

## Curriculum Vitae of David Owen Wipf

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**Address:** Box 9573, Department of Chemistry  
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**Date of Birth:** June 7, 1962

**Research Interests:** Electrochemistry with analytical, physical, and materials applications. Specialization in scanning electrochemical microscopy (SECM). Developing new SECM methods for use in surface catalysis, materials for energy applications, and interfacial electron transfer.

**Education:** Postdoctoral Fellow, University of Texas at Austin  
June 1989 to July 1992  
Research Area: "Scanning Electrochemical Microscopy"  
Postdoctoral Advisor: Prof. Allen J. Bard

Ph. D. in Analytical Chemistry, Indiana University,  
Bloomington, Indiana, July 1989.  
Dissertation Title: "Fast-Scan Cyclic Voltammetry at Ultramicroelectrodes"  
Major Professor: Prof. R. Mark Wightman

B. S. in Chemistry, The University of South Dakota,  
Vermillion, South Dakota May 1984

**Academic Positions:** Assistant Professor, Department of Chemistry  
Mississippi State University, July 1992 to August 1997

Associate Professor, Department of Chemistry  
Mississippi State University, August 1997 to August 2003

Visiting Professor, Département de Chimie de  
l'Ecole Normale Supérieure, Paris France, January, June, and July 2003

Professor, Department of Chemistry  
Mississippi State University, August 2003 to present

Visiting Professor, Department of Chemistry  
Warwick University, Coventry UK – June 2005

**Honors:** 2005 Named the Henry Family Dean's Distinguished Professor of Chemistry  
2002 College of Arts and Science Faculty Research Award (MSU)  
Monsanto Fellowship (1987-1988)

**Professional Affiliations:** The American Chemical Society                      The Electrochemical Society  
Society for Electroanalytical Chemistry              IUPAC  
The American Association for the                      Sigma Xi  
Advancement of Science

### Refereed Publications ([link to DOI at citation #](#))

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- [\\*69.](#) "Tuning the Copper(II)/Copper(I) Redox Potential for More Robust Copper-Catalyzed C–N Bond Forming Reactions," *Eur. J. Inorg. Chem.*, J D Cope, H U Valle, R S Hall, K M Riley, E Goel, S Biswas, M P Hendrich, D O Wipf, S L Stokes, and J P Emerson **2020**, 1278-1285. <https://doi.org/10.1002/ejic.201901269>
- [\\*68.](#) "Protective action of semi-fluorinated perfluorocyclobutyl polymer coatings against corrosion of mild steel," *J. Mater. Sci.*, E. B. Caldona, D. W. Smith, Jr., D. O. Wipf, **2020**, 55, 1795. <https://doi.org/10.1007/s10853-019-04025-2>
- [67.](#) "Graphitic-Shell Encapsulation of Metal Electrocatalysts for Oxygen Evolution, Oxygen Reduction, and Hydrogen Evolution in Alkaline Solution," *Adv. Energy. Mat.*, H. Khani, N. S. Grundish, D. O. Wipf, J. B. Goodenough, **2020**, 10, 1903215. <https://doi.org/10.1002/aenm.201903215>
- [\\*66.](#) "Fabrication of Tip-Protected Polymer-Coated Carbon-Fiber Ultramicroelectrodes and pH Ultramicroelectrodes," *J. Electrochem. Soc.*, H. Khani, D. O. Wipf, **2019**, 166, B673-B679.
- [\\*65.](#) "Initial Electrochemical Activity of Magnesium Alloy AZ31 Surface Exposed to Simulated Body Fluid by Scanning Electrochemical Microscopy," *Biomed. J. Sci. & Tech. Res.*, E. Mena, L. Veleva, D.O. Wipf, **2019**, 13, 1-6.
- [\\*64.](#) "Modeling and experimental calibration of the corrosion of RHA steel in immersion and salt-fog environments," *Corros. Eng., Sci. Technol.*, L. A. Jordan, M. A. Tschopp, T. E. Mlsna, D. Wipf, M. F. Horstemeyer, **2018**, 1-8.
- [\\*63.](#) "Multi-Scale Monitoring the First Stages of Electrochemical Behavior of AZ31B Magnesium Alloy in Simulated Body Fluid," *J. Electrochem. Soc.*, Emmanuel Mena Morcillo, Lucien Veleva, D. O. Wipf, **2018**, 165, C749-C755.
- [\\*62.](#) "Modifying Current Collectors to Produce High Volumetric Energy Density and Power Density Storage Devices," Hadi Khani, D. O. Wipf, *ACS Appl. Mater. Interfaces*, **2018**, 10, 21262-21280.
- [\\*61.](#) "In situ Investigation of the Initial Stages of AZ91D Magnesium Alloy Biodegradation in Simulated Body Fluid," Emmanuel Mena Morcillo, Lucien Veleva, D. Wipf *International Journal of Electrochemical Science*, **2018**, 13, 5141 – 5150.
- [\\*60.](#) "Iron oxide nanosheets and pulse-electrodeposited Ni-Co-S nanoflake arrays for high-performance charge storage," Hadi Khani, D. O. Wipf, *ACS Appl. Mater. Interfaces*, **2017**, 9, 6967-6978.
- [\\*59.](#) "Solution pH change in non-uniform alternating current electric fields at frequencies above the electrode charging frequency," R. An, Massa, K.; D. O. Wipf, and A. R. Minerick, *Biomicrofluidics*, **2014**, 8, 064126.
- [\\*58.](#) "Spatially variant red blood cell crenation in alternating current non-uniform fields," R. An, D. O. Wipf, and A. R. Minerick, *Biomicrofluidics*, **2014**, 8, 021803.
- [\\*57.](#) "A nanoscopic insight into electrocatalytic origins of the mercury monolayer carbon fiber electrode depicted by fast cyclic voltammetry," G. Munteanu, D. Wipf, E. Dempsey, T. McCormac, S. Munteanu, *J. Electroanal. Chem.* **2014**, 720-721, 9-18.

- \*56. "A New Charging Method for Li-Ion Batteries: Dependence of the Charging Time on the Direction of an Additional Oscillating Field," Ibrahim Abou Hamad, M. A. Novotny, D. O. Wipf, and P. A. Rikvold, *ECS Transactions* **2011**, *33*, 33-37.
- \*55. "A new battery-charging method suggested by molecular dynamics simulations," Ibrahim Abou Hamad, M. A. Novotny, D. O. Wipf, and P. A. Rikvold, *Phys. Chem. Chem. Phys.*, **2010**, *12*, 2740-2743. Note: Front cover of PCCP volume 12, issue 11
- \*54. "Rapid Determination of Zeptomole Quantities of Pb<sup>2+</sup> with the Mercury Monolayer Carbon Fiber Electrode," Grigore Munteanu, Sorin Munteanu, and David O. Wipf, *J. Electroanal. Chem.*, **2009**, *632*, 177-183.
- \*53. "Fabrication of Carbon-Encapsulated Mono- and Bimetallic (Sn and Sn/Sb Alloy) Nanorods. Potential Lithium-Ion Battery Anode Materials," Sang Ho Lee, Martin Mathews, Hossein Toghiani, David O. Wipf, and Charles U. Pittman, Jr., *Chemistry of Materials*, **2009**, *21*, 2306-2314.
- \*52. "Local Electron-Transfer Rate Measurements on Modified and Unmodified Glassy-Carbon Electrodes" Robert C. Tenent and David O. Wipf, *J. Solid State Electrochem.*, **2009**, *80*, 583-590
- \*51. "Imaging of Metal Ion Dissolution and Electrodeposition by Anodic Stripping Voltammetry – Scanning Electrochemical Microscopy" Mario Alpuche-Aviles, John E. Baur, and David O. Wipf, *Anal. Chem.*, **2008**, *80*, 3612–3621.
50. "An In-situ Electrochemical STM Study of Potential-Induced Coarsening and Corrosion of Platinum Nano Crystals," Qingmin Xu, Eric Kreidler, David Wipf, and Ting He, *J. Electrochem. Soc.*, **2008**, *155*, B228-B231.
49. "Feedback Effects in Combined Fast-Scan Cyclic Voltammetry-Scanning Electrochemical Microscopy," Daniel S. Schrock, David O. Wipf, and John E. Baur, *Anal. Chem.*, **2007**, *79*, 4931-4941.
- \*48. "Microparticle-Based Iridium Oxide Ultramicroelectrodes for pH Sensing and Imaging," Emad El-Deen M. El-Giar and David O. Wipf, *J. Electroanal. Chem.*, **2007**, *609*, 147-154.
47. "In Situ Electrochemical STM Study of the Coarsening of Platinum Islands at Double-Layer Potentials," Qingmin Xu, Ting He, and David O. Wipf, *Langmuir*, **2007**, *23*, 9098-9103.
- \*46. "Fast-Scan Cyclic Voltammetry - Scanning Electrochemical Microscopy," Luis Díaz-Ballote, Mario Alpuche-Aviles, and David O. Wipf, *J. Electroanal. Chem.*, **2007**, *604*, 17-25.
45. "An Electrochemical STM Study of Coarsening and Corrosion of Platinum Films," Qingmin Xu, Eric Kreidler, David Wipf, and Ting He, *ECS Trans.*, **2007**, *11*(1), 1279-1287.
44. "Simple Fabrication of a Silver Epoxy Coated Microelectrode for SECM Imaging in Small Volumes," Luis Díaz-Ballote and David O. Wipf, *ECS Trans.*, **2007**, *3*(31), 249-258.
- \*43. "Preparation of Tip-Protected Poly(oxyphenylene) Coated Carbon-Fiber Ultramicroelectrodes," Emad El-Deen M. El-Giar and David O. Wipf, *Electroanalysis*, **2006**, *18*, 2281-2289.
42. "Scanning Electrochemical Microscopy of Model Neurons: Constant Distance Imaging," Ruwan T. Kurulugama, David O. Wipf, Sara A. Takacs, Sirinun Pongmayteegul, Paul A. Garris, and John E. Baur, *Anal. Chem.*, **2005**, *77*, 1111 -1117.

