacuated panels.

**1985-89**: Development Engineer III. Kinetics and Transport Research Group, Energy Research Section (ERS), Chemical Technology Division. Responsible for research in (a) fine powder synthesis by homogeneous precipitation,

electrodispersion and electrohomogeneous precipitation techniques, (b) theoretical analysis of electrostatics of drops hanging from nozzles, and (c) light scattering spectroscopy.

Y-12 Facility, Oak Ridge, Tennessee

**1984-85**: Development Engineer II. Environmental consultant to the newly formed Waste Operations Department. Specialized in the areas of denitrification, and the removal of heavy metal, organics and suspended solids.

Oak Ridge National Laboratory, Oak Ridge, Tennessee

**1981-84**: Development Engineer I, Chemical Technology Division. Lead development engineer for several Environmental Control Technology research programs in the areas of wet air oxidation, anaerobic wastewater treatment, and ozonation. These projects ranged from bench-scale equipment to pilot plants.

**2. Research, Scholarly and Creative Activities**

1. R. K. Genung, C. W. Hancher, A. L. Rivera, and M. T. Harris, "Energy Conversion and Methane Production in Municipal Wastewater Treatment Using Fixed-Film, Anaerobic Bioreactors," Biotechnol. Bioeng., **Suppl. 12**, 365-380 (1982).
2. C. H. Brown, M. T. Harris, and R. D. Roop, "Polishing Treatment of Coal Liquefaction Wastewater," *Environmental Progress*, **3**, 4, 228-237 (1984).
3. C. H. Byers, M. T. Harris and D. Williams, “Controlled Microcrystalline Growth Studies by Dynamic Laser-Light-Scattering Methods,” *I&EC Res.*, **26**, 1916-1923 (1987).
4. M. T. Harris\* and C. H. Byers, "Effect of Solvent on the Homogeneous Precipitation of Titania by Titanium Ethoxide," *J. Non-Crystalline Solids*, **103**, 49-64 (1988).
5. M. T. Harris\*, C. H. Byers, and R. R. Brunson, "A Study of Solvent Effects on the Synthesis of Pure Component and Composite Ceramic Powders by Metal Alkoxide Hydrolysis," *Mat. Res. Soc. Symp. Proc.*, **121**, 287-292 (1988).
6. M. T. Harris\*, R. R. Brunson, and C. H. Byers, "The Base Catalyzed Hydrolysis and Condensation Reactions of Dilute and Concentrated TEOS Solution," *J. Non-Crystalline Solids*, **119**, 397-403 (1990).
7. M. T. Harris\*, C. H. Byers, and R. R. Brunson, "The Effects of Aluminum Alkoxides on the Synthesis of Composite Powders of Alumina and Titania," *Mat. Res. Soc. Symp. Proc.*, **155**, 23-28 (1990).
8. M. T. Harris\*, T. C. Scott, O. A. Basaran, and C. H. Byers, "Morphology Control in Precursor Ceramic Powder Production by the Electrical Dispersion Reactor," *Mat. Res. Soc. Symp. Proc.*, **180**, 853-856 (1990).
9. M. T. Harris, O. A. Basaran, and C. H. Byers, "Precipitation Dynamics of Silica Particles,"Ceramic Powder Science III, **12**, 119-127 (1990).
10. M. T. Harris\*, T. C. Scott, O. A. Basaran, and C. H. Byers, "Formation of Y-Ba-Cu (1-2-3) Hydrous Oxide Precursor Powders in the Electric Dispersion Reactor," AIChE/Symposium Series, Superconducting Engineering, **88**, 44-46 (1992).
11. M. T. Harris\*, O. A. Basaran, and C. H. Byers, "Theoretical and Experimental Investigations of the Growth of Silica and Titania Particles in Low Molecular Weight Alcohols," *Mat. Res. Soc. Symp. Proc*., **271**, 291-296 (1992).
12. M. T. Harris\*, W. G. Sisson, and O. A. Basaran, "Computation, Visualization, and Chemistry of Electric Field-Enhanced Production of Ceramic Precursor Powders," *Mat. Res. Soc. Symp. Proc.,* **271**, 945-950 (1992).
13. M. T. Harris\*, T. C. Scott and C. H. Byers, "The Synthesis of Metal Hydrous Oxide Particles by Multiphase Electrodisperision", *Mat. Sci. Eng.,* **A168**, 125-129 (1993).
14. M. T. Harris\* and O. A. Basaran, "Capillary Electrohydrostatics of Conducting Drops Hanging from a Nozzle in an Electric Field," *J. Colloid Interface Sci.*, **161**, 389-413 (1993).
15. X. Zhang, M. T. Harris and O. A. Basaran, "Measurement of Dynamic Surface Tension by a Growing Drop Technique", *J. Colloid Interface Sci.,* **168**, 47-60(1994).
16. M. T. Harris\*, W. G. Sisson, T. C. Scott, O. A. Basaran, C. H. Byers, W. Ren and T. T. Meek, "Multiphase Electrodispersion Precipitation of Zirconia Powders," *Mat. Res. Soc. Symp. Proc.,* **346**, 171-176 (1994).
17. M. T. Harris\*, W. G. Sisson, S. M. Hayes, S. J. Bobrowski and O. A. Basaran, "Porous Spherical Shells and Microspheres by Electrodispersion Precipitation," *Mat. Res. Soc. Symp. Proc.***, 372**, 43-48(1995).
18. W. G. Sisson, R. R. Brunson, T. C. Scott , M. T. Harris\* and J. L. Look, "Removal of Submicron Silica Particles from *tert*-Amyl Alcohol by Dielectric/Electric Bed Filtration", *Sep. Sci. Technol.,* **30**, 1421-1434 (1995).
19. C. Tsouris, T. C. Scott and M. T. Harris, "Para- and Dia-magnetic Particle Flocculation in a Magnetic Field," *Sep. Sci. Technol.,* **30**, 1407-1419(1995).
20. M. T. Harris\* and O. A. Basaran, "Equilibrium Shapes and Stability of Nonconducting Pendant Drops Surrounded by A Conducting Fluid in an Electric Field," *J. Colloid Interface Sci.,* **170**, 308-319 (1995).
21. M. T. Harris\*, W. G. Sisson, O. A. Basaran and C. H. Byers, “Irreversible Fibril Formation During Electrohomogeneous Precipitation,” *Advances Sci. Technol.*  **17**, 29-34 (1995).
22. M. T. Harris\*, D. W. DePaoli and M. R. Ally, Modeling the Electrokinetic Transport of Strontium and Cesium Through a Slab of Concrete,” *Sep. Purification Technol.* **11**, 147-158 (1997).
23. M T. Harris\*, J. A. Singhal, L. Look, J. R. Smith-Kristensen, J. S. Lin and L. M. Toth, “”FTIR Spectroscopy, SAXS and Electrical Conductivity Studies of the Hydrolysis and Condensation of Zirconium and Titanium Alkoxides,” *J. Sol-Gel Sci. Technol*., **8**, 41-47 (1997).
24. M. T. Harris\*, D. W. DePaoli and M. R. Ally, “Modeling the Electrokinetic Decontamination of Concrete,” *Sep. Sci. Technol.,* **32*,*** 827-848 (1997).
25. D. W. DePaoli, M. T. Harris, I. L. Morgan and M. R. Ally, “Investigation of Electrokinetic Decontamination of Concrete,” *Sep. Sci. Technol.*, **32**, 387-404 (1997).
26. K. Lee, J-L Look, M. T. Harris, and A. V. McCormick, “Assessing Extreme Models of the Stober Synthesis Using Transients Under a Range of Initial Compositions,” *J. Colloid Interface Sci.*, **194**, 78-88 (1997).
27. H. Boukari, J. S. Lin and M. T. Harris\*, “SAXS Study of the Formation of Colloidal Silica Particles from Alkoxides: Primary Particles or Not?,” *J. Colloid Interface Science*, **194**, 311-318(1997).
28. H. Boukari, J. S. Lin, and M. T. Harris\*, “Probing the Dynamics of the Silica Nanostructure Formation and Growth by SAXS,” *Chem. Mat.****,* 9**, 2376-2384(1997).
29. Michael Z.-C. Hu, J. S. Lin, Michael T. Harris and Charles H. Byers, “Nucleation and Growth Kinetics of Nanometric Zirconia Particles,” *J. Colloid Interface Sci.*, **198**, 87-99(1998).
30. A. Singhal, L.M. Toth, M. T. Harris, G. Beaucage, K. D. Keefer, J. S. Lin and J. R. Peterson, “Growth Kinetics and Structure Study of Polymers in a Zirconium Alkoxide System,” *J. Non-Crystalline Solids*, **246**, 197-208(1999).
31. M. Z.-C. Hu, J. T. Zielke, C. H. Byers, J. S. Lin and M. T. Harris, “Probing the Early-Stage/Rapid Processes in Hydrolysis and Condensation of Metal Alkoxides,” *J. Mat. Sci*, *.*, **35**, 1957 (2000).
32. M. Li, L. Zheng and M. T. Harris, “Modeling the Synthesis of Porous Spherical Shells and Microspheres of Zirconia by Electrodispersion Precipitation”*J. Powder Technology,* **110**, 15-21(2000).
33. H. Boukari, G. G. Long and M. T. Harris, “Polydispersity During the Formation and Growth of the Stober Silica Particles from SAXS and USAXS Measurements,” *J. Colloid Interface Sci.*, **229**, 129-139 (2000).
34. T. Chen, G. Kumar, M. T. Harris, P. J. Smith, G. F. Payne, “Enzymatic Grafting of Hexyloxyphenol onto Chitosan to Alter Surface and Rheological Properties,” *Biotechnol. Bioeng.*, **70**, 564-573(2000).
35. Govar, C.J., T. Chen, N.-C. Liu, M.T. Harris, and G.F. Payne. “Grafting of renewable chemicals to functionalize chitosan.” In Biocatalysis: Frontiers in Polymer Reactions, H.N. Chen and R.A. Gross. Eds. (2001).
36. D.L. Green, S. Jayasundara, Yui-Fai Lam and M. T. Harris, “Chemical Reaction Kinetics Leading to the First Stober Silica Nanoparticles – NMR and SAXS Investigation,” *J. Non-Crystalline Solids*, **315**, 166-179(2003).
37. T. L. Terry, R. T. Collins and M. T. Harris, “Metal Oxide Particle Synthesis by Electric-Field Induced Water-In-Oil Emulsions,” *Ceramics Nanomaterials and Nanotechnology*, **137**, 83-92 (2003).
38. D. L. Green, M. T. Harris, S. Jayasundra, J. S. Lin, M. Z.-C. Hu, and, Y. F. Lam, “Early Stage Silica Formation in Methanol and Ethanol,” *Ceramics Nanomaterials and Nanotechnology*, **137**, 33-57 (2003).
39. L. Khatri, M. T. Harris, and M. Z.-C. Hu, “Nucleation and Growth Mechanism of Silicalite-1 Nanocrystal During Hydrothermal Templated Synthesis,” *Ceramics Nanomaterials and Nanotechnology*, **137**,3 (2003).
40. D. L. Green, J. S. Lin, M. Z.-C. Hu, and M. T. Harris, “Size, Volume Fraction and Nucleation of Silica Nanoparticles – A 29Si-NMR, SAXS and DLS Investigation,” *J. Colloid Interface Sci.*,  **266**, 346-358 (2003).
41. C. Rau, K.M. Peterson, P.R. Jemian, T. Terry, M. Harris, S. Vogt, C.-P. Richter, U. Neuhäusler, G. Schneider, I. K. Robinson, “The Evolution of Hard X-ray Tomography from the Micrometer to the Nanometer Length Scale,” **Developments in Tomography IV, Denver 4-6 Aug. 2004,** edited by U. Bonse, Proceedings SPIE, **5535**, 709-714 (2004).
42. N. Dingle and M. T. Harris, “A Spherical Coordinate-Based Algorithm for Determining the Interfacial Tension and Contact Angle from Sessile Drop Profiles,” *J. Colloid Interface Sci.,* **286**, 647-660 (2005).
43. N. M. Dingle, K. Tjiptowidjojo, O. A. Basaran and M. T. Harris, “A Finite Element Based Algorithm for Determining Interfacial Tension from Pendant Drop Profiles,” *J. Colloid Interface Sci.*, **286**, 670-680 (2005).
44. S.Y. Lee, E. Royston, J. N. Culver and M. T. Harris, “Improved Metal Cluster Deposition on Genetically Engineered Tobacco Mosaic Virus Template,”*Nanotechnology*, **16**, S435-S441(2005).
45. Y. Hyunmin , S. Nisar, S.Y. Lee, M. A. Powers, W. E. Bentley, G. F. Payne, R. Ghodssi, G. W. Rubloff, M. T. Harris, and J. N. Culver, “Patterned Assembly of a Genetically Modified Viral Nanotemplate via Nucleic Acid Hybridization,” *NanoLetters,* **5**(10), 1931-1936 (2005).
46. K. Srinivasan, S. Cular, V. R. Bhethanabotla, S. Y. Lee, M. T. Harris and J. N. Culver, “Nanomaterials Sensing Layer Based Surface Acoustic Wave Hydrogen Sensors,” *2005 IEEE Ultrasonics Symposium*, **Vols. 1-4**, 645-648 (2005).
47. S.Y. Lee, and M. T. Harris, “Surface Modification of Maghemite Nanoparticles Capped by Oleic Acids: Characterization and Colloidal Stability in Polar Solvents,” *J. Colloid Interface Sci.*, **293**(2), 401-408 (2006).
48. S. Y. Lee, E. Royston, J. N. Culver and M. T. Harris, “Effect of the Concentration of CuCl2 on the Aggregation and Mineralization of the Wild-type Tobacco Mosaic Virus Template,” *J. Colloid Interface Sci.****,* 297**(2), 554-560 (2006).
49. S. Y. Lee, J. Choi, E. Royston, D. Janes, J. N. Culver, and M. T. Harris, “Deposition of Platinum Clusters on the Surface Modified Tobacco Mosaic Virus” *J. Nanoscience and Nanotechnology*, **6**(4), 974-981 (2006).
50. E. S. Royston, S. Y. Lee, J. N. Culver and M. T. Harris, “Characterization of Silica-Coated Tobacco Mosaic Virus,’ *Journal of Colloid and Interface Science*, **298**(2), 706-712 (2006).
51. E. Widjaja, N.C. Liu, M. Li, R.T. Collins, O.A. Basaran, and M. T. Harris, “Dynamics of Sessile Droplet Evaporation: A Comparison of the Spine and the Elliptic Mesh Generation Methods,” *Computers in Chemical Engineering*, **31**, 219-232 (2007).
52. R. T. Collins, M. T. Harris, and O. A. Basaran, “Electrified Jet Breakup,” *J. Fluid Mechanics*, **588**, 75-129 (2007).
53. Y. Zhao, M. T. Carvajal, Y. Y Won and M. T. Harris, “Preparation of Calcium Alginate Microgel Beads by Electrodispersion Reaction Using Internal Source of Calcium Carbonate Nanoparticles,” *Langmuir*, **23**, 12489-12496(2007).
54. R. T. Collins, J. J. Jones, M. T. Harris and O. A. Basaran, “Electrohydrodynamic Tip Streaming: Emission of Charged Jets/Drops from Liquid Cones,” *Nature Physics*, **4**, 149-154 (2008).
55. E. S. Royston, A. Gosh, P. Kofinas, M.T. Harris and J. N. Culver, “Self-Assembly of Virus-Structured High Surface Area Nano-Materials and Their Application as Battery Electrodes,” *Langmuir*, **24**, 906-912 (2008).
56. S. Y. Lee, J.S. Lim, E. S. Royston, J. N. Culver and M. T. Harris, “Flocculation of Tobacco Mosaic Virus in LiCl-Alcohol-Water Solutions,” *J. Colloid Interface Sci.,***324**, 92-93 (2008).
57. A. S. Kurup, H. J. Subramani and M. T. Harris, “A Monte Carlo-Based Error Propagation Analysis of Simulated Moving Bed Systems,” *Separation and Purification Technology*, **62**, 582-589 (2008).
58. E. Widjaja and M. T. Harris, “Numerical Study of Vapor Phase-Diffusion Driven Sessile Drop Evaporation,” *Computers & Chemical Engineering*, **32**, 2169-2178 (2008)..
59. E. Widjaja and M. T. Harris, “Particle Deposition Study during Sessile Drop Evaporation,” *AIChE J,* **54**, 2250-2260 (2008).
60. Y. Y. Zhao, F. Li,, M. T. Carvajal, and M. T. Harris, “Interactions Between Bovine Albumin and Alginate: An Evaluation of Alginate as an Encapsulation Carrier,” *J. Colloid Interface Sci.*, **332**(2), 345-353 (2009).
61. E. S. Royston, M. T. Harris and J. N. Culver, “Preparation of silica stabilized Tobacco mosaic virus templates for the production of metal and layered nanoparticles,” *J. Colloid Interface Sci.*, **332**(2), 402-407 (2009).
62. M. Z. Hu, L. Khatri and M. T. Harris, “Monodispersed Ultrafine Zeolite Crystal Particles by Microwave Hydrothermal Synthesis,” *Ceramic Transactions*, **208**, 91-109 (2009).
63. J. S. Lim, S.-M. Kim, S. Y. Lee, E. A. Stach , J. N. Culver and M. T. Harris, “Quantitative Study of Au(III) and Pd(II) Ion Biosorption on Genetically Engineered Tobacco Mosaic Virus,”*J. Colloid Interface Sci*, **342**, 455-461 (2010).
64. J. S. Lim, S. M. Kim, S. Y. Lee, E. A. Stach, J. N. Culver and M. T. Harris, “Formation of Au/Pd Alloy Nanoparticles on TMV, *Journal of Nanomaterials*, **2010**( Article ID 620505), 6 pages **(**2010).
65. Q. Zhu, L. S. Taylor and M. T. Harris, “Evaluation of the Microstructure of Semicrystalline Solid Dispersions,” *Molecular Pharmaceutics*, **7**, 1291-1300 (2010).
66. P. P. Bhat, S Appathurai, M. T. Harris, M. Pasquali, G. H. McKinley, and O. A. Basaran, “Formation of Beads-on-a-String Stuctures During Breakup of Viscoelastic Filaments,” *Nature Physics*, **6**(8), 625-631 (2010).
67. J. S. Lim, S. M. Kim, S. Y. Lee, E. A. Stach, J. N. Culver and M. T. Harris, “Biogenic Aqueous-Phase Palladium Crystallization in the Absence of External Reducing Agents,” *Nanoletters*, **10**(10), 3863-3867 (2010).
68. J.S. Lim, S.M. Kim, S.Y. Lee, E.A. Stach, J.N. Culver, and M. T. Harris “Surface Functionalized Silica as a Toolkit for Developing Aqueous Phase Palladium Mineralization on Thiol Moiety in the Absence of External Reducing Agents,” *Journal of Colloids and Interface Science*, **356**(1), 31-36 (2011).
69. Y. Y. Zhao, F. Hu, J. J. Evans, and M. T. Harris, “Study of Sol-Gel Transition in Calcium Alginate System by Population Balance Modeling,” *Chemical Engineering Science*, **66**(5), 848-858 (2011).
70. P.F. Sung, Y.L. Hsieh, K. Angonese, D. Dunn, R.J. King, R. Machbitz, A. Christianson, W.J. Chappelll, L.S. Taylor and M. T. Harris, “Complex Dielectric Properties Measurements of Microcrystalline Cellulose (MCC) and Anhydrous Lactose Powders Using A Microwave-Based Open Reflection Resonator Sensor,” *J. Pharmaceutical Sci,* **100**(7), 2920-2934*.* (2011).
71. Q. Zhu, M. T. Harris, and L. S. Taylor, “Time-resolved SAXS/WAXS study of the phase behavior and microstructural evolution of drug/PEG blends”, *Molecular Pharmaceutics*, **8**(3), 932-939(2011).
72. S.Y. Lee, J.S. Lim, and M. T. Harris, “Syntheses and Applications of Virus-Based Hybrid Nanomaterials,” *Bioengineering and Biotechnology* **109**(1), 16-30 (2012).
73. Q. Zhu, M. T. Harris and L. S. Taylor, “Modification of Crystallization Behavior in Drug/Polyethylene Glycol Solid Dispersions,” *Molecular Pharmaceutics*, **9**(3), 546-553 (2012).
74. J. D. Paulsen, J. C. Burton, S. R. Nagel, S. Appathurai, M. T. Harris, and O. A. Basaran, “The initial regime of coalescence: the inexorable resistance of inertia.” *PNAS*, **109**(18), 6857-6861 (2012).
75. P. P. Bhat, S. Appathurai, M. T. Harris, M. Pasquali, and O. A. Basaran, “On self-similarity in the drop-filament corner region formed during pinch-off of viscoelastic fluids.” *Phys. Fluids*, **24**, 083101 (2012); doi: 10.1063/1.4745179.
76. J. Austin, S. Rodriquez, P.F. Sung and M. T. Harris, “Utilizing Microwaves for the Determination of Moisture Content Independent of Density,” *Powder Technology*, **236**, 17-23 (2013); doi: 10.1016/j.powtec.2012.06.039.
77. A. S. Freer, L. Guarnaccio, K. Wafford, J. Smith, J. Steilberg, J. N. Culver, M. T. Harris, “Surface Mineralization and Characterization of Palladium Nanoparticles on Biotemplates,” *Journal of Colloids and Interface Science*, **392**, 213-218(2013); doi: 10.1016/j.jcis.2012.09.072.
78. H. Hsu, S. Toth, G. Simpson, L.S. Taylor and M. T. Harris, “Effect of Substrates on Naproxen\Polyvinylpyrrolidone Solid Dispersions Formed via the Drop Printing Technique,” *Journal of Pharmaceutical Sciences*, **102**(2), 638-648(2013); doi: 10.1002/jps.23397.
79. Q. Zhu, S. Toth, G. Simpson, H. Hsu, L.S. Taylor and M. T. Harris, “Crystallization and dissolution behavior of naproxen/polyethylene glycol solid dispersions”, *Journal of Physical Chemistry B,* **117(5)**, 1494-1500 (2013).
80. R.T. Collins, K. Sambath, M.T. Harris, and O.A. Basaran, “Universal Scaling Laws for the Disintegration of Electrified Drops,” *PNAS*, **110**(13), 4905-4910 (2013).
81. J. Austin, A. Gupta, R. McDonnell, G.V. Reklaitis, and M.T. Harris, “The Use of Near Infrared and Microwave Resonance Sensing to Monitor a Continuous Roller Compaction Process,” *Journal of Pharmaceutical Sciences*, **102**(6), 1895-1904 (2013).
82. J. Austin, and M. T. Harris, “On-line Monitoring of the Bulk Density and the Moisture Content of Rapidly Flowing Microcrystalline Cellulose Using a Microwave Resonance Sensor”, *Sensors*, **14**(3), 821-828 (2014); doi: 10.1109/JSEN.2013.2287991.
83. L. Hirshfield, A. Giridhar, L. S. Taylor, M. T. Harris, G. V. Reklaitis,“Dropwise Additive Manufacturing of Pharmaceutical Products for Solvent-Based Dosage Forms,” *Journal of Pharmaceutical Sciences*, **103 (2)**, 496-506 (2014).
84. J. Austin, A. Gupta, R. McDonnell, G. V. Reklaitis, M. T. Harris, “A Novel Microwave Sensor to Determine Particulate Blend Composition On-line,” *Analytica Chimica Acta*, **819**, 82-93 (2014); doi: 10.1016/j.aca.2014.02.016.
85. H. Hsu, and M. T. Harris, “Impact of Surface Protonation on Crystallization,” *Journal of Chemical Engineering and Chemistry Research*, **1**(3), 147-153 (2014)..
86. H. Hsu, O. Adigun, L. S. Taylor, S. Murad, and M. T. Harris, “Crystallization of Acetaminophen on Chitosan Films Blended with Different Acids,” *Chemical Engineering Science,* **126,** 1-9 (2015), DOI:10.1016/j.ces.2014.10.046.
87. O. Adigun, A. S. Freer, J. T. Miller, B. Kim, L. S Loescsh-Fries, and M. T. Harris, “Mechanistic Study of the Hydrothermal Reduction of Palladium on the Tobacco Mosaic Virus,” *Journal of Colloid and Interface Science*, **450**, 1-6(2015).
88. A. Freer, C. Gilpin, L. Mueller and M. T. Harris, “A Novel Method to Determine the Resistance of Biotemplated Nanowires.” *Chemical Engineering Communications*, **202** (9), DOI: 10.1080/00986445.2014.912637 (2015).
89. A. Gupta, J. S. Austin, S. Davis, M. Harris, and G. V. Reklaitis, “A Novel Microwave Sensor for Real-Time Online Monitoring of Roll Compacts of Pharmaceutical Powders Online – A Comparative Case Study with NIR,” *Journal of Pharmaceutical Sciences*, **104** (5), 1787-1794 (2015).
90. N. R. Devlin, K. Loehr and M. T. Harris, “The Separation of Two Different Sized Particles in an Evaporating Droplet,” *AIChE J*, **61** (10), 3547-3556(2015).
91. H. Hsu, S. Toth, G. Simpson and M. T. Harris, “Drop Printing of Pharmaceuticals: Effect of Molecular Weight on PEG Coated-NAP/PEG Solid Dispersions,” *AIChE Journal*, **61** (12), 4502-4508 (2015).
92. N. Devlin, K. Loehr, and M. T. Harris, “The Importance of Gravity in Droplet Evaporation: A comparison of Pendant and Sessile Drop Evaporation with Particles,” *AIChE J.*, **62**(3), 947-955(2016).
93. O. Adigun, G. Novikova; E. L Retzlaff-Roberts; B.S. Kim; J. T Miller, L.S. Loesch-Fries, and M. T. Harris, “Decoupling and Elucidation of Surface-driven Processes during Inorganic Mineralization on Virus Templates,” *Journal of Colloid and Interface Science,* **483**, 165-176 (2016).
94. S. S. Thete, C. Anthony, P. Doshi, M. T. Harris and O. A. Basaran, “Self-Similarity and Scaling Transitions During Rupture of Thin Free Films of Newtonian Fluids,” *Physics of Fluids*, **28**(9), 092101 (Doi: 10.1063/1.4961549) (2016).
95. O. Adigun, A. Freer, B. Boudouris, and M. T. Harris, “Bio-inspired Systems for Fabricating Nanocircuits, A Case Study,” accepted to Frontiers of Nanotechnology (August 2015).
96. O. Adigun, E. L Retzlaff-Roberts; G. Novikova; L. Wang; B.S. Kim; J. Ilavsky; J. T Miller, L.S. Loesch-Fries, and M. T. Harris, “BSMV as a Novel Biotemplate for Palladium Nanomaterial Synthesis,” accepted for publication in *Langmuir* (January 2017) DOI 10.1021/acs.langmuir.6b03341.
97. S. Hemmati, D. P. Barkey, L. Eggleston, B. Zukas, N. Gupta and M. T. Harris, “Silver Nanowire Synthesis in a Continuous Millifluidic Reactor,” accepted to *Electrochemical Society Journal* (January 2017).
98. C. R. Anthony, P. M. Kamat, S. S. Thete, J. P. Munro, J. R. Lister, M. T. Harris and O. A. Basaran, “Scaling Laws and Dynamics of Bubble Coalescence,” submitted to *Physical Review Fluds* (November 2016).

