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B.S., Chemical Engineering, University of Colorado at Boulder (1999)

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<http://www.che.ksu.edu/faculty/anthony>**RESEARCH INTERESTS:**

There is a continuous need to develop new materials to address environmental concerns such as air and water quality. More environmentally-benign processes require the development of new solvents and reaction media, new catalysts and catalytic systems, new separation media and techniques and new monitoring and detection capabilities. My research program strives to understand the fundamental properties and investigate the potential applications of materials such as porous molecular sieves and ionic liquids. The primary goals of my research are to molecularly design materials for specific applications, such as for separation media or chemical sensors, and to investigate the fundamental properties of these materials.

Current research projects include the following:

- Synthesis of nanoporous materials
- Investigation of zeolitic molecular sieves as agents for heavy metal separations
- Use of ionic liquids as alternative solvents for materials synthesis

**SELECTED PUBLICATIONS:**

Anthony, J. L. and Davis, M. E., "Assembly of Zeolites and Crystalline Molecular Sieves", *Self-Organized Nanoscale Materials*, D. Lockwood and M. Adachi, eds., 2006, in press.

Anthony, J. L., Anderson, J. L., Maginn, E. J., and Brennecke, J. F., "Anion Effects on Gas Solubilities in Ionic Liquids", *J. Phys. Chem. B* 109, 6366-6374 (2005).

Cadena, C., Anthony, J. L., Shah, J. K., Morrow, T. I., Brennecke, J. F. and Maginn, E. J., "Why is CO₂ So Soluble in Imidazolium-Based Ionic Liquids?" *J. Amer. Chem. Soc.* 126, 16, 5300-5308 (2004).

Anthony, J. L., Aki, S. N. V. K., Maginn, E. J., and Brennecke, J. F., "Feasibility of Using Ionic Liquids for Carbon Dioxide Capture", *Int. J. Environ. Tech. Manage.* 4, 1/2, 105-115 (2004).

Anthony, J. L., Maginn, E. J., and Brennecke, J. F., "Thermodynamic Properties and Solubilities of Gases in 1-*n*-butyl-3-methylimidazolium hexafluorophosphate", *J. Phys. Chem. B* 106, 7315-7320 (2002).

Anthony, J. L., Maginn, E. J., and Brennecke, J. F., "Gas Solubilities in 1-*n*-butyl-3-methylimidazolium hexafluorophosphate", *Ionic Liquids – ACS Symposium Series 818*, R. Rogers and K. Seddon, eds., 2002, pp. 260-269.

Anthony, J. L., Maginn, E. J., and Brennecke, J. F., "Solution Thermodynamics of Imidazolium-Based Ionic Liquids and Water", *J. Phys. Chem. B* 105, 10942-10949 (2001).