- \*41. "Review of laboratory and outdoor exposure efficacy results of organic biocide: Antioxidant combinations, an initial economic analysis and discussion of a proposed mechanism," Tor P. Schultz, Darrel D. Nicholas, William P. Henry, Charles U. Pittman, David O. Wipf and Barry Goodell, *Wood Fiber Sci.*, **2005**, *37*, 175-184.
- \*40. "Voltammetry and Surface Analysis of AISI 316 Stainless Steel in Chloride-Containing Simulated Concrete Pore Environment," Lucien Veleva, Mario Alpuche-Aviles, Melissa K. Graves-Brook, and David O. Wipf, *J. Electroanal. Chem.*, **2005**, *578*, 45-53.
- \*39. "Activity of SiC Particles in Al-Based Metal Matrix Composites Revealed by SECM," L. Díaz-Ballote, David O. Wipf, L. Veleva, M. A. Pech-Canul, M. I. Pech-Canul, *J. Electrochem. Soc.*, **2004**, *151*, B299-B303.
- \*38. "Voltammetry Simulations with Spreadsheets," David O. Wipf, *Submitted to J. Chem. Ed., In revision.*
37. "Investigations of PC12 Cells with the BioSECM. 1. Redox Mediator Evaluation and Real-Time Measurements of Morphological Changes," Johanna M. Liebetrau, Heather M. Miller, John E. Baur, Sara A. Takacs, Rick Crous, Vipave Anupunpisit, Paul A. Garris, David O. Wipf, *Anal. Chem.*, **2003**, *75*, 563-571.
- \*36. "Patterning and Imaging of Oxides on Glassy Carbon Electrode Surfaces by Scanning Electrochemical Microscopy," Robert C. Tenent and David O. Wipf, *J. Electrochem. Soc.*, **2003**, *150*, E131-E139.
- \*35. "An in situ Electrochemical Study of Electrodeposited Nickel and Nickel-Yttrium Oxide Composite Using Scanning Electrochemical Microscopy," L. Veleva, L. Diaz-Ballote and David O. Wipf, *J. Electrochem. Soc.*, **2003**, *150*, C1-C6.
- \*34. "Comparative Cyclic Voltammetry and Surface Analysis of Passive Films Grown on 316 Stainless Steel in Concrete Pore Model Solutions," Mario Alpuche-Aviles, L. Veleva, and David O. Wipf, *J. Electroanal. Chem.*, **2002**, *537*, 85-93.
- \*33. "Impedance Feedback Control for Scanning Electrochemical Microscopy," Mario A. Alpuche-Aviles and David O. Wipf, *Anal. Chem.*, **2001**, *73*, 4873-4881.
- \*32. "Conductivity Detection for Monitoring Mixing Reactions in Microfluidic Devices," Yan Liu, David O. Wipf and Charles S. Henry *Analyst*, **2001**, *126*, 1248-1251.
- \*31. "Fabricating and Imaging Carbon-Fiber Immobilized Enzyme Ultramicroelectrodes with Scanning Electrochemical Microscopy," Fuyun Ge, Robert C. Tenent and David O. Wipf, *Anal. Sci.* **2001**, *17*, 27-35.
- \*30. "UV/Ozone Pretreatment of Glassy Carbon Electrodes," Junfeng Zhou and David O. Wipf, *J. Electroanal. Chem.*, **2001**, *499*, 121-128.
- \*29. "Microscopic Measurement of pH with Iridium Oxide Microelectrodes," David O. Wipf, Fuyun Ge, Thomas W. Spaine, John E. Baur, *Anal. Chem.*, **2000**, *72*, 4921-4927.
- \*28. "Crystallographic and Stereoscopic Characterization of Tetrakis( $\mu$ -N,N-diarylfornamidinato)dichlorodirhenium(III,III) Compounds," Judith L. Eglin, Chun Lin, Tong Ren, Laura Smith, Richard J. Staples, and David O. Wipf, *Euro. J. of Inorg. Chem.* **1999**, 2095-2013.

- [\\*27.](#) "Synthesis of Multiply-Bonded Dichromium Complexes with a Variety of Formamidinate Ligands," Kathryn M. Carlson-Day, Judith L. Eglin, Chun Lin, Laura T. Smith, Richard J. Staples, and David O. Wipf, *Polyhedron*, **1999**, *18*, 817-824.
- [26.](#) "Selective Determination of Methylmercury by Flow-Injection Fast-Scan Voltammetry," Rebecca Lai, Eva L Huang, Feimeng Zhou, and David O. Wipf, *Electroanalysis*, **1998**, *10*, 926-930.
- [\\*25.](#) "Localized Avidin/Biotin Derivatization of Glassy Carbon Electrodes Using Scanning Electrochemical Microscopy", Wilbur B. Nowall, David O. Wipf, and Werner G. Kuhr, *Anal. Chem.*, **1998**, *70*, 2601-2606.
- [\\*24.](#) "Breakdown of the Iron Passive Layer by use of the Scanning Electrochemical Microscope," John W. Still and David O. Wipf *J. Electrochem. Soc.*, **1997**, *144*, 2657-2665.
- [\\*23.](#) "Construction of Gold Micro-Bead Electrodes," Deon T. Miles<sup>+</sup>, Andrew Knedlik<sup>+</sup>, and David O. Wipf *Anal. Chem.*, **1997**, *69*, 1240-1243.
- [\\*22.](#) "Deposition of Conducting Polyaniline Patterns with the Scanning Electrochemical Microscope," Junfeng Zhou and David O. Wipf *J. Electrochem. Soc.*, **1997**, *144*, 1202-1207.
- [\\*21.](#) "Ohmic Drop Compensation in Voltammetry: Iterative Correction of the Applied Potential," David O. Wipf *Anal. Chem.*, **1996**, *68*, 1871-1876.
- [\\*20.](#) "Initiation and Study of Localized Corrosion by Scanning Electrochemical Microscopy," David O. Wipf *Colloids and Surfaces A*, **1994**, *93*, 251-261.
- [19.](#) "Scanning Electrochemical Microscopy. 21. Constant-Current Imaging," David O. Wipf, Allen J. Bard, and Dennis E. Tallman *Anal. Chem.*, **1993**, *65*, 1373-1377.
- [18.](#) "Scanning Electrochemical Microscopy. 15. Improvements in Imaging via Tip-Position Modulation and Lock-In Detection," David O. Wipf and Allen J. Bard *Anal. Chem.*, **1992**, *64*, 1362-1367.
- [17.](#) "Chemical Imaging of Surfaces with the Scanning Electrochemical Microscope," Allen J. Bard, Fu-Ren F. Fan, David T. Pierce, Patrick R. Unwin, David O. Wipf, and Feimeng Zhou *Science*, **1991**, *254*, 68-74.
- [16.](#) "Scanning Electrochemical Microscopy. 12. Theory and Experiment of the Feedback Mode with Finite Heterogeneous Electron-Transfer Kinetics and Arbitrary Substrate Size," Allen J. Bard, Michael V. Mirkin, Patrick R. Unwin, David O. Wipf *J. Phys. Chem.*, **1992**, *96*, 1861-1868.
- [15.](#) "The Application of Rapid Scan Cyclic Voltammetry to a Study of the Oxidation and Dimerization of N,N-Dimethylaniline in Acetonitrile," Hongjun Yang, David O. Wipf, Allen J. Bard *J. Electroanal. Chem.*, **1992**, *331*, 913-924.
- [14.](#) "Scanning Electrochemical Microscopy. 11. Improvement of Image Resolution by Digital Processing Techniques," Chongmok Lee, David O. Wipf, Allen J. Bard, Keith Bartels, and Alan C. Bovik *Anal. Chem.*, **1991**, *63*, 2442-2447.
- [13.](#) "Scanning Electrochemical Microscopy. 10. High Resolution Imaging of Active Sites on an Electrode Surface," David O. Wipf and Allen J. Bard *J. Electrochem. Soc.*, **1991**, *138*, L4-L6.