**B. Books Reviews, Other Articles and Notes (These are refereed articles.)**

1. D. Green, M. Z-C. Hu, and M. T. Harris, “Dynamics of Nanophase Formation During Stober Silica Synthesis,” Silica 2001, Mulhouse, France (September 2-6, 2001).
2. M. Li, N. C. Liu, N. M. Dingle and M. T. Harris, “Micropatterning of Nanoparticles During Evaporation of Organosol Drops and Bridges,” Silica 2001, Mulhouse, France (September 2-6, 2001).
3. J.D. Jones, P. Meckl, M. T. Harris, M. Cox, O. Cekic, M. Okos, O. Campanella, N. Houze, J. Litster, N. Mosier, D. Radcliffe, B. Tao, D. Delaurentis, S. Brophy, K. Howell, M. Okutsu, A. Penner, A. Wilson and L. Jamieson, “Purdue’s Engineer of 2020: The Journey,” AC 2009-1072, ASEE Annual Conference, Austin, Texas (2009).
4. P. Meckl, M. Williams, C. Percifield, M. Cardella, M. T. Harris, and L. H. Jamieson, “Taking Stock: Progress Towards Educating the Next Generation of Engineers,” ASEE Annual Conference, San Antonio, Texas (2012).
5. L.S. Davis, D.L. Grubbe, R.L. Cutshall, S.J. Swanson, M. T. Harris and A. Varma, “Process Safety Management Course Development,” ASEE Annual Conference, San Antonio, Texas (2012).
6. T. Ortiz, B. M. Holloway, M. T. Harris, An. R. Pluckebaum, L. H. Jamieson, “Experiential Learning: Student Participation and Future Engagement,” ASEE Annual Conference, Seattle, Washington (2015)
7. K. J. Rodgers, B. W. Boudouris, H. A. Diefes-Dux, M. T. Harris, “Integrating Exposure to Nanotechnology through Project Work in a Large First-Year Engineering Course,” ASEE Annual Conference, New Orleans, Louisiana

## Refereed Books

1. **Books authored. N/A**
2. **Books edited. N/A**
3. **Chapters in books (refereed book chapters)**
4. C. H. Byers, and M. T. Harris, “A Dynamic Laser-Light Scattering Study of Solvent Effects in Silica Synthesis by Alkoxide Hydrolysis,” in Ultrastructure Processing of Advanced Ceramics, editors J. D. MacKenzie and D. R. Ulrich (John Wiley & Son, New York, 1988), 843-853.

