

# Deborah L. Boxall

## EDUCATION

- Ph.D. Inorganic Chemistry with minors in Solid State Physics and Materials Science Engineering, Vanderbilt University, Nashville, Tennessee, August 2000.
- M.S. Inorganic Chemistry, Vanderbilt University, Nashville, Tennessee, June 1998.
- B.S. Chemistry (*magna cum laude*), University of Maryland, Baltimore County, Catonsville, Maryland, May 1992.

## PUBLICATIONS

1. "Switching potentials and conductivity of polypyrrole films prepared in the ionic liquid 1-butyl-3-methylimidazolium hexafluorophosphate," D.L. Boxall and R.A. Osteryoung, *Journal of the Electrochemical Society*, 151(2), E41, **2004**.
2. "Synthesis, Characterization and Reactivity of a (3:1) Pt-Ru/Carbon Powder Nanocomposite as a Methanol Electrooxidation Catalyst," J.T. Moore, J.D. Corn, D. Chu, R. Jiang, D.L. Boxall, E.A. Kenik and C.M. Lukehart, *Chemistry of Materials*, 15(17), 3320, **2003**.
3. "Pt-Ru and Pt-Ru-P/Carbon Nanocomposites: Synthesis, Characterization and Unexpected Performance as DMFC Anode Catalysts," W.D. King, J.D. Corn, O.J. Murphy, D.L. Boxall, E.A. Kenik, S.R. Stock, and C.M. Lukehart, *Journal of Physical Chemistry B*, ASAP, **2003**.
4. "Electrochemical Investigations in the Ionic Liquid 1-Butyl-3-Methylimidazolium Hexafluorophosphate," D.L. Boxall, J.J. O'Dea, and R.A. Osteryoung, *Proceedings of the Electrochemical Society: Molten Salts XIII*, eds. H.C. Delong *et al.*, 889, **2002**.
5. "Apparent Anomaly During Rotating Disk Voltammetry in Ionic Liquids," D.L. Boxall, J.J. O'Dea, and R.A. Osteryoung, *Journal of the Electrochemical Society*, 149(11), E468, **2002**.
6. "Electrochemical Properties of Alkali Metals in 1-Butyl-3-Methylimidazolium Hexafluorophosphate," D.L. Boxall and R.A. Osteryoung, *Journal of the Electrochemical Society*, 149(6), E185, **2002**.
7. "Synthesis of PtSn/Carbon Nanocomposites Using *trans*-PtCl(PEt<sub>3</sub>)<sub>2</sub>(SnCl<sub>3</sub>) as a Source of Metal," D.L. Boxall, E.A. Kenik, and C.M. Lukehart, *Chemistry of Materials*, 14(4), 1715, **2002**.
8. "On-Particle EDS Analysis of Bimetallic, Carbon-Supported Catalysts," D.L. Boxall, E.A. Kenik, and C.M. Lukehart, *Advances in Materials Problem Solving with the Electron Microscope*, eds. J. Bentley *et al.*, Mater. Res. Soc. Symp. Proc. 589 (Materials Research Society: Pittsburgh, PA), 265, **2001**.
9. "Rapid Synthesis of a Pt<sub>1</sub>Ru<sub>1</sub>/Carbon Nanocomposite Using Microwave Irradiation: A DMFC Anode Catalyst of High Relative Performance," D.L. Boxall, G.A. Deluga, E.A. Kenik, W.D. King, and C.M. Lukehart, *Chemistry of Materials*, 13(3), 891, **2001**.

10. "Rapid Synthesis of Pt or Pd/Carbon Nanocomposites Using Microwave Irradiation," D.L. Boxall and C.M. Lukehart, *Chemistry of Materials*, 13(3), 806, **2001**.
11. "On-Particle EDS Analysis of PtRu/C DMFC Catalysts Using High-Resolution TEM," D.L. Boxall, C.M. Lukehart, and E.A. Kenik, *Proceedings of the ASME Advanced Energy Systems Division: 1999 International Mechanical Engineering Congress and Exposition*, 39, 327, **1999**.
12. "Nanoclusters of Silicon and Germanium (review)," W.D. King, D.L. Boxall, and C.M. Lukehart, *Journal of Cluster Science*, 8(2), 267, **1997**.
13. "Fabrication, Characterization and Optical Theory of Aluminum Nanometal Nanoporous Membrane Thin Film Composites," G.L. Hornyak, K.L.N. Phani, D.L. (Boxall) Kunkel, V.P. Menon, and C.R. Martin, *Nanostructured Materials*, 6(5-8), 839, **1995**.
14. "The Energetics of Fluorinated Species: Estimation, Enthalpies of Formation, and Electronegativity," D.L. (Boxall) Kunkel, A.D. Fant and J.F. Liebman, *Journal of Molecular Structure*, 300, 509, **1993**.

## PRESENTATIONS

- 2002 (*invited*) "Preparation and characterization of bimetallic carbon-supported nanocomposite materials from single-source molecular precursors," University of Arkansas, July, Fayetteville.
- 2002 (*invited*) "Electrochemical investigations in the ionic liquid 1-butyl-3-methylimidazolium hexafluorophosphate," D.L. Boxall, R.A. Osteryoung, Electrochemical Society Meeting, Thirteenth Molten Salts Symposium, May, Philadelphia.
- 2002 "Determination of Conductive Polymer Switching Potentials by Rotating Ring-Disk Voltammetry," D.L. Boxall, J.J. O'Dea and R.A. Osteryoung, Southeast Regional Meeting of the American Chemical Society, October, Charleston.
- 1999 "On-particle EDS analysis of PtRu/C DMFC catalysts using high-resolution TEM," D.L. Boxall, C.M. Lukehart, and E.A. Kenik, 1999 International Mechanical Engineering Congress and Exposition: Advanced Energy Systems Division, November, Nashville.
- 1998 "Rapid synthesis of carbon-supported metal nanocrystals," D.L. Boxall, W.D. King, C.M. Lukehart, Materials Secretariat, ACS National Meeting, August, Boston.
- 1995 (*invited*) "Effect of orientation of the optical-properties of nanoscopic gold particles," D.L. (Boxall) Kunkel, G.L. Hornyak, and C.R. Martin, Frontiers in Chemistry Symposium, ACS National Meeting, Anaheim, April.
- 1994 "Template synthesis of metal nanoparticles and optical orientation effects," D.L. (Boxall) Kunkel, V.P. Menon and C.R. Martin, 36<sup>th</sup> Rocky Mountain Conference on Analytical Chemistry, August, Denver.