12. "Scanning Electrochemical Microscopy," Allen J. Bard, Patrick R. Unwin, David O. Wipf, and Feimeng Zhou *Am. Inst. Phys., Conf. Proc.*- 241; K. Wickramasinge, Ed.; American Institute of Physics: New York, 1992; pp. 235-247.
- [11.](#) "Scanning Electrochemical Microscopy. Part 7. Effect of Heterogeneous Electron-Transfer Rate at the Substrate on the Tip Feedback Current," David O. Wipf and Allen J. Bard *J. Electrochem. Soc.*, **1991**, *138*, 469-474.
- [10.](#) "Scanning Electrochemical Microscopy: A New Technique for the Characterization and Modification of Surfaces," Allen J. Bard, Guy Denuault, Chongmok Lee, Daniel Mandler, and David O. Wipf *Acc. Chem. Res.*, **1990**, *23*, 357-363.
- [9.](#) "High-Speed Cyclic Voltammetry," R. Mark Wightman and David O. Wipf *Acc. Chem. Res.*, **1990**, *23*, 64-70.
- [8.](#) "Voltammetry with Microvoltammetric Electrodes in Resistive Solvents under Linear Diffusion Conditions," David O. Wipf and R. Mark Wightman *Anal. Chem.*, **1990**, *62*, 98-102.
- [7.](#) "Microdisk Electrodes. II. Fast-Scan Cyclic Voltammetry with Very Small Electrodes," David O. Wipf, Adrian C. Michael, and R. Mark Wightman *J. Electroanal. Chem.*, **1989**, *269*, 15-25.
- [6.](#) "Rapid Cleavage Reactions of Haloaromatic Radical Anions Measured with Fast-Scan Cyclic Voltammetry," David O. Wipf and R. Mark Wightman *J. Phys. Chem.*, **1989**, *93*, 4286-4291.
- [5.](#) "Voltammetry at Ultramicroelectrodes," R. Mark Wightman and David O. Wipf, *Electroanalytical Chemistry*, A. J. Bard, Ed.; Marcel Dekker: New York, 1989; Vol. 15.
- [4.](#) "Submicrosecond Measurements with Cyclic Voltammetry," David O. Wipf and R. Mark Wightman *Anal. Chem.*, **1988**, *60*, 2460-2464.
- [3.](#) "Fast-Scan Cyclic Voltammetry as a Method to Measure Rapid Heterogeneous Electron-Transfer Kinetics," David O. Wipf, Eric W. Kristensen, Mark R. Deakin, and R. Mark Wightman *Anal. Chem.*, **1988**, *60*, 306-310.
- [2.](#) "Disproportionation of Quinone Radical Anions in Protic Solvents at High pH," David O. Wipf, Kenneth R. Wehmeyer, and R. Mark Wightman *J. Org. Chem.*, **1986**, *51*, 4760-4764.
1. "Ultramicroelectrodes," R. Mark Wightman, Mark R. Deakin, David O. Wipf, and Paul Kovach *Proceedings of the Workshop on Electrochemical Education*, The Electrochemical Society, 1986.

### Invited Publications

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- [5.](#) "Review of Analytical Electrochemistry," David O. Wipf *Anal. Chem.*, **2007**, *79*, 8846.
- [4.](#) "Analytical and Digital Instrumentation," David O. Wipf in *The Encyclopedia of Electrochemistry, Vol 3: Instrumentation and Electroanalytical Chemistry*, A. J. Bard, M. Stratmann, and G. S. Wilson, Eds, Vch Verlagsgesellschaft MbH, Weinheim, 2003.

3. "Scanning Electrochemical Microscopy," David O. Wipf in *The Encyclopedia of Imaging Science and Technology*, J. P. Hornak, Ed, John Wiley & Sons, Inc., New York, 2002, pp 1248-1259.
2. "Instrumentation," David O. Wipf in *Scanning Electrochemical Microscopy*, A. J. Bard and M. V. Mirkin, Eds, Marcel Dekker, New York, 2001, pp. 17-74.
1. "Scanning Electrochemical Microscopy," David O. Wipf in *Current Protocols: Methods in Materials Research*, E.N. Kaufmann et al., Eds, John Wiley & Sons, Inc, New York, 2000. 7c.2.1-7c.2.18.

## Patents

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[U. S. Patent #5382336](#) "Tip Position Modulation and Lock-in Detection in Scanning Electrochemical Microscopy", David O. Wipf and Allen J. Bard.

## Presentations

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- \*64. "Induction Heated Electrodes: Variable Temperature Electrocatalyst Interrogation" Timothy J. Dowell and David O. Wipf at Mátrafüred 2019, Visegrád Hungary, Jun 16-21, 2019.
- \*63. "Inductive heated electrodes," David O. Wipf, M. A. Rahman, and Timothy J. Dowell at SERMACS 2018, Augusta GA, Oct 31 – Nov 3, 2018. **(Invited)**
- \*62. "Examining electrocatalytic activity at pseudo-single-crystals with scanning electrochemical microscopy," David O. Wipf, T. J. Dowell, and Y. Wang at the American Chemical Society Meeting, Boston MA, Aug 19 – 20, 2018. **(Invited)**
- \*61. "Development of an Inductively Heated Ultramicroelectrode for SECM," David O. Wipf and Timothy J. Dowell at the 229<sup>th</sup> Meeting of the Electrochemical Society, San Diego CA, May 29-June 2, 2016. **(Invited)**
- \*60. "Synthesis and Evaluation of an Iron Carbide/Carbon Composite for use as a Supercapacitor Material," David O. Wipf at the 14th Southern School on Computational Chemistry and Materials Science Conference, Jackson MS, July 24-25, 2014. **(Invited)**
- \*59. "Improved Li/CF<sub>x</sub> Cells with Partial Reduction of CF<sub>x</sub>," David O. Wipf, Martin Mathews, and Charles U. Pittman, Jr. at IMLB 2014—the 17<sup>th</sup> International Meeting on Lithium Batteries, Como Italy, June 10-14, 2014.
- \*58. "Reaction Rate and Reactive Species Imaging with the Scanning Electrochemical Microscope," David O. Wipf at Jackson State University at Jackson, MS, March 21, 2014. **(Invited)**
- \*58. "New Imaging Ideas in Scanning Electrochemical Microscopy," David O. Wipf at the University of Louisiana, Monroe, Monroe LA, April 12, 2011. **(Invited)**
- \*57. "New Imaging Techniques in Scanning Electrochemical Microscopy," David O. Wipf at Auburn University, Auburn AL, Oct 1, 2009. **(Invited)**
- \*56. "SECM – Beyond Amperometry," David O. Wipf at the 5th Scanning Electrochemical Microscopy Workshop, Blue Mountain Lake, NY, Aug 24-28, 2008.
- \*55. "Constant Distance SECM Imaging with the Tip-Position-Modulation Impedance Mode," David O. Wipf at the 212<sup>th</sup> Meeting of the Electrochemical Society, Washington DC, Oct 7-12, 2007. **(Invited)**