**D. Unrefereed Publications**

1. M. T. Harris\*, R. L. Jolley, G. E. Oswald, and J. C. Rose, Wet Oxidation of Phenol and Naphthalene (as a Surrogate PAH) in Aqueous and Sludge Solution: Application to Coal Conversion Wastewater and Sludge Treatment, ORNL/TM-8576 (1983).
2. C. H. Brown, G. E. Oswald, M. T. Harris, and S. G. DeCicco, "Studies of Wastewater Treatment Polishing Processes at the H-Coal Pilot Plant Site in Catlettsburg, Kentucky," proceedings of the 1983 Triangle Conference on Environmental Technology, Chapel Hill, N.C., April 5-7, 1983.
3. C. H. Brown, G. E. Oswald, M. T. Harris, and S. G. DeCicco, Development and Evaluation of Wastewater Treatment Processes at the H-Coal Site in Catlettsburg, Kentucky, Volume II: Wastewater Treatment Polishing Studies, ORNL/TM-8312/V2.
4. C. H. Brown, M. T. Harris, R. D. Roop, and S. G. DeCicco, Evaluation of Wastewater Treatment Polishing Processes at the Advanced Coal Liquefaction R&D Facility in Wilsonville, Alabama, ORNL/TM-8961.
5. A. L. Rivera, T. L. Donaldson, R. K. Genung, M. T. Harris, and C. W. Hancher, The Loves Creek Anaerobic, Upflow (ANFLOW) Pilot Plant: Design and Start-Up, ORNL/TM-8828 (1984).
6. M. T. Harris\*, T. L. Donaldson, R. K. Genung, A. L. Rivera, and C. W. Hancher, The Loves Creek Anaerobic, Upflow (ANFLOW) Pilot Plant: Performance Summary, ORNL/TM-9317, EPA/600/2-85-040 (1985).
7. M. T. Harris\* and C. H. Byers, An Orthogonal Collocation Approach to Modeling Multicomponent Adsorption in Carbon Beds, ORNL/TM-10735 (May 1989).
8. M. T. Harris\* and C. H. Byers, An Advanced Technique for Interfacial Tension Measurement in Liquid-Liquid Systems, ORNL/TM-10734 (November 1989).
9. D. W. DePaoli, M. T. Harris, I. Morgan and M. A. Ally, Testing and Evaluation of Electrokinetic Decontamination of Concrete, DOE/ORO/2036, September 27, 1995.
10. M. Li and M. T. Harris, “Modeling the Synthesis of Porous Spherical Shells and Microspheres of Zirconia by Electrodispersion Precipitation,” Advanced Technologies for Particle Processing, **Vol. 1**, pp. 7-13, AIChE, November 15, 1998.
11. N. C. Liu, X. Zhang, and M. T. Harris, “Deposition and Evaporation of Hydrosol and Organosol Drops on Smooth Substrate,” Advanced Technologies for Particle Processing, AIChE, November 15, 1998.
12. K. Srinivasan, S. Cular, V. R. Bhethanabotla, S. Y Lee, M. T. Harris, J. N. Culver, “Palladium Nanoparticle Coated Tobacco Mosaic Virus Sensing Layer Based Surface Acoustic Wave Hydrogen Sensor,” TH002d, AIChE Annual Meeting, October 31, 2005.
13. S. Y. Lee and M. T. Harris, “Surface Modification of Magnetic Nanoparticles: Characterization and Colloidal Stability in Polar Solvents,” 08D05g, AIChE Annual Meeting, November 1, 2005.
14. E. S. Royston, J. N. Culver and M. T. Harris, “Silica Coating on a Bionanorod,” 01C19c, AIChE Annual Meeting, November 1, 2005.
15. E. Widjaja and M. T. Harris, “A Fully Coupled Time Dependent 3-d Axisymmetric Simulation of an Evaporating Sessile Drop,” 10D01b, AIChE Annual Meeting, October 31, 2005.
16. Y. Zhao, Y.Y. Won and M. T. Harris, “Calcium Alginate Gel Beads Synthesis by Electrodispersion in Vegetable Oils,” 15015s, AIChE Annual Meeting, November 2, 2005.

## Talks, Abstracts and Other Professional Papers Presented

1. ***Invited Presentations***

##### Invited Academic Presentations

1. M. T. Harris, "Ultrafine Powder Synthesis by Homogeneous Precipitation and Electrodispersion," (invited seminar) Department of Chemical Engineering, Virginia Technical Institute and State University, (August 1992).
2. M. T. Harris, "The Synthesis of Metal Hydrous Oxide Particles by Multiphase Electrodispersion," (Invited Seminar), Department of Materials Science and Engineering, University of Tennessee, Knoxville, Tennessee, (February 1993).
3. M. T. Harris, "The Synthesis of Metal Hydrous Oxide Particles by Multiphase Electrodispersion," (Invited Seminar), Department of Chemical Engineering, University of Alabama, Tuscaloosa, Alabama, (February 1993).
4. M. T. Harris, "Ultrafine Powder Synthesis by Homogeneous Precipitation," Group Meeting, Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, Minnesota, (March 1993).
5. M. T. Harris, "Ultrafine Powder Synthesis by Homogeneous Precipitation and Electrodispersion," Department of Chemical Engineering, Mississippi State University, (November 1993).
6. M. T. Harris, "Metal Oxide Particles by Multiphase Electrodispersion Precipitation," Department of Materials Science and Chemical Engineering, University of Notre Dame, Notre Dame, Indiana, (November 8, 1994).
7. M. T. Harris, "Ultrafine Powder Synthesis by Electrohomogeneous Precipitation," Department of Department of Chemical Engineering, University of Tennessee, Knoxville (January 1995).
8. M. T. Harris, “Ultrafine Powder Synthesis by Electrohomogeneous Precipitation,” Department of Chemical Engineering, University of Maryland at College Park (May 1995).
9. M. T. Harris, “Small Particles, Pendant Drops and Electric Fields,” Institute for Physical Science and Technology, University of Maryland at College Park (September 7, 1995).
10. M. T. Harris, “Modeling the Electrokinetic Transport of Strontium and Cesium Through a Slab of Concrete,” Emerging Technologies in Hazardous Waste Management VIII, Special Symposium, Industrial & Engineering Chemistry Division, American Chemical Society; Birmingham, Alabama (September 9-11, 1996).
11. M. T. Harris, “Nanostructed Metal Oxide Particle by Chemical and Physicochemical Techniques,” Department of Chemical Engineering Seminar, Howard University, Washington, D.C. (February 7, 1997).
12. M. T. Harris, “Electrohydrostatics, Electrohydrodynamics and Microstructural Evolution During Electrodispersion Precipitation,” National Science Foundation CAREER Workshop, Washington D.C., January 11-12, 1999.
13. M. T. Harris, “Ultrafine Particle Synthesis by Electrohomogeneous Precipitation and Homogeneous Precipitation,” Department of Chemical Engineering, University of Virginia, Charlottesville, Virginia (September 30, 1999).
14. M. T. Harris, W. Hill and R. M. Gammon, "Using Optical Traps To Levitate Erodible Particles" NIH - Brown Bag Lunch (March 24. 2000).
15. M. T. Harris, "Stober Silica Spheres and Ring Formation During The Drying of Organosol Drops," School of Chemical Engineering, Purdue University, West Lafayette, Indiana (October 19, 2000).
16. M. T. Harris, “Micropatterning of Nanoparticles During Evaporation of Organosol Drops and Bridges,” 103rd Annual Meeting and Exposition of the American Ceramic Society, Indiana Convention Center and RCA Dome, Indianapolis, Indiana (April 24, 2001).
17. M. T. Harris, “Silica Nanosphere Formation and Their Application in Micropatterning and Nanotube Formation,” Department of Chemical Engineering, Virginia Tech University (April 19, 2001).
18. M. T. Harris, “Electrodispersion Precipitation: Theoretical and Experimental Investigations,” Department of Chemical Engineering, University of Akron (April 24, 2003).
19. M. T. Harris, “Electrodispersion Precipitation,” North Carolina A&T University, (2003).
20. M. T. Harris, “USAXS and SAXS Studies of Nanostructed Materials and NanoParticles”, National Society of Black Physicists/National Society of Hispanic Physicists, Orlando, Florida (Feb 16 – 19, 2005).
21. M. T. Harris, “Early Stage Nanoparticle Formation and the Coating of Nanoparticles on Biotemplates,” Department of Chemical Engineering and Materials Science, University of Cincinnati; Cincinnati, Ohio (May 12, 2005).
22. M. T. Harris, “Early Stage Nanoparticle Formation And Coating Or Nanoparticles On Biotemplates,” Department of Chemical Engineering and Materials Science, Steven Institute of Technology, New Jersey (November 9, 2005).
23. M. T. Harris, “Surface Mineralization, Alignment and Programmed Self-Assembly of the TMV Biotemplate,” Department of Chemical and Biomolecular Engineering, University of Tennessee, Knoxville, Tennessee (December 1, 2009).
24. M. T. Harris, “Surface Mineralization, Alignment, and Programmed-Self Assembly of the TMV Biotemplate,”Department of Chemical and Biomolecular Engineering, University of Illinois Chicago, Chicago, Illinois (March 18, 2010).
25. M. T. Harris, “Surface Mineralization of the TMV Biotemplate and the Deposition of Colloidal Particles During Sessile Drop Evaporation,” University of California – Riverside, Riverside, California (March 14, 2012).