- \*54. "Multidimensional Imaging with Scanning Electrochemical Microscopy.," David O. Wipf at the University of Southern Mississippi, Hattiesburg MS, Feb. 14, 2007. **(Invited)**
- \*54. "Multi-Image Techniques in Scanning Electrochemical Microscopy," David O. Wipf at Georgia Tech University, Atlanta GA, Nov. 30, 2006. **(Invited)**
- \*53. "SECM Imaging with the TPM-Impedance (TPMZ) Mode," David O. Wipf at the 4th Workshop on Scanning Electrochemical Microscopy (SECM) at Falcade, Italy September 3 - 6, 2006.
- \*52. "Multidimensional Images in Scanning Electrochemical Microscopy," David O. Wipf at the University of Pittsburgh, Pittsburgh, PA, Sept. 8, 2005. **(Invited)**
- \*51. "Chemical Imaging Possibilities with Scanning Electrochemical Microscopy," David O. Wipf at the South Dakota School of Mines and Technology, Rapid City, SD, June 20, 2005. **(Invited)**
- \*50. "Multidimensional Imaging with Scanning Electrochemical Microscopy," David O. Wipf at Warwick University, Coventry, UK, June 10, 2005. **(Invited)**
- \*49. "Multidimensional Imaging with the Scanning Electrochemical Microscope," David O. Wipf at Imperial College, London, UK, June 8, 2005. **(Invited)**
- \*48. "Multidimensional Imaging with the Scanning Electrochemical Microscope," David O. Wipf at the Oxford University, Oxford, UK, June 7, 2005. **(Invited)**
- \*47. "Multidimensional Imaging with Scanning Electrochemical Microscopy," David O. Wipf at the University of Southampton, Southampton, UK, June 1, 2005. **(Invited)**
- \*46. "New Imaging Possibilities with Fast-Scan Cyclic Voltammetry Scanning Electrochemical Microscopy," David O. Wipf at the 3rd Workshop on Scanning Electrochemical Microscopy, Dublin, Ireland June 11-12, 2004.
- \*45. "New Imaging Possibilities with Fast-Scan Cyclic Voltammetry Scanning Electrochemical Microscopy," David O. Wipf, M. Alpuche-Aviles (Mississippi State University), and L. Diaz-Ballote at the 205<sup>th</sup> Meeting of the Electrochemical Society, San Antonio, TX, May 9-14, 2004. **(Invited)**
- \*44. "Multi-Dimensional Imaging in Scanning Electrochemical Microscopy," David O. Wipf at Middle Tennessee State University, Murfreesboro, TN March 18, 2004.
- \*43. "Fast-Scan Stripping Voltammetry Imaging With the Scanning Electrochemical Microscope," David O. Wipf and Mario A. Alpuche Aviles, at The 226th ACS National Meeting, New York, NY, September 7-11, 2003.
- \*42. "Voltammetry Simulations by Spreadsheets," David O. Wipf, at The 226th ACS National Meeting, New York, NY, September 7-11, 2003.
- \*40. "Fast-Scan Stripping Voltammetry Imaging with Scanning Electrochemical Microscopy," David O. Wipf, Mario A. Alpuche Aviles, and Luis Díaz-Ballote at Journées d'Électrochimie 2003, Poitiers, France, June 3-6, 2003.
- #\*39. "Multidimensional Imaging in Scanning Electrochemical Microscopy", David O. Wipf, Université Claude Bernard, Lyon, France, May 23, 2003. **(Invited)**
- #\*38. "Multidimensional Methods in Scanning Electrochemical Microscopy", David O. Wipf, Université de Paris VI, Jussieu, Paris, France, May 13, 2003. **(Invited)**



- \*37. "Scanning Electrochemical Microscopy Examination of the O<sub>2</sub> Reduction on Cast Iron - E.E.-D. El-Giar and David O. Wipf, at the 203<sup>rd</sup> Meeting of the Electrochemical Society, Paris, France, April 27-May2, 2003.
- #\*36. "Multidimensional Imaging with Scanning Electrochemical Microscopy", David O. Wipf, University of Warwick, England, Feb. 27, 2003. **(Invited)**
- #\*35. "Multidimensional Scanning Electrochemical Microscopy", David O. Wipf, Truman State University, Kirksville, MO, Sept. 27, 2002. **(Invited)**
- \*34. "Constant-Distance Scanning in SECM," David O. Wipf, Mario A. Alpuche Aviles, and Emad El-Deen M. El-Giar at PittCon 2001, New Orleans, LA, March 4-9, 2001.
- #\*33. "Applications of Scanning Electrochemical Microscopy," David O. Wipf, CINVESTAV Unidad Mérida, March 16, 1999, Mérida, Yucatan, Mexico. **(Invited)**
- #\*32. "Microscale Surface Chemistry with the Scanning Electrochemical Microscope," David O. Wipf, at the XIV National Congress of the Mexican Electrochemical Society, August 24-28, 1999, Mérida, Yucatan, Mexico. **(Invited)**
- #\*31. "Measurement of Local Electron-Transfer Rates on Electrodes with SECM," David O. Wipf and Robert C. Tenent at the 25<sup>th</sup> Annual Conference of the Federation of Analytical Chemistry and Spectroscopy Societies, October 11-15, 1998, Austin TX. **(Invited)**
- #\*30. "Micro-Scale Electrochemistry with the Scanning Electrochemical Microscope," David O. Wipf, Auburn University, AL, May 15, 1998. **(Invited)**
- #\*29. "Heterogeneously Modified Carbon Fiber Ultramicroelectrodes," D. Wipf, R. C. Tenent, F. Ge, and J. Baur at the 193<sup>th</sup> Meeting of the Electrochemical Society, May 5, 1998, San Diego CA. **(Invited)**
- \*28. "Modified Carbon Fiber Ultramicroelectrodes," D. O. Wipf, R. C. Tenent, F. Ge, at Mississippi EPSCoR Conference, January 22, 1998, Jackson, MS.
- #\*27. "Investigation of Localized Corrosion with the Scanning Electrochemical Microscope," J. W. Still and D. O. Wipf, at the 1<sup>st</sup> International Workshop on Scanning Electrochemical Microscopy, September 7, 1997, Freiburg, Germany **(Invited)**
- \*26. "Formation and Imaging of Heterogeneously Modified Carbon Fiber Ultramicroelectrodes," D. O. Wipf, R. C. Tenent, F. Ge, at Electrochem '97 August 29, 1997, London, England
- #\*25. "Local Modification of Electrode Surfaces by the Scanning Electrochemical Microscope," D. O. Wipf, University of South Dakota, November 18, 1996. **(Invited)**
- #\*24. "Local Modification of Electrode Surfaces by the Scanning Electrochemical Microscope," D. O. Wipf, University of Wisconsin - Eau Claire, November 15, 1996. **(Invited)**
- #\*23. "Local Modification of Electrode Surfaces by the Scanning Electrochemical Microscope," D. O. Wipf, University of Southern Mississippi, October 25, 1996. **(Invited)**
- \*22. "Examination of Passive Layer Breakdown and Formation with the Scanning Electrochemical Microscope", John W. Still and David O. Wipf at the 190<sup>th</sup> Meeting of the Electrochemical Society, Oct. 10, 1996, San Antonio, TX.

- #\*21. Local Modification and Imaging of Surfaces by the Scanning Electrochemical Microscope," D. O. Wipf, Paper #8, Great Lakes Regional Meeting of the American Chemical Society, May 19-22, 1996, Normal, IL. **(Invited)**
- #\*20. Local Modification and Imaging of Surfaces by the Scanning Electrochemical Microscope," D. O. Wipf, April 4, 1996, presented at the University of Alabama, Tuscaloosa. **(Invited)**
- #\*19. Local Modification and Imaging of Surfaces by the Scanning Electrochemical Microscope," D. O. Wipf, March 8, 1996 presented at Illinois State University, Normal, IL. **(Invited)**
- \*18. Initiation of Localized Corrosion on Iron with the Scanning Electrochemical Microscope," David O. Wipf and John W. Still, Paper #746, Pittsburgh Conference and Exposition, March 6, 1996, Chicago, IL.
- \*17. Generation and Imaging of Derivatized Regions on Carbon Electrodes by the Scanning Electrochemical Microscope," David O. Wipf, Robert C. Tenent, and Louis H. Bluhm<sup>†</sup>, Paper #745, Pittsburgh Conference and Exposition, March 6, 1996, Chicago, IL.
- \*16. Analytical Applications of Paired Carbon-Fiber Electrodes," John E. Baur and David O. Wipf, Paper #097, Pittsburgh Conference and Exposition, March 6, 1996, Chicago, IL.
- \*15. Initiation of Pitting Corrosion on Iron with the Scanning Electrochemical Microscope," David O. Wipf and John W. Still, Mississippi EPSCoR Conference, Jan. 31, 1996, Jackson, MS, No. 4.
- \*14. Ohmic Potential-Drop Compensation by Iterative Correction of the Applied Potential," D. O. Wipf, 47<sup>th</sup> Southeast / 51<sup>st</sup> Southwest Joint Regional Meeting of the American Chemical Society, Nov. 29-Dec. 1, 1995 Memphis, TN, No. 83.
- #\*13. Scanning Electrochemical Microscopy", D. O. Wipf, Oct. 6, 1995 presented at Tennessee Technological University, Cookeville TN. **(Invited)**
- \*12. Activation of Carbon Electrodes by UV/Ozone Treatment," D. O. Wipf and J. Zhou, Paper #256, 187<sup>th</sup> Electrochemical Society Meeting, May 21-26, 1995, Reno NV.
- #\*11. Formation and Study of Localized Corrosion by Scanning Electrochemical Microscopy," David O. Wipf, April 20, 1995, presented at Florida State University, Tallahassee FL. **(Invited)**
- #\*10. Initiation and Study of Localized Corrosion with the Scanning Electrochemical Microscope," David O. Wipf, October 21, 1994, presented at Jackson State University, Jackson MS. **(Invited)**
- \*9. Examination of Pitting Corrosion with Scanning Electrochemical Microscopy," David O. Wipf, presented at 1994 SEAAC (Southeast Academic Analytical Chemistry) Meeting, Florida State University, Tallahassee FL, September 23-24, 1994.
- #\*8. Formation and Study of Pitting Corrosion by Scanning Electrochemical Microscopy," David O. Wipf, Paper #202, presented at the 208<sup>th</sup> American Chemical Society National Meeting and Exposition, Washington DC, August 21-25, 1994. **(Invited)**
- #\*7. Scanning Electrochemical Microscopy" David O. Wipf, presented at the University of Mississippi, Oxford, MS, January 21, 1994. **(Invited)**

- #\*6. Initiation and Study of Localized Corrosion by Scanning Electrochemical Microscopy," David O. Wipf, *Surface Characterization of Adsorption and Interfacial Reactions*, Engineering Foundation Conference, January 9-14, 1994, Kona, HI. **(Invited)**
5. Constant-Current Imaging with the Scanning Electrochemical Microscope," David O. Wipf and Allen J. Bard, Paper #811, Pittsburgh Conference and Exposition, March 10, 1993, Atlanta, GA.
4. Tip-Modulated Scanning Electrochemical Microscopy," David O. Wipf and Allen J. Bard, Paper #944, Pittsburgh Conference and Exposition, March 11, 1992.
- #3. Scanning Electrochemical Microscopy for Characterization of Electrochemical and Chemical Processes at Surfaces," David O. Wipf, Guy Denuault, and Allen J. Bard, presented at the SE/SW Combined Regional Meeting of the ACS, December 6, 1990. **(Invited)**
2. Measurement of Heterogeneous and Homogeneous Rate Constants with Fast-Scan Cyclic Voltammetry," David O. Wipf and R. Mark Wightman, presented at the International Electroanalytical Symposium, May 28, 1987.
1. Measurement of Heterogeneous and Homogeneous Rate Constants with Fast-Scan Cyclic Voltammetry," David O. Wipf and R. Mark Wightman, presented at the Pittsburgh Conference and Exposition, March 9, 1987.

#### **Student and Collaborator Presentations**

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- \*72. "Corrosion Protection by Fluorinated Polymeric Materials and Simple Triazole- and Imidazole-based Aromatic Compounds," E. B. Caldona, C. Webster, H. Brown, T. K. Hollis, M. Zhang, D. O. Wipf, and D. W. Smith, Jr. at Pittcon, Chicago, Mar. 1-5, 2020.
- \*72. "Corrosion resistance of a tetrafunctional epoxy-amine resin coating," E. B. Caldona, D. O. Wipf, and D. W. Smith, Jr. at SERMACS 2019 Savannah GA, Oct. 20-23, 2019.
- \*71. "Ion-selective biochar electrodes for asymmetrical capacitive deionization," H. Stephanie, D. O. Wipf, T. Mlsna at the American Chemical Society Meeting, San Diego CA, Aug. 25-29, 2019.
- \*70. "Nonlinear Time Series Analysis of Nickel in Sulfuric Acid," D. Q. Clark, D. O. Wipf, J. B. Goodenough at the 235th Meeting of the Electrochemical Society, Dallas TX, May 26-30, 2019.
- \*69. "Nonlinear Time Series Analysis of Nickel in Sulfuric Acid," D. Q. Clark and David O. Wipf at the 235th Meeting of the Electrochemical Society, Dallas TX, May 26-30, 2019.
- \*68. "Facile Fabrication of a Superhydrophobic/Superoleophilic Surface via Nanoparticle Electroless Deposition and Perfluorinated Polymer Surface Modification." E. B. Caldona, H. O. Brown, D. O. Wipf, and D. W. Smith, Jr. at Lester Andrews Graduate Research Symposium, Starkville MS, May 21-23, 2019.
- \*67. "Oscillatory Electrochemical Behavior of Nickel in H<sub>2</sub>SO<sub>4</sub> Solutions." D. Q. Clark and D. O. Wipf at Lester Andrews Graduate Research Symposium, Starkville MS, May 21-23, 2019.
- \*66. "Ion-selective Biochar Electrodes for Asymmetrical Capacitive Deionization." H. Stephanie and D. O. Wipf at Lester Andrews Graduate Research Symposium, Starkville MS, May 21-23, 2019.