**Invited Industrial Presentations**

1. M. T. Harris, "Technology Transfer Opportunities at the Oak Ridge National Laboratory for Nano-Particulate Materials," Nano-Particulates 94: Business Opportunities, Technologies, Markets and Applications, Monterey CA, (November 13-15, 1994).
2. M. T. Harris, “Submicron Metal Oxide Powder Synthesis,” RODEL Inc. (March 1996).
3. M. T. Harris, “Hydrosol/Organosol Synthesis, Processing and Characterization Group,” Indian Head Division, Naval Surface Warfare Division, (January 17, 1997).
4. M. T. Harris, “Particle Synthesis by Homogeneous Precipitation and Electrodispersion Precipitation,” Grace-Davidson, Columbia, Maryland (September 5, 1997)
5. M. T. Harris, “Time-Resolved Studies of Silica and Metal Oxide Particles and Gels,” Industrial Science and Technology Network, Inc., (January 10, 2000).
6. M. T. Harris, “Hydrolsols, Organosols and Multiphase Engineering Group,” Procter and Gamble, January 10, 2003.
7. ***Contributed talks, etc.***
8. M. T. Harris, I. W. Jeter, and J. M. Napier, "Denitrification of S-3 Ponds," 1985 ORO Environmental Workshop, Knoxville, Tennessee, (1985).
9. M. T. Harris, "The Application of Laser-Light-Scattering Techniques in the Study of Ceramic Powder Synthesis by the Hydrolysis of Metal Alkoxides," Workshop on Advanced Laser Technology for Chemical Measurements, Argonne, Illinois (May 9-11, 1989).
10. M. T. Harris, "The Effects of Aluminum Alkoxides on the Synthesis of Composite Powders of Alumina and Titania," Material Research Society Symposium, 1989 Spring Meeting, San Diego, California (April 24-29, 1989).
11. M. T. Harris, "The Base Catalyzed Hydrolysis and Condensation Reactions of Dilute and Concentrated TEOS Solution," presented at the Fifth International Workshop on Glasses and Ceramics from Gels, Rio de Janeiro, Brazil (August 6-10, 1989).
12. M. T. Harris, "Synthesis of Ultrapure Alumina-Titania Precursor Powders by Metal Alkoxide Hydrolysis," presented at the 1989 International Chemical Congress of the Pacific Basin Societies (PACIFICHEM '89), Honolulu, Hawaii (December 17-22, 1989).
13. M. T. Harris, "Morphology Control in Precursor Ceramic Powder Production by the Electrical Dispersion Reactor," presented at the 1990 Material Research Society Symposium, Better Ceramics Through Chemistry IV, San Francisco, CA (April 16-21, 1990).
14. M. T. Harris, "Precipitation Dynamics and Controlled Morphology of Hydrous Oxide Particle," presented at the Chemical Technology Division 1990 Annual Information Meeting, Oak Ridge National Laboratory (1990).
15. M. T. Harris, "Shapes and Stability of Drops Hanging From a Nozzle in an Electric Field," Forty-Fourth Annual Meeting of the Division of Fluid Dynamics, American Physical Society, Scottsdale, Arizona (November 1991).
16. M. T. Harris, "Modeling the Formation and Growth of Stober Spheres by the Method of Moments," 1991 AIChE Annual Meeting, Los Angeles, CA (November 17-22, 1991).
17. M. T. Harris, "Computational, Visualization and Chemistry of Electric Field-Enhanced Production of Ceramic Precursor Powders," 1992 Spring Materials Research Society Meeting, San Fransciso, CA (April 1992).
18. M. T. Harris, "Modeling the Formation and Growth of Stober Spheres by the Method of Moments," 1991 AIChE Annual Meeting, Los Angeles, CA (November 17-22, 1991).
19. M. T. Harris, "Computational, Visualization and Chemistry of Electric Field-Enhanced Production of Ceramic Precursor Powders," 1992 Spring Materials Research Society Meeting, San Fransciso, CA (April 1992).
20. M. T. Harris, "Theoretical and Experimental Investigation of the Growth of Silica and Titania Particles in Low Molecular Weight Alcohols, 1992 Spring Materials Research Society Meeting, San Francisco, CA (April 1992).
21. M. T. Harris, "Theoretical and Experimental Investigation of the Growth of Silica and Titania Particles in Low Molecular Weight Alcohols, 1992 Spring Materials Research Society Meeting, San Francisco, CA (April 1992).
22. M. T. Harris, "Mixed Titania-Zirconia Powders by Alkoxide Hydrolysis," 1992 Annual AIChE Meeting, Miami, Florida (November 1992).
23. M. T. Harris, "Ultrafine Powder Synthesis by Electrodispersion," 1992 Annual AIChE Meeting, Miami, Florida (November 1992).
24. M. T. Harris, "Mixed Titania-Zirconia Powders by Alkoxide Hydrolysis," 1992 Annual AIChE Meeting, Miami, Florida (November 1992).
25. M. T. Harris, "Ultrafine Powder Synthesis by Electrodispersion," 1992 Annual AIChE Meeting, Miami, Florida (November 1992).
26. M. T. Harris, "Synthesis of Advanced Ceramic Precursor Powders by the Electric Dispersion Reactor," Chemical Technology Information Meeting, Oak Ridge, Tennessee (June 1993).
27. M. T. Harris, "Multiphase Electrodispersion Precipitation of Zirconia Powders," 1994 Spring Materials Research Society Meeting, San Francisco, CA (April 1994).
28. M. T. Harris, "Removal of Fine Particulates by Granular Electric Bed Filtration," The 25th Annual Meeting of the Fine Particle Society, East Brunswick, NJ (July 1994).
29. M. T. Harris, "Production of Fine Ceramic Precursor Powders by Electric-Field Enhanced Emulsification Method," The 25th Annual Meeting of the Fine Particle Society, East Brunswick, NJ (July 1994).
30. M. T. Harris, "The Formation of Ultrafine-Reactive Water in Oil Emulsions by Oscillating Electric Fields," The 25th Annual Meeting of the Fine Particle Society, East Brunswick, NJ (July 1994).
31. M. T. Harris, "Silica Fibrils by Elelctrohomogeneous Precipitation," 1994 Annual AIChE Meeting, San Francisco, CA (November 15, 1994).
32. M. T. Harris, "Porous Spherical Shells and Microspheres by Electrodispersion Precipitation," 1994 Fall Materials Research Society Meeting, Boston, Mass. (November 28-December 2, 1994).
33. M. T. Harris, D. W. DePaoli and M. R. Ally, “Modeling the Electrokinetic Decontamination of Concrete,” Ninth Symposium on Separation Science and Technology for Energy Applications, Gatlinburg, Tennessee (October 22-26, 1995).
34. D. W. DePaoli, M. T. Harris, I. L. Morgan and M. R. Ally, “Investigation of Electrokinetic Decontamination of Concrete,” ,” Ninth Symposium on Separation Science and Technology for Energy Applications, Gatlinburg, Tennessee (October 22-26, 1995).
35. R. Collins, W. Sisson and M. Harris, “Preparation of Ultrafine Hydrous Metal Oxide Particles with an Electric Dispersion Reactor (EDR) and Particle Characterization,” 1995 AIChE Annual Meeting, Miami Beach, Florida (November 12-17, 1995).
36. D. DePaoli, M. T. Harris, I. Morgan and M. Ally, “Electrokinetic Decontamination of Concrete,” 1995 AIChE Annual Meeting, Miami Beach, Florida (November 12-17, 1995).
37. A. Singhal, L. Toth and M. Harris, “Study on the Hydrolysis and Condensation Mechanisms of Zirconium and Titanium Alkoxides in Ethanol Solution,” 1995 AIChE Annual Meeting, Miami Beach, Florida , (November 12-17, 1995).
38. M. Harris and C. H. Byers, “Effect of Percent Conversion of TEOS on the Formation of Silica Fibrils,” 1995 AIChE Annual Meeting, 1995, Miami Beach, Florida (November 12-17).
39. J. Zielke, M. Hu, J. Lin, C. H. Byers and M. T. Harris, “A Rapid Mixing Technique to Monitor the Hydrolysis and Condensation of Zirconum Butoxides and Titanium Ethoxides,” 38a, 1996 AIChE Annual Meeting, Chicago, Illinois (November 10-15, 1996).
40. M. Hu, J. Lin, C. H. Byers, J. Zielke and M. Harris, “Nucleation and Growth Kinetics for Synthesis of Nanometric Zirconia Particles,” 106j, 1996 AIChE Annual Meeting, Chicago, Illinois (November 10-15, 1996).
41. X. Zhang and M. Harris, “Electrohydrostatics of Two Conducting Drops Subject to an Electric Field,” 125i, AIChE Annual Meeting, Chicago Illinois (November 10-15, 1996).
42. H. Boukari, J. Lin, and M. Harris, “SAXS and QELS Studies of Nanostructure Dynamics During the Base-Catalyzed Hydrolysis of TEOS,” 38g, 1997 AIChE Annual Meeting, Los Angeles, California (November 16-21, 1997).
43. K. Lee, A. Sathyagal, M. Harris and A. McCormick, “Modeling Nucleation and Aggregation in Sol-Gel Particle Productions,” 157g, 1997 AIChE Annual Meeting, Los Angeles, California (November 16-21, 1997).
44. M. Harris and M. Hu, “Modeling the Aggregative Growth of Zirconia Nanoparticles,” 157i, 1997 AIChE Annual Meeting, Los Angeles, California (November 16-21, 1997).
45. M. Li and M. T. Harris, Modelling the Synthesis of Porous Spherical Shells and Microspheres of Zirconia by Electrodispersion Precipitation,” Paper 19e, AIChE 1998 Annual Meeting, Miami Beach, Florida (November 15-20, 1998).
46. K. Brown and M. T. Harris, “An FTIR and 29Si NMR Analysis of the Reaction of TEOS and Formic Acid,” Paper 21a, AIChE 1998 Annual Meeting, Miami Beach, Florida (November 15-20, 1998).
47. H. Boukari, G. G. Long, J. S. Lin and M. T. Harris, “Small Angle X-ray Scattering of the Formation and Growth of Stober Silica Particles,” Paper 18I, AIChE 1998 Annual Meeting, Miami Beach, Florida (November 15-20, 1998).
48. N. Liu, and M. T. Harris, “Deposition and Evaporation of Hydrosol and Organosol Drops on Smooth Substrates,” Paper 30g, AIChE 1998 Annual Meeting, Miami Beach, Florida (November 15-20, 1998).
49. D. L. Green, H. Boukari and M. T. Harris, “Effect of Salt and Solvent on Nanostructure Dynamics During Stober Silica Synthesis,” Paper 187d, AIChE 1999 Annual Meeting, Dallas, Texas (November 1-7, 1999).
50. M. Li and M. T. Harris, "Synthesis of Porous Metal Oxide Spherical Shells and Microspheres by Electrodispersion Precipitation," Paper 102b, AIChE 2000 Spring Meeting, Atlanta, Georgia (March 5-9, 2000).
51. L. Fang and M. T. Harris, "Electrohydrstatics of Pendant Drops in a Disk/Nozzle Configuration," Paper 106l, AIChE 2000 Spring Meeting, Atlanta, Georgia (March 5-9, 2000).
52. M. T. Harris, "Finite Element and Orthogonal Collocation Techniques for Solving the Electrokinetic Equations Governing the Transport of Radionuclides Through a Concrete Disk," Paper 28a, AIChE 2000 Spring Meeting, Atlanta, Georgia (March 5-9, 2000).
53. D. Green, M. Z-C. Hu and M. T. Harris, "Dynamics of Nanophase Formation During the Base-Catalyzed Hydrolysis of TEOS," Paper 16c, AIChE 2000 Annual Meeting, Los Angeles, California (November 12-17, 2000).
54. N. Dingle and M. T. Harris, "Numerical Technique for Obtaining Surface/Interfacial Tension from Pendant or Sessile Drop Profiles," Paper 74g, AIChE 2000 Annual Meeting, Los Angeles California (November 12-17, 2000).
55. M. T. Harris and T. Terry, "Metal Oxide Particles by Electrodispersion Precipitation," Paper 22r, AIChE 2000 Annual Meeting, Los Angeles, California (November 12-17, 2000).
56. K. Brown and M. T. Harris, "Chemistry and Nanostructure Formation During TEOS/Formic Acid Reactions," paper 7a, AIChE 2000 Annual Meeting, Los Angeles, California (November 12-17, 2000).
57. M- F. Li, N-C. Liu, N. M. Dingle and M. T. Harris, "Evaporation of Organosol Drops on Smooth Substrates," paper , AIChE 2000 Annual Meeting, Los Angeles, California (November 12-17, 2000).
58. L. Khatri, M. Z.-C. Hu and M. T. Harris, "Zeolite Nanocrystals Evolution During Hydrothermal Templated Synthesis," Paper 205g, AIChE 2000 Annual Meeting, Los Angeles, California (November 12-17, 2000).
59. D. Green, M. Z-C. Hu, and M. T. Harris, “Dynamics of Nanophase Formation During Stober Silica Synthesis,” Silica 2001, Mulhouse, France (September 2-6, 2001).
60. M. Li, N. C. Liu, N. M. Dingle and M. T. Harris, “Micropatterning of Nanoparticles During Evaporation of Organosol Drops and Bridges,” Silica 2001, Mulhouse, France (September 2-6, 2001).
61. L. Khatri, M. T. Harris, and M. Z. Hu, “Effect of Microwave-Induced Heating on the Zeolite Nucleation and Growth Mechanisms,” Paper 192c, AIChE 2001 Annual Meeting, Reno, Nevada (November 4-9, 2001).
62. M. Harris, M. Li, and K. Kiger, “Spray Characterization of an Ultrasonic Atomizer Under the Influence of an Applied Electric Field,” Paper 194b, AIChE 2001 Annual Meeting, Reno, Nevada (November 4-9, 2001).
63. M. Harris, N. Dingle, “Dynamic Interfacial Tension of Aqueous Salt Solution/Vegetable Oil Systems,” Paper 148o, AIChE 2001 Annual Meeting, Reno, Nevada (November 4-9, 2001).
64. M. Harris, N. Dingle, M. Li, “Ring Formation Mechanism of Evaporation of Organosol Drops on Smooth Substrates,” Paper 148p, AIChE 2001 Annual Meeting, Reno, Nevada (November 4-9, 2001).
65. T. Terry and M. Harris, Environmentally-Benign Electrodispersion Precipitation Process for Metal Oxide Particle Synthesis,” Paper 88b, AIChE 2001 Annual Meeting, Reno, Nevada (November 4-9, 2001).
66. T. Terry and M. T. Harris, “Metal Oxide Particle Synthesis by Electric-Field Induced Water-In-Oil Emulsions,” AMC.2-C-08, American Ceramic Society 104th Annual Meeting and Exposition, Saint Louis, Missouri (April 28-May 1, 2002).
67. D. Green and M. T. Harris, “Early Stage Silica Formation in Methanol and Ethanol,” Paper AMC.2-E-02-2002, American Ceramic Society 104th Annual Meeting and Exposition, Saint Louis, Missouri (April 28-May 1, 2002).
68. L. Khatri, M. T. Harris and M. Z. Hu, “Silica Gel Crystallization Kinetics During Templated Mediated Hydrothermal Zeolite Synthesis,” AMC.2-E-03, American Ceramic Society 104th Annual Meeting and Exposition, Saint Louis, Missouri (April 28-May 1, 2002).
69. S.-Y. Lee, E. Royston, J. N. Culver and M. T. Harris, “Colloidal Stability of Tobacco Mosaic Virus in Water and Alcohol Mixture,” paper 11h, AIChE 2002 Annual Meeting, Indianapolis, Indiana.
70. D. L. Green and M. T. Harris, “Dynamics of Nanophase Formation During Stober Silica Synthesis,” paper 136b, AIChE 2002 Annual Meeting, Indianapolis, Indiana.
71. L. Khatri, M. T. Harris and M. Z. Hu, “Elucidation of Nucleation and Growh Mechanisms during Liquid Phase Zeolite Nanoparticle Synthesis,” paper 207d, AIChE 2002 Annual Meeting, Indianapolis, Indiana.
72. R. T. Collin, and M. T. Harris, “Porous Metal Oxide Particles by Electrodispersion Precipitation,” paper 207h, AIChE 2002 Annual Meeting, Indianapolis, Indiana.
73. T. L. Terry and M. T. Harris, “Viscous Effects on Electrodispersion Precipitation,” paper 207i, AIChE 2002 Annual Meeting, Indianapolis, Indiana.
74. N. Dingle, A. U. Chen, O. A. Basaran and M. T. Harris, “A Novel Computational Approach for Determining the Surface/Interfacial Tension of Axisymmetric Pendant and Sessile Drops,” 274d, AIChE 2002 Annual Meeting, Indianapolis, Indiana.
75. L. Khatri, M. Z.-C. Hu, and M. T. Harris, “Room Temperature Aging Effects on Nucleation and Growth Mechanism(s) of Zeolite Nanoparticles,”