- \*65. "Nonlinear times series analysis of coated and bare copper-coupled microelectrode array sensors in different acidic environments." D. Q. Clark, David Wipf at SWRM 2018, Little Rock AR, Nov 7-10, 2018.
- \*65. "Nonlinear times series analysis of coated and bare copper-coupled microelectrode array sensors in different acidic environments." D. Q. Clark, David Wipf at SWRM 2018, Little Rock AR, Nov 7-10, 2018.
- \*64. "Corrosion inhibition of mild steel in acidic medium by simple triazole- and imidazole-based aromatic compounds," E. Caldona, M. Zhang, T.K. Hollis, C.E. Webster, D. Wipf, D.W. Smith at SWRM 2018, Little Rock AR, Nov 7-10, 2018.
- \*63. "Protective action of semi-fluorinated perfluorocyclobutyl polymer coatings against corrosion of mild steel," E. Caldona, David Wipf, D. W. Smith at SERMACS 2018, Augusta GA, Oct 31 – Nov 3, 2018.
- \*62. "Fabrication of an Induction Heated Gold Microelectrode for SECM Applications," Timothy J. Dowell and David O. Wipf David O. Wipf at PittCon 2018, Orlando, FL, Feb 26 – Mar 1, 2018.
- \*62. "Initial Corrosion Study of Magnesium Alloys in Simulated Body Fluid by SECM," E. Mena-Morcillo, L. Veleva, and David O. Wipf at the 231st Meeting of the Electrochemical Society, New Orleans, May 29, 2017.
- \*65. "Cobalt-Nickel Sulfide and Graphite-Coated Iron Carbide as Potential Materials for High-Performance Asymmetric Supercapacitors," Hadi Khani and David O. Wipf at the 229<sup>th</sup> Meeting of the Electrochemical Society, San Diego CA, May 29-June 2, 2016.
- \*64. "Electrochemical Studies of Nickel/H<sub>2</sub>SO<sub>4</sub> Oscillating Systems and the Preparation and Testing of Copper Coupled Microelectrode Array Sensors," David Q. Clark and David O. Wipf at the 229th Meeting of the Electrochemical Society, San Diego CA, May 29-June 2, 2016.
- \*63. "Fabrication of an Induction Heated Gold Microelectrode for SECM Applications," Timothy J. Dowell and David O. Wipf at the 229th Meeting of the Electrochemical Society, San Diego CA, May 29-June 2, 2016.
- \*62. "Graphite-coated iron carbide nanoparticles embedded in a porous carbon matrix as a supercapacitor material," H. Khani and D. O. Wipf at the 2014 Southeast Regional Meeting of the American Chemical Society, Nashville, TN, Oct 16-19, 2014.
- 61. "Spatially Variant Red Blood Cell Crenation and pH Gradients in AC Non-uniform Fields; A. Minerick, R. An, K. Massa, D. O. Wipf at SciX 2014 National Meeting for Applied Spectroscopy, Reno NV, Sept 28-Oct 3, 2014.
- \*60. "Simple, Low-Cost Synthesis of an Iron Oxide and Carbon Foam Composite for Supercapacitor Electrodes," H. Khani and D. O. Wipf at the 225th Meeting of the Electrochemical Society, Orlando FL, May 11-15, 2014.
- \*59. "Visualizing hydrogen oxidation reaction activity of polycrystalline platinum by scanning electrochemical microscopy (SECM)," Y. Wang and D. O. Wipf at the 2013 Southeast Regional Meeting of the American Chemical Society, Richmond, GA, Nov 12-16, 2013.
- \*58. "High-resolution scanning electrochemical microscopy pH imaging using carbon-fiber ultramicroelectrodes modified by iridium-oxide-nanoparticles," H. Khani and D. O. Wipf

- at the 2013 Southeast Regional Meeting of the American Chemical Society, Atlanta GA, Nov 12-16, 2013.
- \*57. "Characterization of PANI/VGCNF systems synthesized by semi-dilute in situ polymerization," Maria C. Cebada-Ricalde and D. O. Wipf. The 2011 Southeast Regional Meeting of the American Chemical Society, Richmond, VA, Oct 26-29, 2011.
  - 56. "Anode-electrolyte Double-layer of Li-ion Batteries: Structure and Li-ion Intercalation," I. Abou Hamad, M. A. Novotny, D. O. Wipf, and P. A. Rikvold. At the March Meeting of The American Physical Society, March 21-25, 2011, Dallas, TX.
  - \*55. "Electrochemical properties of poly(oxyphenylene)-coated mild steel substrates in 3.5% NaCl aqueous solution," Sahar M Atwa, David O Wipf, and Emad M El-Giar, The 62nd Southeast/66th Southwest Regional Meeting of the American Chemical Society, New Orleans, LA, Nov 30-Dec 10, 2010.
  - \*54. "AC-SECM Imaging of Metal Ions," Migelhewa Kaumal and David O Wipf, The 62nd Southeast/66th Southwest Regional Meeting of the American Chemical Society, New Orleans, LA, Nov 30-Dec 10, 2010.
  - \*53. "Nanomechanical and conductive study of PANI/VGCNF system by AFM," Maria C Cebada-Ricalde and David O Wipf, The 62nd Southeast/66th Southwest Regional Meeting of the American Chemical Society, New Orleans, LA, Nov 30-Dec 10, 2010.
  - \*52. "Charging Time Dependence of a New Charging Method on the Direction of an Additional Oscillating Field," I. Abou Hamad, M. A. Novotny, David Wipf, and Per Arne Rikvold at the 218th Meeting of the Electrochemical Society, Las Vegas, NV Oct 10-15, 2010.
  - \*51. "A new battery-charging method using an oscillating field: Amplitude and frequency dependence of charging time," Abou Hamad, Ibrahim; Novotny, M. A.; Wipf, David; Rikvold, Per Arne at American Physical Society, March Meeting 2010, Portland, OR, March 15-19, 2010, abstract #A11.014
  - \*50. "Enhanced Sacrificial-SECM Imaging of Hydroxyl Radical," Migelhewa N. Kaumal and David O. Wipf at PittCon 2010, Orlando, FL, March 1-5, 2010.
  - \*49. "Production of Gold Nanoparticles with the Scanning Electrochemical Microscope", Steven Kelley and David O. Wipf, Honors Undergraduate Research Program, MSU, April 21, 2009 (First Place Poster Award)
  - \*48. "New Charging Method for Rechargeable Li-Ion Batteries," I. Abou Hamad, M. A. Novotny, and David Wipf at Lithium Mobile Power 2008, Las Vegas, NV Dec 8-9, 2008.
  - \*47. "Effect of UV/O<sub>3</sub> on Poly(methyl methacrylate-co-3-methacrylylpropylheptaisobutyl-T8-polyhedral oligomeric silsesquioxane) Films," Antonyraj Arockiasamy, Charles U. Pittman, and David O. Wipf at SERMACS 2008 (Southeastern Regional Meeting of the American Chemical Society), Nashville TN, Nov 12-15, 2008.
  - \*46. "Sacrificial-SECM Imaging of Hydroxyl Radical," Migelhewa Kaumal and David O. Wipf at SERMACS 2008 (Southeastern Regional Meeting of the American Chemical Society), Nashville TN, Nov 12-15, 2008.

- \*45. "An Electrochemical STM Study of Coarsening and Corrosion of Platinum Films," Qingmin Xu, Eric Kreidler, David Wipf, and Ting He at the 212th Meeting of the Electrochemical Society, Washington DC, Oct 7-12, 2007.
- \*44. "Application of Combined Stripping Voltammetry Techniques and SECM to Electro-Deposition and Generation Studies" M. A. Alpuche Aviles and D. Wipf, 210th Meeting of The Electrochemical Society and the XXI Congreso de la Sociedad Mexicana de Electroquímica Joint International Meeting, Cancun, MX, Oct 29 – Nov 3, 2006.
- 43. "Simple Fabrication of a Silver Epoxy Coated Microelectrode for SECM Imaging in Small Volumes," L. F. Diaz-Ballote and D. Wipf, 210th Meeting of The Electrochemical Society and the XXI Congreso de la Sociedad Mexicana de Electroquímica Joint International Meeting, Cancun, MX, Oct 29 – Nov 3, 2006.
- \*42. "Low Temperature Oxygen Reduction Reaction Kinetics on Polycrystalline Pt Electrodes," Xiaojing Sun, David O Wipf, The 57th Southeast/61st Southwest Regional Meeting, Memphis, TN, November 1-4, 2005.
- \*41. "A Modulated Mass-Transfer Technique for Voltammetry at Low Concentrations," A. Antonyraj, David O. Wipf, The 57th Southeast/61st Southwest Regional Meeting, Memphis, TN, November 1-4, 2005.
- \*41. "Scanning Electrochemical Microscopy – A Useful Tool for Surface Characterization of Composite Materials," L. Díaz-Ballote, M.A. Pech-Canul, M.I. Pech-Canul, L. Veleva and David O. Wipf, XIV International Materials Research Congress 2005, Cancún, Quintana Roo, México, August 21-25, 2005.
- \*40. "Evaluation of VGCF/Paint-Coated Mild Steel Using Electrochemical Impedance Spectroscopy (EIS) in 3% NaCl Solution," Sahar M. Atwa and David O. Wipf, 2004 Southeast Regional Meeting of the ACS, Research Triangle Park, NC, November 10-13, 2004.
- \*39. "Visualization of the Electrochemical Activity of Silicon Carbide Particles in Aluminum Composites by Scanning Electrochemical Microscopy," L. Díaz-Ballote, David O. Wipf, M. Pech Canul, and L. Veleva, XIII International Materials Research Congress, Cancún Mexico August 22-26, 2004,
- #\*38. "Imaging Model Neurons With the Scanning Electrochemical Microscope," John E. Baur, Ruwan Kurulugama, Paul A. Garris, and David O. Wipf, at The 226th ACS National Meeting, New York, NY, September 7-11, 2003.
- \*37. Stripping Voltammetry Imaging With Scanning Electrochemical Microscopy - M. Alpuche-Aviles David O. Wipf, at the 203rd Meeting of the Electrochemical Society, Paris, France, April 27-May 2, 2003.
- \*36. Electrochemical Study and Surface Analysis of Passive Films on AISI 316 Stainless Steel Grown in Alkaline Solutions," Lucien Veleva, Mario A. Alpuche-Aviles, Melissa K. Graves-Brook, and David O. Wipf at the 15th International Corrosion Congress, Granada, Spain, September 22-27, 2002.
- \*35. Electrochemical Detection for Microchip Separation Devices," Charles S. Henry, Yan Liu, Joseph C. Fanguy, David O. Wipf at the 201st Meeting of The Electrochemical Society in Philadelphia, PA, May 12-17, 2002.