###### ACerS Annual Meeting, April 28, 2003, Nashville, Tennessee.

1. T. L. Terry and M. T. Harris, “Electrodispersion Precipitation in Vegetable Oil: Temperature, Compositional and Geometric Effects,” paper 55i, AIChE Annual Meeting, November 20, 2003.
2. S. Y. Lee, J. N. Culver, and M. T. Harris, “Preparation of Nanorods and Nanotubes from Tobacco Mosaic Virus Templates,” paper 266e, AIChE Annual Meeting, November 20, 2003.
3. N. Dingle, K. Tjiptowidjojo, O. A. Basaran and M. T. Harris\*, "A Finite Element Based Algorithm for Determining the Interfacial Properties from Pendant and Sessile Drop Profiles", Paper 357, Session: General Papers in Colloid and Surface Science, 78th ACS Colloid and Surface Science Symposium, Yale University, New Haven, CT, June 20-23, 2004.
4. T. L. Terry, M. Traylor, Y. Zhao and M. T. Harris, “Nanostructured Microparticles by Electrodispersion in Environmentally-Benign Oils,” paper 276f, AIChE Annual Meeting, November 10, 2004.
5. N. Dingle, K. Tjiptowidjojo, O. A. Basaran and M. T. Harris, “A Finite Element Based Algorithm for Determining Interfacial Properties from Pendant and Sessile Drop Profiles,” paper 435c, AIChE Annual Meeting, November 11, 2004
6. S. Y. Lee, E. S. Royston, J. Choi, D. B. Janes, J. N. Culver and M. T. Harris, “Metal Cluster Deposition on Genetically Engineered Tobacco Mosaic Virus Biotemplates,” paper 599a, AIChE Annual Meeting, November 12, 2004.
7. K. Srinivasan, S. Cular, V. R. Bhethanabotla, S. Y Lee, M. T. Harris, J. N. Culver, “Palladium Nanoparticle Coated Tobacco Mosaic Virus Sensing Layer Based Surface Acoustic Wave Hydrogen Sensor,” TH002d, AIChE Annual Meeting, October 31, 2005.
8. S. Y. Lee and M. T. Harris, “Surface Modification of Magnetic Nanoparticles: Characterization and Colloidal Stability in Polar Solvents,” 08D05g, AIChE Annual Meeting, November 1, 2005.
9. E. S. Royston, J. N. Culver and M. T. Harris, “Silica Coating on a Bionanorod,” 01C19c, AIChE Annual Meeting, November 1, 2005.
10. E. Widjaja and M. T. Harris, “A Fully Coupled Time Dependent 3-d Axisymmetric Simulation of an Evaporating Sessile Drop,” 10D01b, AIChE Annual Meeting, October 31, 2005.
11. Y. Zhao, Y. Y. Won, and M. T. Harris, “Calcium Alginate Gel Beads Synthesis by Electrodispersion in Vegetable Oils,” 15015s, AIChE Annual Meeting, November 2, 2005.
12. E. Widjaja and M. T. Harris, “A Finite Element Study of the Time Dependent 3-D Axisymmetric Sessile Droplet Evaporation Dynamics: the Fluid Flow Application for Particles Deposition, 70ax, AIChE Annual Meeting, April 24, 2006.
13. Y. Zhao, Y. Y. Won, and M. T. Harris, “Synthesis of Calcium Alginate Gel Beads by Electrodispersion in Vegetable Oil,” 164e, AIChE Annual Meeting, April 26, 2006.
14. E. S. Royston, J. N. Culver and M. T. Harris, “Dual-Layer Deposition on Tobacco Mosaic Virus,” 521e, AIChE Annual Meeting, November 16, 2006.
15. R. T. Collins, M. T. Harris and O. A. Basaran, “Numerical Analysis of the Nonlinear Deformation and Breakup of Semi-Insulating Electrified Liquid Jets”, 617a, AIChE Annual Meeting, November 17, 2006.
16. Y. Zhao, Y.Y. Won, and M. T. Harris, “Preparation of Calcium Alginate Microbeads by Electrodispersion for Protein Drug Controlled Release,” 80g, AIChE Annual Meeting, November 13, 2006.
17. E. Widjaja, J. T. Sloan and M. T. Harris, “Controlled Deposition of Nanoparticles on a Solid Substrate: Numerical and Experimental Investigation of the Effect of Fluid Flow Both in the Absence and Presence of External Electric Field,” 80d, AIChE Annual Meeting, November 13, 2006.
18. Patrick Oglesby and M. T. Harris, “Modeling Electrokinetic Decontamination of Concrete by Petrov-Galerkin Finite Element Method,” 329p, AIChE Annual Meeting, November 6, 2007.
19. Y. Zhao, Y. Won and M. T. Harris, “Study of Calcium Alginate Sol-Gel Transition by Population Balance Model,” 542d, AIChE Annual Meeting, November 8, 2007.
20. J. S. Lim, S. Y. Lee, J. N. Culver, and M. T. Harris, “Gold-Nanoparticle Conjugation on Genetically Engineered Tobacco Mosaic Virus,” 638d, AIChE Annual Meeting, November 8, 2007.
21. F. Li, Y. Y. Zhao and M. T. Harris, “Evaluation of Sodium Alginate for Protein Drug Delivery,” 04I06, Student Poster Competition, AIChE Annual Meeting, November 17, 2008.
22. Q. Zhu, J. Beard, L. Taylor and M. T. Harris, “Crystallization Behavior and Microstructural Characterization of Drug-Polyethylene Glycol Dispersions, 187h, AIChE Annual Meeting, November 17, 2008.
23. J. S. Lim, J. N. Culver and M. T. Harris, “Gold and Palladium Deposition on the Genetically Engineered Tobacco Mosaic Virus with Controlled Metal Loading,” 304c, AIChE Annual Meeting, November 18, 2008.
24. R. T. Collins, J. J. Jones, M. T. Harris and O. A. Basaran, “Electrohydrodynamic Tip-Streaming and Emission of Charged Drops from Liquid Cones,” 417c, AIChE Annual Meeting, November 19, 2008.
25. P. F. Sung, T. T. Hall and M. T. Harris, “Determining the Density and Moisture Content of Powders Using Microwave Dielectric Spectroscopy,” 484a, AIChE Annual Meeting, November 19, 2008.
26. J.S. Lim, S.Y Lee, J.N. Culver and M.T. Harris, “Investigation of Palladium Sorption On the Hydroxyl, Sulfhydryl, and Amine Functionality to Improve the Palladium Deposition On the Genetically Engineered Tobacco Mosaic Virus,” 624d, AIChE Annual Meeting, November 12, 2009.
27. M.T. Harris, S.Appathurai, P. Bhat and O. A. Basaran, “Dynamics of Contracting Visoelastic Filaments,” GH.00010, APS Meeting, November 23, 2009.
28. P. Bhat, S. Appathurai, M. Harris, M. Pasquali, G. McKinley and O. A. Basaran, “Formation of Beads-on-a-String Structures during the Pinch-Off of Viscoelastic Filaments,” HN.00004, APS Meeting, November 23, 2009.
29. H. Gao, Q. Xu, M. Harris, O. Basaran, “Production of Ultra-SmallInk Jet Drops Using Drop-on-Demand (DOD) Drop Formation,” GH.00007, APS Meeting, November 23, 2009.
30. K. Sambath, P. McGough, S. Appathurai, P. Bhat, M. Harris, and O. Basaran, “Effect of Initial Shape on Contraction Dynamics of Newtonian Filaments,” GH.00012, APS Meeting, November 23, 2009.
31. S. Appathurai, P. Bhat, M. Harris, M. Pasquali, and O. Basaran, “On the Evolution of Drop-Filament Corner Region During the Pinch-Off of Viscoelastic Fluids,” HN.00005, APS Meeting, November 23, 2009.
32. C. Pommer, R. Suryo, H. Subramani, M. Harris, and O. Basaran, “Scaling in Two-Fluid Pinch-Off,” GH.00004, APS Meeting, November 23, 2009.
33. P. McGough, K. Sambath, S. Appathurai, P. Bhat, M. Harris, and and O. Basaran, “Contraction of Assymetric Newtonian Liquid Filaments,” GH.00001, APS Meeting, November 23, 2009.
34. Q. Zhu, L. Taylor and M. Harris, “Solid-State Structure of Drug/Polyethylene Glycol Dispersions,” AAPS Meeting, November 8-11, 2009.
35. J. S. Lim, S. M. Kim, S. Y. Lee, E. A. Stach, J. N. Culver and M. T. Harris, “Palladium Complexation on Amine/Thiol Moieties, Leading to the Full Layered Growth on the Tobacco Mosaic Virus ,” MRS Spring Meeting, April 9, 2010.
36. J. S. Lim, J. N. Culver, and M. T. Harris, “Biogenic Aqueous-Phase Palladium Mineralization in the Absence of External Reducing Agents,”paper 150f, AIChE Annual Meeting, November 8, 2010.
37. P.F. Sung and M. T. Harris, “Deposition Patterns from Drying Colloidal Suspension Drops,” paper 174b, AIChE Annual Meeting, November 8, 2010.
38. Q. Zhu, M. T. Harris and L. Taylor, “Crystallization Behaviour and Structural Characterization of Drug/Polymer Solid Dispersions,” paper 306a, AIChE Annual Meeting, November 9, 2010.
39. P.F. Sung, Y.L. Hwieh, L. Taylor and M. T. Harris, “Measurement of Dielectric Properties of Microcrystalline Cellulose (MCC),” paper 211g, AIChE Annual Meeting, November 9, 2010.
40. Q. Zhu, L. Taylor and M. T. Harris, “Evaluation of the Microstructure of Semicrystalline Solid Dispersions,” paper 253e, AIChE Annual Meeting, November 9, 2010.
41. Q. Zhu, L. Taylor and M. T. Harris, “Microstructure of Drug/Polymer Solid Dispersions,” paper 571h, AIChE Annual Meeting, November 10, 2010.
42. P. Oglesby and M. T. Harris, “Modeling Electrokinetic Remediation of Concrete by G/FEM,” paper 694e, AIChE Annual Meeting, November 11, 2010.
43. Bhat, P. P., Appathurai, S., Harris, M. T., Pasquali, M., and Basaran, O. A., “Computational analysis of viscoelastic jet/drop breakup,” 16th US National Congress on Theoretical and Applied Mechanics (USNCTAM 2010), June 27-July 2, 2010, Penn State University, University Park, Pennsylvania.
44. Collins, R. T., Harris, M. T., and Basaran, O. A., “Electrohydrodynamic tip-streaming and emission of charged drops from liquid cones,” 16th US National Congress on Theoretical and Applied Mechanics (USNCTAM 2010), June 27-July 2, 2010, Penn State University, University Park, Pennsylvania.
45. Appathurai, S., Harris, M. T., and Basaran, O. A., “Analogies between a drop impacting a solid surface, an oscillating sessile drop, and two coalescing drops, 63rd Annual Meeting of the Division of Fluid Dynamics (DFD) of the American Physical Society (APS), November 21-23, 2010, Long Beach, California.
46. Gao, H., Appathurai, S., McGough, P., Harris, M. T., and Basaran, O. A., “Analysis of the formation of drops of a Bingham fluid,” 63rd Annual Meeting of the Division of Fluid Dynamics (DFD) of the American Physical Society (APS), November 21-23, 2010, Long Beach, California.
47. Gao, H., Subramani, H. J., Harris, M. T., and Basaran, O. A., “Wall effects in Stokes experiment with a liquid foam,” 64th Annual Meeting of the Division of Fluid Dynamics (DFD) of the American Physical Society (APS), November 20-22, 2011, Baltimore, Maryland.
48. Pommer, C. A., Harris, M. T., and Basaran, O. A., “Scaling in the transition from selective withdrawal to viscous entrainment,” 64th Annual Meeting of the Division of Fluid Dynamics (DFD) of the American Physical Society (APS), November 20-22, 2011, Baltimore, Maryland.
49. Sambath, K., Collins, R. T., Harris, M. T., and Basaran, O. A., “Scaling laws in electrospraying,” 64th Annual Meeting of the Division of Fluid Dynamics (DFD) of the American Physical Society (APS), November 20-22, 2011, Baltimore, Maryland.
50. Appathurai, S., Harris, M. T., Basaran, O. A., Paulsen, J. D., Burton, J. C., and Nagel, S. R., “Coalescence of liquid drops,” 64th Annual Meeting of the Division of Fluid Dynamics (DFD) of the American Physical Society (APS), November 20-22, 2011, Baltimore, Maryland.
51. P.F. Sung, M. T. Harris, “Modeling of the Particle Deposition from Drying Sessile Droplets,” paper 315e, AIChE Annual Meeting, October 18, 2011.
52. J.S., Austin, P.F. Sang, M. Kovacevic and M.T. Harris, “Monitoring of Moisture Content and Bulk Density in Rapidly Flowing Powders Using Microwave Spectroscopy,” paper 357b, AIChE Annual Meeting, October 18, 2011.
53. Q. Zhu, L. Taylor, M.T. Harris and H.Y. Hsu, “Microstructural Characterization and Dissolution Behavior of Drug/Semicrystalline Polymer Systems,” paper 527d, AIChE Annual Meeting, October 19, 2011.
54. Q. Zhu. L. Taylor, M.T. Harris, and H.Y. Hsu, “Effect of Composition and Temperature on the Structural Evolution and Dissolution Behavior of Drug/Polymer Systems,” paper 631h, AIChE Annual Meeting, October 19, 2011.
55. J.Austin, S. C. Liew, R. McDonnell, P.F. Sung, and M.T. Harris, “Investigating the Effects of Particle Size and Bulk Powder Properties on Microwave Sensor Measurements,” paper 19c, AIChE Annual Meeting, October 29, 2012.
56. H.Y. Hsu, and M.T. Harris, “Microstructural Characterization and Dissolution Behavior of Drug/Semicrystalline Polymer Systems on Substrates,” paper 23a, AIChE Annual Meeting, October 29, 2012.
57. Y. Zhao, F. Li and M.T. Harris, “Formulation of Bovine Serum Albumin Encapsulated Cal-Alginate Microspheres by Electrodispersion for a Simulated Release in a Gastric Fluid,” paper 262e, AIChE Meeting, October 30, 2012.
58. C. Pommer, M.T. Harris, and O.A. Basaran, “Scaling in the Transition from Selective Withdrawal to Entrainment,” paper 353h, AIChE Meeting, October 30, 2012.
59. L. Hirschfield, A. Giridhar, G.V. Reklaitis, M.T. Harris, and V. Venkatsubramanian, “Automation and Control of Drug-on-Demand Technology, paper 533g, AIChE Meeting, October 31, 2012.
60. O.A. Basaran, K. Sambath, R.T. Collins, and M.T. Harris, “EHD Tip Streaming: Size and Charge of Electrospray Droplets,” paper 552a, AIChE Meeting, October 31, 2012.
61. P.F. Sung and M.T. Harris, “Deposits formed from the Evaporation of Sessile Drops,” paper 559b, AIChE Meeting, October 31, 2012.
62. S. Appathurai, M.T. Harris, J. Paulsen, J. Burton and S. Nagel, “Unexpected Dynamics of Drop Coalescence,” paper 628b, AIChE Meeting, November 1, 2012.
63. H. Gao, H.J. Subramani, M.T. Harris, and O.A. Basaran, “Wall Effect in Stokes Experiment with a Liquid Foam,” paper 628c, AIChE Meeting, November 1, 2012.
64. A. Freer, L. Guarnaccio, K. Wafford, J. Smith, J. Steilberg, J. Culver and M. Harris, “Surface Mineralization and Characterization of Palladium Nanoparticles on Genetically Engineered Tobacco Mosaic Virus (TMV) Templates,” paper 651b, AIChE Meeting, November 1, 2012.
65. N. R. Devlin, K. Sambath, M.T. Harris, and O. A. Basaran, “Contraction dynamics of planar liquid filaments,” 65th Annual Meeting of the Division of Fluid Dynamics (DFD) of the American Physical Society (APS), November 18-20, 2012, San Diego, California.
66. A. El Hagrasy, A. Giridhar, A. Muliadi, J. S. Austin III, A. Gupta, M. Louvier, T. J. Patterson, P. Geldenhuis, **M.** T. **Harris**, C. Wassgren, Z. K. Nagy, G. V. Reklaitis and J. D. Litster, “[Continuous Operations in Pharmaceutical Solid Dosage Form Manufacturing: Dry Granulation Case Study](https://aiche.confex.com/aiche/2013/webprogram/Paper338117.html),” AIChE Meeting, November 6, 2013.
67. A. Freer, J. Smith, A. Macino and **M.** T. **Harris,** “[Surface Mineralization and Controlled Deposition of Biotemplated Palladium Nanorods Onto Gold Substrates](https://aiche.confex.com/aiche/2013/webprogram/Paper321659.html),” AIChE Meeting, November 5, 2013.
68. L. Hirshfield, G. V. Reklaitis, A. Giridhar and **M.** T. **Harris,** “[Drug-On-Demand: A Mini-Manufacturing Method Using Drop-On-Demand Technology](https://aiche.confex.com/aiche/2013/webprogram/Paper317761.html),” AIChE Meeting, November 5, 2013.
69. J. S. Austin III, A. Gupta, G. V. Reklaitis and **M.** T. **Harris, “**[Development of a Novel Microwave Sensor for Improved Process and Quality Control](https://aiche.confex.com/aiche/2013/webprogram/Paper330000.html),” AIChE Meeting, November 7, 2013.
70. H.Y. Hsu and M. T. Harris, “Effect of Double Layer Formulation On Crystallization of Naproxen/Polyethylene Glycol Dispersion System,” AIChE Meeting, November 6, 2013.
71. O. Adigun, A. Freer and M. T. Harris, “[The Hydrothermal Synthesis of Palladium Nanorods on the Tobacco Mosaic Virus: A Study of Its Kinetic Mechanism and Nanorod Properties](https://aiche.confex.com/aiche/2014/webprogram/Paper384163.html),” AIChE Meeting, November 19, 2014.
72. N. Devlin and M. T. Harris, “Separation of Particles During Drop Evaporation, AIChE Meeting, November 19, 2014.
73. H,Y, Hsu, M. T. Harris and L. S. Taylor, “Impact of Surface Chemistry on Crystallization of Acetaminophen,” AIChE Meeting, November 20, 2014.
74. J. S. Austin III, Anshu Gupta, G. V. Reklaitis and M. T. Harris, A Novel Microwave Frequency Sensor to Simultaneously Monitor Chemical Composition, Moisture Content, and Density of Foll Compacts Online,” AIChE Meeting, November 21, 2014.
75. O. Adigun, E. Retzlaff-Roberts, G. Novikova, S. L. Fries and M. T. Harris, “Mechanisms of Metal Mineralization on Biotemplates for Nanowire Synthesis,” AIChE Meeting, November 11, 2015.
76. N. R. Devlin, and M. T. Harris, “The Effect of Marangoni Currents and Gravitational Forces on the Spearation of Two Different Sized Particles during Droplet Evaporation,” AIChE Meeting, November 11, 2015.

## Original Designs, Plans, Inventions and Patents

1. Method and Apparatus for the Production of Metal Oxide Powder, (Patent No. 5,122,360), June 16, 1992.
2. Method and Apparatus for the Production of Metal Oxide Powder, (Patent No. 5,207,973), May 4, 1993.
3. Silica Powders for Powder Evacuated Thermal Insulating Panel and Method, (Patent No. 5,376,499), December 27, 1994.
4. Silica Powders for Powder Evacuated Thermal Insulating Panel and Method, (Patent No. 5,395,604), Mar. 7, 1995.
5. Improved Nozzle for Electrical Dispersion Reactor, (Patent No. 5,464,195), November 7, 1995.
6. Synthesis of Model Particles for Powder Evacuated Panels, (Patent No. 5,480,696), January 2, 1996.
7. Nozzle for Electric Dispersion Reactor, (Patent No. 5,503,372), April 2, 1996.
8. Variation of the Shape and Morphological Properties of Silica and Metal Oxide Powders by Electrohomogeneous Precipitation, (Patent No. 5,603,819), February 18, 1997.
9. Nozzle for Electric Dispersion Reactor, (Patent No. 5,738,821), April 14, 1998.
10. Nozzle for Electric Dispersion Reactor, (Patent No. 5,759,228), June 2, 1998.
11. Metal Coated Virus-Based Nanoelectrodes and Method of Assembling of Same, (Patent No. 8,383,237), February 2, 2013..

## Contracts and Grants

## M. T. Harris, “Composite Metal and Metal-Ceramic Microspheres by Multiphase Acousto- and Electro-dispersion Precipitation—Thermal Reduction (MAEPTR)”, Minta Martin Aeronautical Research Fund, University of Maryland, College Park. (Total Funding: $10,000, 1997-1998).

1. M. T. Harris, Henry Welcome Award, University of Maryland, College Park. (Total Funding: $20,000, 1996-1999).
2. N. S. Wang and M. T. Harris, “Continuous Synthesis of BuNENA,” Office of Naval Research – Collaborative Agreement, ($78,000, 1999).
3. K. T. Kiger, R. V. Calabresce and M. T. Harris, “Acquisition of Phase Doppler Anemometer for Engineering Education and Research in Multiphase Flow,” National Science Foundation. (Funding: $260,000, 1998-2001).
4. Daryll J. Pines, Horace J. Russell, Patricia F. Meade, A. Amde, and M. T. Harris, “Sloan Distinguished Scholars Program,” Alfred P. Sloan Foundation. (Funding: $286,000, 1996-2002).
5. M. T. Harris, “Electrohydrostatics, Electrohydrodynamics and Microstructural Evolution During Electrodispersion Precipitation,” National Science Foundation, Early Faculty Career Award (Funding: $417,808, 1997-2002.)
6. M. T. Harris, “Studies of the Microstructure of Plama-Sprayed Deposits,” U.S. Department of Commerce, National Institute of Standards and Technology (NIST) (Funding: $447,753, 1997-2001).
7. M. T. Harris, T. Barbari and S. Greer, Block Grant Award, Graduate School, University of Maryland, (Funding: $64,400, 2000-2002).
8. M. T. Harris and J. Culver, "Biotemplates for Nanocircuitry," Small Smart Systems Seed Money, University of Maryland (Funding $17,000, 2000-2001).
9. M. T. Harris, “Improved Rational Drug Design”, MIPS Grant, Engineering Research Center, University of Maryland (Funding: $55,000, 2000).
10. M. T. Harris, “Improved Rational Drug Design”, MIPS Grant, Engineering Research Center, University of Maryland (Funding: $55,000, 2001).
11. M. T. Harris, “Studies of Microstructure of Complex Ceramic Materials,” Department of Commerce/NIST (Funding: $310,838 2002 to 2005. ).
12. M. T. Harris, “Virus Assemblies as Templates for Nanocircuits,” Department of Energy (Funding: $239,978, 2002 to 2005)**.**
13. Hugh Hillhouse, …, M. T. Harris, …., “Acquisition and Customization of a Facility for the in-Situ X-ray Structural Analysis of Nanomaterials,” National Science Foundation, approx. $881,888 (2003 to 2007).
14. M. T. Harris, “Characterization of the Electrodispersion Process,” Purdue Research Foundation (Funding $26,000 2/1/03 to 2/1/05).
15. M. T. Harris, “Hydrosols, Organosols and Multiphase Engineering,” Shreve Grant, Purdue University, (Funding $741,500 2002 to present).
16. M. T. Harris, University Scholar Funding, (Funding $50,000 2003 to 2007).
17. M. T. Harris, ““Virus Assemblies as Templates for Nanocircuits,” Department of Energy (Funding: $301,474, 2005 to 2008).
18. M. Smith, …, M.T. Harris,…, Louis-Stokes Alliance for Minority Participation (LSAMP) Indiana, (Funding: $744,815, 2005-2010).
19. F. Muzzio,…, M. T. Harris, …, “NSF/Fundamental Design, Characterization and Manufacturing Science of Biocompatible Engineered Composites,” NSF (Funding: $6,515,340, 2006-2012).
20. F. Muzzio, …, M.T. Harris, …, “NSF/Fundamental Design, Characterization and Manufacturing Science of Biocompatible Engineered Composites,” Industrial SubAward (Funding: $1,322,496, 2006-2013).
21. M. T. Harris, “Virus Assemblies as Templates for Nanocircuits,” Department of Energy (Funding: $330,000, 2008 to 2011).
22. O. A. Basaran and M. T. Harris, “Process Optimization,” Cummins, (Funding: $42,000 per year 2008-2009).
23. R. Borris, K. Morris, M. T. Harris, A. Cuitino, G. Stephanopolous, “Multi-scale Analysis and knowledge Structuring for Natural Products (MAKS),” NSF (Declined: $24,184,296, 2009-2014).
24. M. T. Harris, J. Stroebel and W. Oakes, “Developing an Interdisciplinary Engineering Identity by Mentoring K-12 Students,” NSF (Declined: $2,999,861, 2009-2012)**.**
25. C**.** Wassgren,…,M.T. Harris, .., “MRI-R2: Acquisition of Equipment for a State of the Art Particle, Powder, and Compact Characterization Facility,” MRI-NSF (Declined: $668,128, 2010-2012).
26. I. Hua and M. T. Harris, “REU Site: Tackling Some of the Grand Challenges in Engineering,” NSF-REU (Funding: $282,348, 2010-2013).
27. M. T. Harris, “Virus Assemblies as Templates for Nanocircuits: Supplemental Funding Request,” Department of Energy (Funding: $60,000, 2009-2010).
28. M. T. Harris, “Modeling Studies:Quantum Dot Production,” Oak Ridge National Laboratory (Funding $25,000, 3/19/2010 – 9/30/2010).
29. F. Muzzio and M. T. Harris "Development, Testing and Process Integration of Microwave Sensor-Based Technology in the Pharmaceutical Industry,", NSF: SECO – STTR Program (declined through Rugers University, CSOPS ERC Center Director , $200,000 2010 – 2012).
30. F. Muzzio, et al., “RutgersEngineeringResearch Center onStructural OrganicComposites,” National Science Foundation (Funding **$**1,773,690, 2013-2014)
31. M.T. Harris, B. Bourdouris, Y. Wue, “NUE: Improvementof Nanoscale DeviceEducation viaTheory, ExperimentalDesign, andCharacterization,” National Science Foundation (Funding **$**200,000 2013 -2014).
32. L. Taylor, et. al., “NSFIGERT: FromMolecules toParticulate Products -Multiscale CrystalEngineering” National Science Foundation (Pending Funding $3,215,351 2013 –2018).
33. M. T. Harris, S. Beaudoin and “NSF Recruitment and Retention Scholarship Program for Students with Disabilities,” National Science Foundation (Pending Funding $600,000 2013 -2018).
34. S. Beaudoin et al., “Characterization, Analysis, Protocols, and Training for Unique Residue and Explosives Detection: A DHS Center of Excellence on Explosives Research,” Department of Homeland Security (Declined Funding $17,500,000 2013-2018)

**Total Fund Received at Purdue Univ.: $13,847,367**

**Total Funds Received at Univ. of Maryland and Purdue Univ. : $15,558,328**

## Fellowships, Prizes and Awards

1. 1990 Technical Communcation Award (East Tennessee Chapter of the Society for Technical Communication).
2. University of Tennesee Black Alumni Scholastic Achievement Award.
3. “Best Poster” Award at the Materials Engineering and Science Division 1991 Poster Session; in the Ceramics and Superconductor Program, 1991 Fall AIChE Meeting.
4. Invention Award (Martin Marietta Energy Systems 1993 Awards Night).
5. 1994 Martin Marietta Energy Systems Significant Achievement Award.
6. NSF CAREER Award (1997-2002).
7. Elected to serve as One of the Directors of the Materials Engineering and Science Division of the AIChE (2003-2005).
8. AIChE Grimes Award (2005).
9. Selected to be Associate Editor for Journal of Nanomaterials (2005)
10. Selected to be Associate Editor for Chemical Engineering Letters (2007)
11. Black Achievers Award, AIChE Minority Affairs Committee (2008)
12. Fellow of AIChE (2009)
13. Distinguished Service Award, AIChE Minority Affairs Committee (2009)
14. College of Engineering Research Team Award (2010)
15. Reilly Professor of Chemical Engineering (2015 to present)
16. Pioneers of Diversity Award, AIChE Minority Affairs Committee (2015)

## Reviewer for Journals and Grant Proposals

1. *Journal of Non-Crystalline Solids*
2. *Journal of the American Ceramic Society*
3. *Journal of Colloid and Interface Science*
4. *Journal of Materials Chemistry*
5. *Journal of Hazardous Materials*
6. *Biomaterials*
7. *Environmental Progress*
8. *Applied Optics*
9. *Chemical Engineering Education*
10. *National Science Foundation Grants*
11. *Department of Energy Grants*
12. *Petroleum Research Fund*
13. *Computers in Chemical Engineering*
14. *Langmuir*

**J. Unpaid reviewing activities for agencies**

1. *National Science Foundation Grants - Engineering Directorate*
2. *Department of Energy -Office of Basic Energy Sciences - Advanced Energy Projects*
3. *NASA - Fluids*
4. **Engagement, Teaching and Advising**
5. **ENGAGEMENT/TECHNOLOGY TRANSFER (if applicable)**

1. Candidate’s own statement of contributions to technology transfer.

Michael Harris is part of the leadership team and a faculty researcher in the NSF-funded research center called “Center for Structured Organic Particulates” This center consists of researchers from four universities (Rutgers University, Purdue University,. New Jersey Institute of Technology and the University of Puerto Rico) who work with pharmaceutical companies to improve the production of tablets and other oral dosage forms. His research group has worked on several projects that are of interest to the pharmaceutical industries. These projects include the drop printing of API (drug) on edible substrates where we investigate the drug crystallization phenomena on various substrates and the computational fluid dynamics of drop formation. Another project includes the use of microwave-based sensors for measuring simultaneously the moisture content, bulk density and composition of powders. A couple of companies (Eli Lilly and GSK) have expressed interest in the technologies.

2. U.S. and international patents awarded.

a. Method and Apparatus for the Production of Metal Oxide Powder, (Patent No. 5,122,360), Michael T. Harris, Timothy Scott and Charles Byers, (June 16, 1992).

b. Method and Apparatus for the Production of Metal Oxide Powder, (Patent No. 5,207,973), Michael T. Harris, Timothy Scott and Charles Byers, (May 4, 1993).

c. Silica Powders for Powder Evacuated Thermal Insulating Panel and Method, (Patent No. 5,376,499), Michael Harris and Tom Kollie (December 27, 1994).

d. Silica Powders for Powder Evacuated Thermal Insulating Panel and Method, (Patent No. 5,395,604), Michael Harris and Tom Kollie, (Mar. 7, 1995).

f. Improved Nozzle for Electrical Dispersion Reactor, (Patent No. 5,464,195), Warren Sission, Michael Harris Timothy Scott and Osman Basaran, (November 7, 1995).

g. Synthesis of Model Particles for Powder Evacuated Panels, (Patent No. 5,480,696) Michael Harris and Tom Kollie, (January 2, 1996).

h. Nozzle for Electric Dispersion Reactor, (Patent No. 5,503,372), Warren Sission, Michael Harris and Osman Basaran, (April 2, 1996).

i. Variation of the Shape and Morphological Properties of Silica and Metal Oxide Powders by Electrohomogeneous Precipitation, (Patent No. 5,603,819), February 18, 1997.

j. Nozzle for Electric Dispersion Reactor, (Patent No. 5,738,821), Warren Sisson, Michael Harris and Osman Basaran, (April 14, 1998).

k. Nozzle for Electric Dispersion Reactor, (Patent No. 5,759,228), Warren Sisson, Michael Harris and Osman Basaran, (June 2, 1998).

3. Patents submitted.

a. Metal Coated Virus-Based Nanoelectrodes and Method of Assembling of Same, (Patent Application No. ***20100093562***, Elizabeth Royston, James Culver, Michael Harris, et al., (April 15, 2010).

4. Other major technology transfer activities.

5. Industry interactions (include dates).

6. Appearances in media interviews and other coverage. (e.g., print, web, radio, television or other media coverage)

a. Clark School Press Release Story, Bad Virus Put to Good Use: Breakthrough Batteries,

Virally Structured Nano-Electrodes Boost Energy Capacity Ten-Fold, Decenber 6, 2010, <http://www.eng.umd.edu/html/media/release.php?id=71>

b.Univ. of Maryland researchers using modified Tobacco Mosaic Virus as template for Li-ion electrodes, December 8, 2010, <http://www.greencarcongress.com/2010/12/tmv-20101208.html>

c.Solution to beading-saliva mystery has practical purposes, June 2010,

http://www.purdue.edu/newsroom/research/2010/100609BasaranBeads.html

d. Answer to saliva mystery has practical impact, *Bead formation model could be boon for plastics, pharmaceuticals* - See more at: http://news.rice.edu/2010/06/11/answer-to-saliva-mystery-has-practical-impact-2/#sthash.a1TE0lEW.dpuf

1. **TEACHING SCORES SUMMARY TABLE** (for the last 3 years)

The scores below are on a 5.0 base with 5 as the highest and 1 as the lowest

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SEM | COURSE  TITLE | COURSE NUMBER | # RESPONSES/  # IN COURSE | COURSE EVAL  SCORE | PROF EVAL SCORE | DEPT\*  AVE  PROF.  SCORE |
| S11 | Process Safety Management | ChE497 | 15/27 | 4.3 | 4.1 |  |
| S11 | Momentum Transfer | ChE377 | 20/31 | 4.4 | 4.5 |  |
| S12 | Process Safety Management | ChE497 | 30/46 | 4.3 | 4.5 |  |
| S12 | Discovering Engineering | ENGR197 | 1/3 | 4.0 | 5.0 |  |
| F13 | Process Safety Management | ChE42000 | 62/161 | 3.1 | 3.4 |  |
| F14 | Process Safety Management | CHE42000 | 81/149 | 2.9 | 3.2 |  |
| F15 | Process Safety Management | CHE42000 | 78/148 | 3.0 | 3.2 |  |

\* The average department score provided is the average of all Chemical Engineering courses of the same level, e.g. all 300, 400, etc. from Fall 2009 to Spring 2014 (5 year period) and represent responses to the question “Overall, I would rate this instructor as:”

## Teaching Awards and Other Special Recognition - *N/A*

AIChE Student Chapter – University of Maryland – Outstanding Teacher of the Year Award (1999)

School of Chemical Engineering Murphy Award Nominee – Purdue University - (2008)

One of Three College of Engineering Murphy Award Nominees – Purdue University – (2008)

One of Two College of Enginering Murphy Award Nominees – Purdue University – (2013)

## Advising: Other than Research Direction

1. Student (Undergraduate, Nuclear Engineering) - Supathorn Poghikaroon - Teaching Fellow for ENES 100; Mentor (University of Maryland at College Park); Fall Semester 1996.
2. Student (Undergraduate, Chemical Engineering) - Michael Milke - Dean’s Scholar; Mentor (University of Maryland at College Park); Academic years - Starts Fall 1996.
3. Mentoring Two Students in Office of Multi-Ethnic Student Education (OMSE) - Fall 1996.