- \*34. Constant-Separation Imaging of Live Mammalian Cells with the Scanning Electrochemical Microscope Using Carbon Ring Probes," John E. Baur and David O. Wipf at PittCon 2002, New Orleans, LA, March 17-22, 2002.
- \*33. Improving Impedance Feedback Control in Scanning Electrochemical Microscopy," Mario A. Alpuche Aviles and David O. Wipf at PittCon 2002, New Orleans, LA, March 17-22, 2002.
- \*32. Scanning Electrochemical Microscopy Imaging with pH Sensitive Iridium Oxide Microelectrodes," Emad El-Deen M. El-Giar and David O. Wipf at PittCon 2002, New Orleans, LA, March 17-22, 2002.
- \*31. Fast Scan Cyclic Voltammetry-Scanning Electrochemical Microscopy," Luis Díaz-Ballote and David O. Wipf at PittCon 2002, New Orleans, LA, March 17-22, 2002.
- \*29. Conductivity Detection for Microchip Capillary Electrophoresis," Charles S. Henry, David O. Wipf, Jamie Vollenweider, at SmallTalk2001, San Diego, CA, Aug. 29-31, 2001.
- \*28. An Impedance Feedback Method for Examination of Corrosion with SECM," Mario A. Alpuche Aviles and David O. Wipf at PittCon 2001, New Orleans, LA, March 4-9, 2001.
- \*27. A Microparticle Iridium Oxide pH Ultramicroelectrode for SECM," Emad El-Deen M. El-Giar and David O. Wipf at PittCon 2000, New Orleans, LA, March 4-9, 2001.
- 26. Characterization of a Conductivity Detector for Microchip Capillary Electrophoresis," Yan Liu, David O. Wipf, and Charles S. Henry at the 52nd Southeast / 56th Southwest Joint Regional Meeting of the American Chemical Society, New Orleans, LA, Dec. 6-8, 2000.
- \*25. In-Channel Conductivity Detection for Microchip Capillary Electrophoresis," Jasper R. Clarkson+, Charles S. Henry, and David O. Wipf at the 52nd Southeast / 56th Southwest Joint Regional Meeting of the American Chemical Society, New Orleans, LA, Dec. 6-8, 2000.
- \*24. Shear Force Distance Regulation for Scanning Electrochemical Microscopy," Mario A. Alpuche Aviles and David O. Wipf at PittCon 2000, New Orleans, LA, March 12-17, 2000.
- \*23. A New Procedure for Construction of Small Carbon-Fiber Electrodes," Emad El-Deen M. El-Giar and David O. Wipf at PittCon 2000, New Orleans, LA, March 12-17, 2000.
- \*22. Direct Observation and Kinetic Measurements of Active Sites on Glassy Carbon Electrodes", Robert C. Tenent and David O. Wipf at PittCon '99, Orlando, FL, March 7-12, 1999.
- \*21. Direct Observation and Kinetic Measurements of Active Sites on Glassy Carbon Electrodes," Robert C. Tenent and David O. Wipf Mississippi EPSCoR Conference, Jackson, MS, March 2-3, 1999.
- \*20. Metal-Metal Bonding in M<sub>2</sub>(form)<sub>4</sub> Complexes," Kathryn M. Carlson-Day, Judith L. Eglin, Laura T. Smith, Richard J. Staples, and David O. Wipf, Mississippi EPSCoR Conference, Jackson, MS, March 2-3, 1999.
- \*19. Studies of Heterogeneously Modified Carbon Electrodes by Scanning Electrochemical Microscopy," Robert C. Tenent and David O. Wipf at PittCon '98, March 1-5, 1998, New Orleans, LA

- \*18. Localized Passive Layer and Corrosion Studies of Various Aluminum Alloys Using the Scanning Electrochemical Microscope”, John Still and David O. Wipf at PittCon '98, March 1-5, 1998, New Orleans, LA
17. Localized Avidin/Biotin Derivatization of Glassy Carbon Electrodes Using Scanning Electrochemical Microscopy”, Wilbur B. Nowall, David O. Wipf, and Werner G. Kuhr at the Electrochemistry Gordon Conference, January 18-23 1998, Ventura CA
- \*16. Use of Formamidine Ligands in the Synthesis of Quadrupty Bonded Dichromium Complexes”, Kathryn M. Carlson-Day, Judith L. Eglin, Laura T. Smith, Richard J. Staples, and David O. Wipf, Mississippi EPSCoR Conference, January 21- 22, 1998, Jackson, MS
15. Synthesis of Dichromium Formamidinate Complexes” Kathryn M. Carlson-Day, Judith L. Eglin, Laura T. Smith, Richard J. Staples, and David O. Wipf, 214th National Meeting of the ACS, September 11 - 15, 1997, Las Vegas, Nevada.
- \*14. A Method for the Heterogeneous Derivatization of Carbon-Fiber Ultramicroelectrodes”, Robert C. Tenent and David O. Wipf at PittCon '97, March 16-21, 1997, Atlanta, GA
- \*13. Localized Corrosion Studies of Iron using the Scanning Electrochemical Microscope,” John W. Still, David O. Wipf, Mississippi EPSCoR Conference, Jan. 29, 1997, Jackson, MS, No. 9.
- \*#12. Development of a Scanning Electrochemical Microscope for the Surface Modification of Carbon Fiber Electrodes,” W. B. Nowall, S. E. Rosenwaldt, W. G. Kuhr, R. Tenent and D. O. Wipf, Microfabricated Sensors, Instruments and Systems for Biological and Medical Applications, May 6-8, 1996, University of California, Davis.
- \*11. UV/Ozone Pretreatment of Carbon Electrodes,” Junfeng Zhou and David O. Wipf, Paper #112P, Pittsburgh Conference and Exposition, March 6, 1996, Chicago, IL.
- \*10. Patterning and Imaging of Conducting Polyaniline with the Scanning Electrochemical Microscope,” David O. Wipf and Junfeng Zhou, Mississippi EPSCoR Conference, Jan. 31, 1996, Jackson, MS, No. 21.
- \*9. Surface Modification and Characterization of Carbon Electrodes,” L. H. Bluhm+ and D. O. Wipf, 47th Southeast / 51st Southwest Joint Regional Meeting of the American Chemical Society, Nov. 29-Dec. 1, 1995 Memphis, TN, No. 240
- \*8. Generation and Imaging of Locally Oxidized Regions on Carbon Electrodes by Scanning Electrochemical Microscopy,” R. C. Tenent and D. O. Wipf, 47th Southeast / 51st Southwest Joint Regional Meeting of the American Chemical Society, Nov. 29-Dec. 1, 1995 Memphis, TN, No. 20
- \*7. Study of Pitting Corrosion Using Iron in Aqueous Trichloroacetic Acid,” J. W. Still and D. O. Wipf, 47th Southeast / 51st Southwest Joint Regional Meeting of the American Chemical Society, Nov. 29-Dec. 1, 1995 Memphis, TN, No. 82
- \*6. UV/Ozone Treatment to Activate Carbon Electrodes,” J. Zhou and D. O. Wipf, 47th Southeast / 51st Southwest Joint Regional Meeting of the American Chemical Society, Nov. 29-Dec. 1, 1995 Memphis, TN, No. 84
- \*5. Chemical Activation of Carbon Electrodes,” L. H. Bluhm+ and David O. Wipf, presented at the 27th Annual Southeast Regional American Chemical Society Conference of Undergraduate Student Chemists, Clemson, SC, March 16-17, 1995



- \*4. Examination of Pitting by Scanning Electrochemical Microscopy," Jeannette C. Polkinghorne+, John W. Still, and David O. Wipf, presented at the 209th Meeting of the American Chemical Society, Anaheim, CA, April 2-6, 1995.
- \*3. Examination of Pitting by Scanning Electrochemical Microscopy," Jeannette C. Polkinghorne+, John W. Still, and David O. Wipf, presented at the 47th Southeast Regional Meeting of the American Chemical Society, Birmingham, AL, October 16, 1994.
- \*2. Electrochemical Investigation of the Reduction of Trichloroacetic Acid in Aqueous Solution," David O. Wipf, John Still, at the Advances in Modern Nuclear Magnetic Resonance Techniques, June 9-11, 1994 Mississippi State University, John Still, presenter.
- \*1. Chemical Oxidation of Glassy-Carbon Electrodes," David O. Wipf, Jiwen Chen, at the Advances in Modern Nuclear Magnetic Resonance Techniques, June 9-11, 1994 Mississippi State University, Jiwen Chen, presenter.

### Theses and Dissertations

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"Electrode Modification by UV/Ozone Treatment and Scanning Electrochemical Microscope Polyaniline Deposition," Junfeng Zhou, M. S. Thesis, Mississippi State University, 1997.

"A Study of Localized Corrosion by Scanning Electrochemical Microscope," John W. Still, Ph.D. Dissertation, Mississippi State University, 1999.

"Localized Modification and Studies of Carbon Electrode Surfaces by Scanning Electrochemical Microscopy," Robert C. Tenent, Ph.D. Dissertation, Mississippi State University, 2000.

"Preparation and Scanning Electrochemical Microscopy (SECM) Applications of Carbon Fiber and Metal Particle Ultramicroelectrodes (UMEs)," Emad El-Deem Mohamed El-Giar, Ph.D. Dissertation, Mississippi State University, 2004.

"Development of Multidimensional Methods for Scanning Electrochemical Microscopy (SECM)," Mario Alberto Alpuche Avilés, Ph.D. Dissertation, Mississippi State University, 2005.

"Study of the Oxygen Reduction Reaction on Platinum with Scanning Electrochemical Microscopy and Rotating Disk Voltammetry," Xiaojing Sun, M.S. Thesis, Mississippi State University, 2007.

"A Lithium-Ion Test Cell for Characterization of Electrode Materials and Solid Electrolyte Interphase," Ekta Goel, M.S. Thesis, Mississippi State University, 2008

"The Effect of Vapor Grown Carbon Nanofiber-Modified Alkyd Paint Coatings on the Corrosion Behavior of Mild Steel", Sahar M. Atwa, Ph.D. Dissertation, Mississippi State University, 2010

"Advancing Li/CFx Battery Chemistry: A Study on Partially Reduced CFx as a Primary Li/CFx Cell Cathode Material" Martin Mathews, M.S. Thesis, Mississippi State University, 2011

"Preparation of Gold Nanoparticles with the Scanning Electrochemical Microscope " Changhong Han, M.S. Thesis, Mississippi State University, 2012

“Development Of Alternating Current Scanning Electrochemical Methods To Map Chemical Species” Migelhewa Kaumal, Ph.D. Dissertation, Mississippi State University, 2012

“Investigation of the structure-activity relationship of pseudo-single-crystal platinum electrodes by scanning electrochemical microscopy” Yulin Wang, Ph.D. Dissertation, Mississippi State University, 2013

“Synthesis and characterization of PANI-coated VGCFs and evaluation of its use for corrosion inhibition” Maria Concepcion Cebada Ricalde, Ph.D. Dissertation, Mississippi State University, 2014

“Electrochemical studies of hexahapto-dibenzo[a,e]cyclooctatetraene complexes of chromiumtricarbonyl and cationic manganesetricarbonyl” Jarquees Williams, M.S. Thesis, Mississippi State University, 2014

“Using biochar electrodes for brackish water desalination” Hellen Stephanie, M.S. Thesis, Mississippi State University, 2017

“Nanostructured materials for energy storage and pH ultramicroelectrodes” Hadi Khani, Ph.D. Dissertation, Mississippi State University, 2017

“In Situ Induction Heating of Electrodes and Applications” Mohammad Azizur Rahman, Master’s Thesis, Mississippi State University, 2018

“Assessment of new catalysts for electrochemical reduction of carbon dioxide” Ekta Goel, Ph.D. Dissertation, Mississippi State University 2019

\* Resulting from research at Mississippi State University

# Invited Presentation.

\* Undergraduate student.

## Students, Postdoctorals, and Collaborators

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- Graduate Students  
John W. Still, Jiwen Chen (1994), Mohammed Junaid Hussain (1993-94), Robert C. Tenent, Junfeng Zhou, Mohsinullah Mohammed, Emad El-Deen El-Giar, Mario Alpuche-Aviles, Sahar Atwa, Xiaojing Sun, Ekta Goel, Migelhewa Kaumal, Yulin Wang, Martin Mathews, Maria Cebada-Ricalde, Changhong Han, Joseph Morrison, Xin Shan, Hadi Khani, David Clark, Timothy Dowell, Jarquees Williams, Phumla Mawisa, Olajide Banks, Ekta Goel, Hellen Stephanie, Maxwell Okunrobo, Mohammed (Jewel) Rahman, Teresa Brown, Femi (Raymond) Awoyemi, Arma Regmi, Edward Acheampong, Jayamini Hewage
- Postdoctoral Researchers  
Qingmin Xu, A. Antonyraj, Fuyen Ge, Luis Diaz-Ballote
- Undergraduate Researchers  
Robert C. Tenent (REU 1993), Lumbe Davis (REU 1993), Jeannette Polkinghorne (REU 1994), Louis Bluhm (REU and MSU 1994-1995), Andrew Knedlik (MSU 1995), Deon Miles (REU 1996), LaKeana Jones (REU 1997), Britte Blair (MSU 1996), Crystal Jones (REU 1999), Ratmir Derda (2000-2001 MSU), Jasper Clarkson (REU 2000), Dan Eves (REU 2000), Shawn Sullivan (REU 2001), Hollie McGehee (MSU 2002), Eleenaw Jefferson (REU 2005), Joshua Skinner (REU 2007), Steven Kelly (2008), Stanton Price

- (2010), Hannah Griffin (2011-12), Steven Sandoval (REU 2014), Anna Phillips (2018), Hunter O. Brown (2018-2019), Joshua Burcham (2019), Summer Nash (REU 2019)
- High-School Researchers  
Garrett Wells (2019 MSMS)
  - Sabbatical Sponsor  
Dr. Lucien Veleva, CINVESTAV, Mérida, MX, Dr. Xiaodong Su, Chongqing University, PRC.
  - Collaborator (Last 48 Months)  
Dr. Gnasewar Gude, Dept of Civil and Env. Eng. Mississippi State University

### Other Academic Activity

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Member of the A-Page Features Panel, *Analytical Chemistry Journal* (2009-2013)

Member of the Editorial Advisory Board, *Electrochemistry Communications* (2006-2013)

Society for Electroanalytical Chemistry (SEAC) Board of Directors (2015-2019)