## Advising: Research Direction

1. ***High School Students***
2. Robert Hardin, Eleanor-Roosevelt High School, Greenbelt, Maryland (1997-1998)
3. Clifford Harris, Eleanor-Roosevelt High School, Greenbelt, Maryland (2000-2001).
4. Nicole Saxon, Eleanor-Roosevelt High School, Greenbelt, Maryland (Fall 2001).
5. Arman Hutton, Tacoma Park Academy, Tacoma Park, Maryland (Summer 2001 – 2002).
6. Alais Jones, Arsenal Tech. High School, Indianapolis, IN (Science Bound Student, Summer 2006).
7. Ms. Ciara Buckhalter, Arsenal Technical High School, Indianapolis (Science Bound Student, Three Weeks Program, Summer 2010).
8. Mitch Devlin, Summer 2013
9. ***Undergraduate Research***
10. Jennifer Dolan; Chemical Engineering; University of Maryland at College Park (Academic years 1996 - June 1997).
11. Lu Zheng; Chemical Engineering; University of Maryland at College Park (February 1996 - June 1997).
12. Tamara Powell; Chemical Engineering; University of Maryland, College Park (June 1997 - 1998).
13. Jocelyn Truitt; Chemical Engineering; University of Maryland, College Park (June 1997 – January 1999).
14. Nicole Dingle; Chemical Engineering; University of Maryland, College Park (Fall 1997 - present).
15. Vineet Agrawal; Chemical Engineering; University of Maryland, College Park (Fall 1997 - 1998)
16. Tizita Girma; McNair Scholars; University of Maryland, College Park (Summer 1997).
17. Salamawit Harar; McNair Scholars; University of Maryland, College Park (Summer 1997).
18. Emeka Okoye; Chemical Engineering; University of Maryland, College Park (Summer 1998 – present).
19. Jay Kimmel; Chemical Engineering; University of Maryland, College Park (Spring 1999).
20. Jeremey Matthews; Chemistry; Columbia Union College, Takoma Park, Maryland (Summer 1999).
21. Tashauna Garner; Chemical Engineering; University of Maryland, College Park. (Spring 2000).
22. Ryan Santosa; Chemical Engineering; University of Maryland, College Park (Fall 2000).
23. Kylie Gaskins; Chemical Engineering, University of Maryland, College Park (Spring 2001).
24. Elizabeth Royston; Chemical Engineering, University of Maryland, College Park (Summer 2000 – Fall 2001)
25. Ellis Johns; Chemical Engineering, University of Maryland, College Park (Summer 2001)
26. Ivy Liu; Chemical Engineering, University of Maryland, College Park (Fall 2001).
27. Cindy Lin; Chemical Engineering, University of Maryland, College Park (Fall 2001).
28. Patrick Taylor; Chemical Engineering, University of Maryland, College Park (Fall 2001).
29. Natasha Prokhorenk; Chemical Engineering, University of Maryland, College Park (Summer 2001 – December 2001).
30. Kimberly Wafford; Chemical Engineering, Purdue University, (Spring 2002-Spring 2003)
31. Adam Gohn; Electrical Engineering Technology, Purdue University, (Spring 2002).
32. Jessica Macke; Chemical Engineering, Purdue University, (Fall 2002-Summer 2003)
33. Dhaval Shah, Purdue University (Fall 2002)
34. Kristianto Tjiptowidjojo, Purdue University, (Fall 2002-Spring 2004)
35. Matthew Traylor, Purdue University, (Summer 2003, Fall 2004-May 2005, Honors)
36. Nick Shish, Purdue University, (Fall 2003 and Spring 2004)
37. Shannon Kelly, Purdue University, (Fall 2003 and Spring 2004)
38. Dhaval Shah, Purdue University (Fall 2003)
39. Joseph Franses (co-advised with Prof. Thomspon in Chemistry), Purdue University (Fall 2003)
40. Elizabeth Hubacek, Purdue University (Summer 2004)
41. Cornelia T. Bengea, Purdue University (Summer 2004)
42. Casey Gutierrez, Purdue University (Summer 2004, Fall 2004)
43. Selasi Blavo, Purdue University (Summer 2004)
44. Emmanuel Quansah, Purdue University (Summer 2004)
45. Valli Subbiah, Purdue University (Fall 2004-May 2005, Honors)
46. Samantha Sanders, Purdue University (Spring 2005-Present - Honors)
47. Chris Pommer, Purdue University (Spring 2005, Summer 2005- SURF, Fall 2005, Spring 2006, Fall 2006)
48. Carolyn Lehman, Purdue University (Spring 2005, Fall 2005)
49. Genesse Jenkins, Purdue University (Summer 2005 – SURF, Summer 2008, Fall 2008, Spring 2009)
50. Kelly Cross, Purdue University (Summer 2005 – LSAMP, Fall 2005, Spring 2006, Fall 2006)
51. Melisa Giovani, Purdue University (Summer 2005 – SURF)
52. Dan Eckerle, Purdue University (Summer 2005 – SURF, Fall 2005, Spring 2006)
53. Jose Nader, Purdue University (Spring 2006)
54. Kevin Schwartzenberg, Honors Research, Purdue University (Spring 2006, Fall 2006, Spring 2007)
55. James Skallerup, Honors Researcj, Purdue University (Spring 2006, Fall 2006, Spring 2007)
56. Jessica Sloan, Purdue University (Spring 2006, Fall 2006, Spring 2007)
57. Susan Azzano, Purdue University (Spring 2006)
58. Hidayat Abdhir, Purdue University (Spring 2006)
59. Anna Sutomo, Purdue University (Summer 2006, Fall 2006)
60. Kalyn Wenzlaw, Purdue University (Summer 2006)
61. Corliss Johnson, Purdue University (Summer 2006, Fall 2006)
62. Oluwaseyi Ogebule, Alabama A&M University (SURI Student, Summer 2006)
63. Joshua Hansen, Purdue University (Fall 2006-Spring 2007).
64. Jeremy Jones, Honors Research, Purdue University (Spring – Summer 2008)
65. Michael Mawikere, Purdue University, (Spring 2007)
66. Anna Harlan, (SURF) Purdue University, (Summer 2007)
67. Fuyue Li, (SURF) Purdue University, (Summer 2007 to present)
68. Matthew Hopson, (SURF) Purdue University, (Summer 2007, Summer 2008)
69. Brittany Hasler, Purdue University, (Summer 2007)
70. Amanda Gantz, Purdue University, (Summer 2007)
71. Chris Kanitra, Purdue University, (Summer 2007)
72. Seth Srylander, (SURF/RUE) Purdue University, (Summer 2007)
73. Russell Nix, Purdue University, (Fall 2007)
74. Aaron Shinkles, Purdue University, (Fall 2007)
75. Nicole Wright, Purdue University, (Fall 2007)
76. Tiffany Legge, Purdue University, (Spring 2008)
77. Vivian Fam, Purdue University, (Spring 2008)
78. Alexandra Smith, Purdue University(Summer 2008)
79. Milton Flournoy, Purdue University, (SROP, Summer 2008)
80. Francis Onochie Mbakogu Purdue University, (SURF, Summer 2008, Summer 2009)
81. Britanny Owens-Boatwright, Purdue University, (LSAMP, Summer 2008)
82. Amanda Fairbanks, Purdue University, (Fall, 2008)
83. Julie Finer, Purdue University, (Summer 2009)
84. Alejandro Villaneuva, Purdue University, (Summer 2009, SURF/REU)
85. Tochukwu T. Chimezie, Purdue University, (Summer 2009, SURF)
86. Kristen G. Angonnese (Univ of Michigan), Purdue Univ, (Summer 2009, SURF/REU)
87. Bragadeesh Selvarajan, Purdue University, (Summer 2009 to present)
88. Luke McAfee, Purdue University, (Fall 2009)
89. Brian Snook, Purdue University, (Fall 2009)
90. Rachel Machbitz, Purdue University, (Fall 2009)
91. Brian Carmon, Purdue University, (Fall 2009 – Summer 2010)
92. Daniel Custer, Purdue University, (Fall 2009 – Summer 2010)
93. Kim Bowser, (Junior: Spring 2010, Fall 2010)
94. Jeuz Salvacruz, (Junior: Spring 2010, Fall 2010)
95. Rafid Mustafa, (FYE, Fall 2010)
96. Bragadeesh Selvarajan (Junior, Fall 2010)
97. Noma Obgeifun, IUPUI/Purdue University, (Junior: SROP Student, Summer 2010)
98. Mark Kovacevic, Purdue University (Senior: Summer 2010)
99. John Mayo, Purdue University (Fall 2010)
100. Simone Soliman, Purdue University (Fall 2010, Spring 2011, Fall 2011)
101. Elizabeth Jones, Purdue University (Spring 2011, Summer 2011, Fall 2011, Spring 2012)
102. Krista Stump, Purdue University (Summer 2011, Fall 2011, Spring 2012, SURF Summer 2013)
103. Ashley Nicole Lee, Syracuse University (REU, Summer 2011)
104. Brooke Villarubia, Lousiana State University (REU, Summer 2011)
105. Candace Corso, Purdue University (Summer 2011, Spring 2012, Fall 2012)
106. Alyssa Marie Martin, Purdue University (Summer 2011)
107. Sheila Rodriquez, University of Puerto Rico (SURF, Summer 2011)
108. Kristin Nicole Wafford, Purdue University (Summer 2011, Spring 2012)
109. Lucas Guarnaccio, Purdue University (Summer 2011, Fall 2011, Spring 2012, Fall 2012)
110. Christian Garcia, Purdue University (Summer 2011)
111. Tiffany Miller, Purdue University (Summer 2011, Fall 2011,)
112. Ross Catron, Purdue University (Fall 2011, Spring 2012)
113. Sip Chen Liew, Purdue University (Fall 2011, Spring 2012)
114. Jane Steilberg, Purdue University (Fall 2011)
115. Aidan Lighty, Purdue University (Fall 2011, Spring 2012, Fall 2012)
116. AnnDrea Butler, Purdue University (LSAMP, Fall 2011)
117. Adam Dean, Purdue University (LSAMP, Fall 2011, Summer 2013)
118. Johanna Smith, Purdue University (Spring 2012, Fall 2012, Spring 2013)
119. Antonio Coelles-Vargas (Spring 2012)
120. Andrew Werling (Spring 2012)
121. Winstron Black, University of Dayton, (Grand Challenges REU, Summer 2012)
122. Breauna Campbell, Olin College, (SURF, Summer 2012, Spring 2014)
123. Seth Cory, Clarke College, (Grand Challenges REU, Summer 2012)
124. Ryan McDonnell, Purdue University (Summer 2012, Summer 2013)
125. Pushkaran Palani , Purdue University (Summer 2012-Spring 2013)
126. Nazrin Wan, Purdue University (Summer 2012)
127. Steven Merz, Purdue University (Fall 2012 – Summer 2013)
128. Jack Huber, Purdue University (Fall 2012 - Spring 2013)
129. Madison Bailey, Purdue University (Spring 2013)
130. Alissa Macino, Purdue University (Spring 2013)
131. Gabriela Resendez, Purdue University (Summer 2013)
132. Katherine Loehr, Purdue University (Summer 2013)
133. Gina Wagner, Triune University (Grand Challenges REU, Summer 2013)
134. Hayden Dahm, Swathmore College (Grand Challenges REU, Summer 2013)
135. Qiaoyi Sun, Purdue University (Fall 2013)
136. Melody Rong, Purdue University (Fall 2013)
137. Katherine Loehr, Purdue University (Spring 2014, Fall 2014 to Spring 2015)
138. David Oliver Tate (Spring 2014)
139. Shiladitya Banerjee (SURF, Summer 2014)
140. Tahid Ali (LSAMP, Summer 2014)
141. Erin Retzlaff –Roberts, Sophomore (Spring 2015 to present)
142. Gloria Novikova, Junior (Summer 2015 to present)

1. ***Graduate Research***

### MS Students Graduated

1. Zimako Ibe; M.S. Chemical Engineering (Advisor); University of Maryland, College Park; Academic years (January 1996 - May 1997).
2. Lubna Khatri; M.S. Chemical Engineering (Advisor); University of Maryland, College Park; Academic years – January 1998 – May 1999.
3. Lenny Schugam; M.S. Chemical Engineering (Advisor); University of Maryland, College Park; Academic years – January 1999 – December 2000.
4. Kimberly Brown, M.S., Chemical Engineering (Advisor); University of Maryland, College Park; Academic years – January 1998 – August 1998.
5. Nicole Dingle, M.S., Chemical Engineering (Advisor); University of Maryland, College Park; Academic years – January 2000 – May 2001.
6. Treniece Terry, M.S. – Chemical Engineering (Advisor); University of Maryland, College Park; Academic years – January 2000 – May 2001.
7. Jermey Matthews, M.S. - Chemical Engineering (Advisor); University of Maryland, College Park; Academic years - June 2000 – December 2002 (passed defense).
8. Talesha Hall, M.S. (non-Thesis) Chemical Engineering (Advisor); Purdue University, West Lafayette; Academic Years – October 2005 – May 2009.

#### Former Ph.D. Students

1. Nai Chi Liu; Ph.D. Chemical Engineering (Advisor); University of Maryland, College Park; Academic years - January 1997 – December 1999.
2. David Green; Ph.D. Chemical Engineering (Advisor); University of Maryland, College Park; Academic years - August 1996 – December 2001.
3. Lei Fang; Ph.D. Chemical Engineering (Advisor); University of Maryland, College Park; Academic years - August 1997 – December 2001.
4. Mingfeng Li; Ph.D. Chemical Engineering (Advisor); University of Maryland, College Park; Academic years – January 1998 – December 2001.
5. Kimberly Brown; Ph.D., Chemical Engineering (Advisor); University of Maryland, College Park; Academic years – August 1998- May 2005.
6. Nicole Dingle; Ph.D., Chemical Engineering (Advisor), University of Maryland, College Park; May 2001- December 2001(transferred); Purdue University, January 2002 – May 2005.
7. Sang-Yup Lee; Ph.D., Chemical Engineering (Advisor), University of Maryland, College Park; January 2001-December 2001(transferred); Purdue University, January 2002-August 2005.
8. John Mahle; Ph.D. - Chemical Engineering (Advisor); University of Maryland, College Park; Academic years - August 2000 – December 2005.
9. Elizabeth Royston, Ph.D. -Chemical Engineering (Advisor); Purdue University, West Lafayette; Academic Years – November 2002 – August 2007.
10. Edwina Widjaja, Ph.D. -Chemical Engineering (Advisor); Purdue University, West Lafayette; Academic Years – November 2002 – August 2007.
11. Robert Collins, Ph.D. -Chemical Engineering (co-Advisor w/Basaran); Purdue University, West Lafayette; Academic Years – January 2002 – May 2008.
12. YinYan Zhao, M.S./Ph.D. -Chemical Engineering; Purdue University, West Lafayette; Academic Years – November 2003 – August 2008.
13. Jung S Lim, Ph.D. (graduating) Chemical Engineering (Advisor); Purdue University, West Lafayette; Academic Years – October 2005 – August 2010.
14. Qing Zhu, Ph.D. – Chemical Engineering (Advisor); Purdue University, West Lafayette; Academic Years - September 2006 – December 2011.
15. Haijing Gao, Ph.D. – Chemical Engineering (co-Advisor w/ Basaran); Purdue University, West Lafayette; Academic Years - September 2006 – May 2012.
16. Pei Fang Sung, Ph.D. – Chemical Engineering (Advisor); Purdue University, West Lafayette; Academic Years - September 2006 – May 2012.
17. Santosh Appathurai, Ph.D. – Chemical Engineering (co-Advisor w/Basaran); Purdue University, West Lafayette; Academic Years - September 2007 – August 2012.
18. Chris Pommer, Ph.D. – Chemical Engineering (co-Advisor w/Basaran); Purdue University, West Lafayette; Academic Years - September 2007 – August 2012.
19. John Austin, Ph.D. – Chemical Engineering; Purdue University, West Lafayette; Academic Years – September 2010 to May 2014.
20. Alex Freer, Ph.D. – Chemical Engineering; Purdue University, West Lafayette; Academic Years – September 2010 to May 2014.
21. Hsin-Yun Hsu, Ph.D. – Chemical Engineering; Purdue University; West Lafayetee; Academic Years – September 2010 to August 2014.
22. Nicole Devlin, Ph.D. – Chemical Engineering; Purdue University; West Lafayette; Academic Years – September 2012 to December 2015.

#### Current Ph.D. Students

1. Patrick Oglesby, Ph.D. (passed preliminary exam) Chemical Engineering (Advisor); Purdue University, West Lafayette; Academic Years – October 2005 – present.
2. Christopher Anthony, Ph.D. (passed preliminary exam) – Chemical Engineering (co-Advisor w/Basaran), Purdue University, West Lafayette, Academic Years – September 2012 – present.
3. Mayo Adigun, Ph.D. (passed preliminary exam) – Chemical Engineering, Purdue University, West Lafayette, Academic Years – September 2012 – present.
4. Lihui Wang, Ph.D. (First Year Graduate Student) – Chemical Engineering, Purdue University, West Lafayette, Academic Years – September 2015 – present.

***iii. Service on other student committees in last 5 years***

1. Kaichang Xhang; Ph.D. Chemical Engineering (Dissertation committee member); University of Maryland, College Park (1996).
2. Wei Jin; M.S. Chemical Engineering (Thesis committee member); University of Maryland, College Park (1997).
3. Anne Lin; M.S. Chemical Engineering (Thesis committee member); University of Maryland, College Park (1997).
4. Yi-hung Lin; Ph.D. Chemical Engineering (Dissertation committee member); University of Maryland (1997).
5. Anoop Singh; M.S., Chemical Engineering (Thesis committee member); University of Maryland, College Park (1998).
6. Sylvia Francis, M.S. Chemical Engineering (Thesis committee member); University of Maryland, College Park (1998).
7. Sigfrido Hernandez, M.S. Chemical Engineering (Thesis committee member); University of Maryland, College Park (1998).
8. Charles Marks, Ph.D. Chemical Engineering (Dissertation committee member); University of Maryland, College Park (1998).
9. Michael Frances, Ph.D. Chemical Engineering (Dissertation committee member); University of Maryland, College Park (1999).
10. Rajath Mudalamane, M.S. Chemical Engineering (Thesis committee member); University of Maryland, College Park (1999).
11. Jianming Xiao, Ph.D. Chemical Physics (Dissertation committee member); University of Maryland, College Park (1999).
12. Yi-hung Lin, Ph.D. Chemical Engineering (Dissertation committee member); University of Maryland, College Park (1999).
13. Jiefei Huang, M.S. Chemical Engineering (Thesis committee member); University of Maryland, College Park (2000).
14. Ibrahim Sei, Ph.D. Chemical Engineering (Dissertation committee member); University of Maryland, College Park (2000).
15. BooGoon Woo, Ph.D. Chemical Engineering (Dissertation committee member); University of Maryland, College Park (2000).
16. Ursula Perez-Salas, Ph.D. Chemical Physics (Dissertation committee member); University of Maryland, College Park (2000).
17. LaRhonda T. Borum, Ph.D. Materials and Nuclear Engineering (Dissertation committee member); University of Maryland, College Park (2000).
18. S. Phogikaroon. Ph.D. Department of Chemical Engineering (Dissertation committee member); University of Maryland, College Park (2001).
19. Gastavo Padron, M.S. Department of Chemical Engineering (Thesis committee member); University of Maryland, College Park (2001).
20. S. Catithammanit, Ph.D. Department of Chemical Engineering (Dissertation committee member); University of Maryland, College Park (2001).
21. Darryl Williams, M.S. Department of Chemical Engineering (Dissertation committee member); University of Maryland, College Park (2001).

**4. Service**

**A. Professional**

1. ***Offices and committee memberships held in professional organizations (include dates).***
2. Co-Chaired Session: “Sol/Gel Synthesis of Advanced Oxide Ceramics,” AIChE Meeting, Saint Louis, Missouri, November 7-12, 1993.
3. Chaired Session: “Filtration and Manetically-Enhanced Separations,” - Separation Science and Technology for Energy Applications, Gatlinburg, Tennessee, October 22-26, 1995.
4. Co-Chair Session: “Growth, Structure and Modeling of Ceramic Particles,” Annual AIChE Meeting, Los Angelos, California, November 16-21, 1997
5. Co-Chaired Session: “Particle Synthesis in Dispersions and Supercritical Fluids,” AIChE 1998 Annual Meeting, Miami Beach, Florida, November 15-20, 1998.
6. Chaired Session: “Liquid Phase Synthesis of Nanomaterials,” AIChE 2001 Annual Meeting, Reno, Nevada, November 4-9, 2001
7. Co-Chaired Session: “Nanostructured Materials and Particles I,” AIChE 2002 Annual Meeting, Indianapolis, Indiana, November 3-8, 2002.
8. Organized and Chaired Session: “Manipulation of Nanophases by External Fields,” AIChE 2002 Annual Meeting, Indianapolis, Indiana, November 3-8, 2002.
9. Invited to serve on National Programming Committee for AIChE, Particle Technology Forum, Nanoparticles, Area 3d.
10. Elected as vice-Chair of Area 8d (Ceramics) of the AIChE for 2003 and 2004
11. Chaired Session: “Liquid Phase Synthesis of Nanomaterials and Particles,” AIChE 2003 Annual Meeting, San Franciso, November 16-21, 2004.
12. Chaired Session: “Manipulation of Nanophases by External Fields,” AIChE 2003 Annual Meeting, San Francisco, November 16-21, 2004.
13. Chaired Session: “Nanostructured Materials and Particles I,” AIChE 2004 Annual Meeting, San Francisco, November 16-21, 2004.
14. Elected as one of two Directors for Division 8 (Material Science and Engineering Division) of the AIChE 2004-2005.
15. Chair Area 8d (Ceramics) of the AIChE for 2005
16. Chaired Session: “Liquid Phase Synthesis of Nanomaterials and Particles,” AIChE 2005 Annual Meeting, Austin, November 16-21, 2005.
17. Chaired Session: “Manipulation of Nanophases by External Fields,” AIChE 2005 Annual Meeting, Austin, November 16-21, 2005.
18. Member of the Career and Education Operating Council for AIChE for 2005-2006.
19. Committee on Minorty Affairs, Americal Chemical Society for 2006 to present.
20. Member of Minority Faculty Forum/Minority Affairs of the AIChE 2005-present.
21. Chaired Session: “Manipulation of Nanophases by External Fields,” AIChE 2006, Annual Meeting, San Franscisco, November 12-17, 2006.
22. Chair of Minority Affairs Committee of the AIChE 2007-2008.
23. Moderator of Session 2669: “Marketing Engineering to Minority Students”, ASEE 2008, Pittsburgh, PA, June 22-25, 2008.
24. Co-Chaired Session: MAC Scholarships Forum: “Celebrating More than a Decade of MAC Scholarship Awards at the AIChE Centennial,” AIChE Annual Meeting, Philadelphia, PA, November 17, 2008.
25. Moderator of Session 1569, “Developing Young MINDS in Engineering – Part II”, ASEE Annual Meeting, Louisville, Ky (2010).
26. Program Chair, Minority Division, ASEE (2011 and 2012 annual meetings.
27. Minority Division (MIND) Chair for two years (2013 and 2014) starting after the 2012 ASEE annual meeting.
28. Member of ASEE Dupont Minority Award Selection Committee
29. Member of ASEE Executive Working Group on College Affordability
30. Member of Committee to Evaluate AIChE Foundation’s Funding Proposals (2015)
31. Elected Member of the Chemical Engineering Technology Operating Council of the AIChE (2015-2018).
32. Trustee AIChE Foundation (2011-2015).
33. Nanoscience and Engineering Forum Secretary/Treasurere (2015-2016).
34. ***Other non-University committees, commissions, panels, etc.***
35. Invited Participant in the Workshop on the “Fundamental Research Needs in Ceramics,” NSF, Arlington, VA- June 10-11, 1997.
36. Panelist to Review NSF CAREER Award Proposals for the Division of Materials Research - Ceramics Program, Arlington, VA - October 14, 1997.
37. Panelist to Review NSF IGERT Preproposals for Engineering Education and Centers, Arlington, VA – September 1998.
38. Member of Site Review #6 for National Science Foundation Engineering Research Center, Rice University, Houston, Texas – January 25-27, 1999.
39. Panelist to Review SBIR Proposals (Ceramics Division) Arlington, VA – September 1999.
40. Member of Review Committee of the Chemical Engineering Program at Howard University - Fall 1999.
41. Panelist to Review Proposals (Ceramics Division) Arlington, VA - September 2000.
42. Panelist to Review Proposals (Ceramics Division) Arlington, VA – September 2003
43. MSU Engineering Advisory Council, Mississippi State University – 2004 to present.
44. Associate Editor of the Journal of Nanomaterials (2005 – present).
45. Associate Editor of the e-journal Chemical Engineering Letters (2007 to present)
46. ***International activities not listed above - N/A***
47. ***Paid consultancies***

Consultant for Grace-Davison Washington Research Center, Columbia, Maryland. (1998-2002)

Consultant for Biospace Inc., Gaitherburg, Maryland (1998-2002)

Consultant for PEC (January 2013 to present)

* 1. **University**

1. ***Departmental***

# Purdue University

1. Undergraduate Committee – September 2002 to 2004; 2007-1010
2. Graduate Recruiting Committee – August 2002 to 2006
3. Chair Graduate Recruiting Committee – December 2002 to May 2006
4. Chair – Instrumentation Committee – August 2002 to 2004
5. Responsible for Faculty Teaching Assignments and Teaching Assistant Assignments (Spring 2011 to present)
6. Director of Graduate Studies, (July 2012 to June 2014)

# University of Maryland

1. Department of Chemical Engineering Graduate Admissions Committee - July 1996 to August 1997.
2. Member of Department of Chemical Engineering Assembly Committee – 1996 to 1999.
3. Co-Designed Experiment for Unit Operations Laboratory - 1997 to 1998.
4. Member of Chemical Physics Committee - 1997 to 1999.
5. Undergraduate Committee member - 1998.
6. ABET Committee member - 1999.
7. Director of Graduate Admissions and Recruitment - 1999 to 2001.
8. ***College and Divisional***

# Purdue University

1. College of Engineering Diversity Action Committee (August 2002 to present).
2. College of Engineering Mentor Review Committee (April 2002 to 2004).
3. Chair – Junior Faculty Council (December 2002 to 2006).
4. Member – Nanotechnology Cluster Hire Steering Committee (January 2003 to 2007).
5. Chair – Nanomaterials and Metrology Cluster Hire Subcommittee (Januaray 2003 to 2004).
6. Member – Engineering Grade Appeals Committee (2003).
7. Member – Chemical Engineering Head Search Committee (2002-2003).
8. Member – Search Committee for MEP director (Fall 2003 to 2004).
9. Member – Engineering Visiting Committee, College of Engineering (2003 to 2006).
10. Interim Associate Dean for Undergraduate Education (April 2006 to December 2006).
11. Associate Dean for Undergraduate Education (January 2006 to present)

Reporting Units:

* 1. Directors of Women in Engineering Program, Minority Engineering Program, Assessment, Pre-University Student Engagement, Indiana Space Grant Consortium, Office of Professional Practice, College of Engineering Honors Program, Leadership Minor
  2. Chairs of Engineering Curriculum Committee
  3. Undergraduate Chairs

1. Member - College Research Committee (2006 to 2010)
2. College Associate Dean for Engagement (2007 to present)
3. Chair – Grade Appeals Committee (2006 to present)
4. Chair – Engineer of 2020 Implementation Committee (2006 to present)
5. Dean’s Representative on Engineering Curriculum Committee (2006 to present)
6. Member – Search Committee for Director of Discovery Learning Center (2007)
7. Member – Search Committee for Associate Dean for Research, College of Engineering (2007)
8. Member of Diversity Task Force Committee (2005 to 2008)
9. Administrator to whom ABET Coordinator reports (2006 to present)
10. Member of Computer Science Task Force (2009)
11. Member of Right-Sizing Committee (2010)
12. Co-advisor for PESC (2006 to present)
13. Advisor for ESW (2010 to present)
14. Member - DEEE Outreach Committee (2011 to present)
15. Facilities Committee (2011 to 2012)

# University of Maryland

1. Participated on CMPS Search Committee to fill the Faculty positions in Applied Mathematics (1997-1998).
2. Participated on ESSIC Search Committee (1997-1999).
3. Served on School of Engineering Dean’s Review Committee (1998).
4. Served on Search Committee of Chemical Engineering Department Chair (1998-1999).

**iii. *Campus and University***

# University of Maryland

1. Black Faculty and Staff Association Executive Board - Elected to serve for 2 years starting July 1996.
2. Participated on Campus-Wide Recruitment Committee (1996)
3. Judge for Spring G.R.I.D. competition (1996)
4. Graduate Council on Fellowships (1997 to 1999)
5. President’s Council on Ethnic Minority Issues (1999 to 2001)
6. Campus-Wide Recruitment Committee (1999 to 2001)

**Purdue University**

1. Member of NCAA Certification Self-Study Steering Committee
2. Chair, Academic Integrity Subcommittee, NCAA Certificaion Self-Study
3. Member of Search Committee for Director of Discovery Learning Center
4. Member of University Learning Outcomes Assessment Group
5. Chair of Selection Committee for the President’s Leadership Class
6. Member of Special Emphasis Task Force: Synergies Between Science/Engineering and Liberal Arts/Social Sciences
7. Member of Associate Deans of Engagement
8. Member of Core Curriculum Task Force (2009 to 2010)
9. Member of Committee on Matters and Interactions Committee (review of PHYS 171 and 172)
10. Member of Associate Deans for Academic Affairs (2006 to present)
11. Member of Associate Deans for Learning group that meets with Vice Provost Whittaker (2010 to present)
12. Member of Instructional Equipment Committee (2010 to present)
13. Member of Governance of Undergraduate Curricula Committee (2010 to 2011)
14. Co-Chair Foundations of Excellence Committee – All Students Dimensions (2011 to February 2012)
15. Member, Foundations of Excellence Steering Committee (2011 to February 2012)
16. Member, Course Needs Committee (September 2012 to present)
17. Member, Search Committeee for Dean of Honors College (December 2012 to March 2013)
18. Member, Search Committee for University Registrar (June 2013 to present)
19. Undergraduate Educational Affairs Council (2015 to present)
    1. **Awards and Honors-N/A**

# University of Maryland

1. AIChE Student Chapter – Outstanding Teacher of the Year Award – May 1999.

**Purdue University**

1. College of Engineering Outstanding Mentoring Award – (2006)
2. University Faculty Scholar – (2003-2007)
3. School of Chemical Engineering Murphy Teaching Award Nominee (2008)
4. One of Three College of Engineering Murphy Teaching Award Nominees (2008)
5. College of Engineering Research Team Award (2010).
6. School of Chemical Engineering Murphy Teaching Award Nominee (2012)
7. Nominated by Dean for Membership in Teaching Academy (2013)
8. Reilly Professor of Chemical Engine
9. Robert B. and Virginia V. Covalt Professor of Chemical Engineering