**CURRICULUM VITAE**

Rodney Andrews

**CONTACT INFORMATION**

University of Kentucky

Center of Applied Energy Research

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**RESEARCH INTERESTS**

Research interests include production of pitches and heavy aromatics from coal and other fossil resources, biomass utilization for fuels and chemicals, thermochemical conversion processes for coal and biomass, carbon fiber and composites, activated carbon materials, pitch chemistry and characterization, synthesis and application of carbon nanomaterials.

**EDUCATION**

Ph.D., Chemical Engineering, 1999, University of Kentucky, Lexington, Kentucky.

 “Environmental Applications of Carbon Fiber and Activated Carbon Fiber Composites”.

B.Sc., Chemical Engineering, 1994, The Honors College, Michigan State University,

East Lansing, Michigan.

**GRADUATE AND POSTDOCTORAL ADVISORS**

Prof. Eric Grulke, PhD advisor, Chemical and Materials Engineering, University of Kentucky.

Prof. Frank Derbyshire, PhD advisor, postdoctoral sponsor, Chemical and Materials Engineering and Center for Applied Energy Research, University of Kentucky (deceased).

**LICENSURE**

Professional Engineer (PE), License # 24738 State of Kentucky.

**EXPERIENCE AND PROFESSIONAL APPOINTMENTS**

2007-Present Director, Center for Applied Energy Research, University of Kentucky.

2006-2007 Acting Director, Center for Applied Energy Research, University of Kentucky.

2003-Present Associate Director and Engineer Associate Program Manager II

Center for Applied Energy Research, University of Kentucky.

2003-Present Assistant Adjunct Professor, Mechanical Engineering, University of Kentucky (NSF-sponsored ‘Nanoscale Engineering Certificate Program’).

2001-2003 Engineer Associate III - Research, Center for Applied Energy Research,

University of Kentucky.

1999-2001 Engineer Associate II- Research, Center for Applied Energy Research,

University of Kentucky.

Jan. 1997 Visiting Researcher, Institute for Advanced Materials Studies,

& Dec. 1995 Kyushu University, Kyushu, Japan.

**SYNERGISTIC ACTIVITIES**

Honorary Editorial Advisory Board, Carbon Journal, 2004-2007.

Advisory Committee, American Carbon Society, 2004-2010.

Technical Advisory Committee, Carbon 2007: An International Conference on Carbon, Seattle, WA, July 2007.

Program Chair, Workshop on Porous Carbons: Adsorbents for CBRN Protection, Seattle, Washington, July 2007.

Executive Council, Consortium for Premium Carbon Products from Coal, 2006-2008.

Program Chair, Workshop on Carbon Nanotube Reinforced Composites, January 2005, Lexington, KY.

Program Chair, Workshop on Porous Carbons in Energy Applications, July 2004, Lexington, KY.

Science Advisory Committee, Carbon 2004: An International Conference on Carbon, July 2004, Providence, RI.

Advisory Committee Chair, Consortium for Premium Carbon Products from Coal, 2003-2006.

Technical Program Chair, Carbon 2001: An International Conference on Carbon, July 2001, Lexington, KY.

Delegate, NATO Advanced Study Institute: Design and Control of Structure of Advanced Carbon Materials for Enhanced Performance, Antalya, Turkey, May, 1998.

**GRANTS AND CONTRACTS**

**Active Grants**

Andrews, R. (PI). “DoD SBIR Phase 2: Carbon Nanotube Composite Epoxy Resins for Improved Thermal Conductivity and Damage Resistance”, US Army –AMRDEC (as subcontract from Materials Sciences Corp.), $245,000, 7/1/2007-6/30/2009 (project period may change).

Andrews, R. (PI). “Clean Coal: Understanding and Accepting Clean Coal Technologies – Educating the Public about CTL and SNG”, Governor’s Office of Energy Policy, $45,400, 2/23/07-6/30/07.

Andrews, R. (PI). “DoD SBIR Phase 1: Carbon Nanotube Composite Epoxy Resins for Improved Thermal Conductivity and Damage Resistance”, US Army –AMRDEC (as subcontract from Materials Sciences Corp.), $12,000, 1/8/07-5/31/07.

Andrews, R.(PI). “DoD SBIR Phase II: High Strength Nanomaterials Fiber for Lightweight Composite Missile Cases”, US Army –AMRDEC (as subcontract from Materials Sciences Corp.), $235,996, 10/1/06-2/28/08.

Lipka, S. (PI), Andrews, R. (co-PI). “Active Materials for Capacitors from Coal”, US DoE Consortium for Premium Carbon Products from Coal, $100,000, 3/1/06-12/31/07.

Andrews, R. (PI). “Conversion of Illinois Basin Coal to Transportation Fuels”, Governor’s Office of Energy Policy, $141,443, 1/1/06-6/30/07.

Andrews, R. (PI). “Carbon Materials for Blast Mitigation and IED Containment”, Department of Homeland Security (National Institute for Hometown Security), $1,009,058, 7/1/05-6/30/07.

Andrews, R. (PI). “Koppers Inc Student Gift”, Koppers Inc., $30,000, 2006.

Andrews, R. (PI). Call-off Contract, Defense Science and Technology Laboratory, Ministry of Defense, United Kingdom, $800,000 total, 10/1/05-9/30/09:

 “Pleated Activated Carbon Fiber Composites – Phase 1”, $36,933

 “Regenerable Rotary Adsorption Unit for ColPro”, $44,890

 “Pleated Activated Carbon Fiber Composites – Phase 2”, $44,500

 “Nanotube Membrane Materials – Year 1”, $100,000

Crocker, M. (PI), Andrews, R. (Co-I). “Novel Concepts for Low Temperature Hydrocarbon SCR Catalysts Development”, Coordinating Research Council, $174,135, 2/1/05-1/31/08.

Lumpp, J. (PI), Andrews, R. (co-PI with 7 others). “Advanced Carbon Nanotechnologies Program”, Army Research Laboratory (as subcontract from Vanderbilt University), $2,400,000 UK Share, 5/20/04-5/19/09.

**Completed Grants**

Andrews, R. (PI). “UK Major Research Equipment Grant: TA Instruments AR2000 Rheometer and Q600 Combined TGA/DSC”, University of Kentucky Office of the Vice President for Research, $99,325, 3/2/07-6/30/07.

Andrews, R. (PI), Challman, D. “Clean Coal: Strategy for Coal-to-Liquids Fuels Production in Kentucky”, Governor’s Office of Energy Policy, $100,000, 8/1/06-2/28/07.

Andrews, R. (PI). “DoD SBIR: Multifunctional Polymers for Composite Structures”, US Army –AMRDEC (as subcontract from Materials Sciences Corp.) $12,000, 7/31/06-9/22/06.

Andrews, R. (PI). “Pitch/Polymer Blends for CO2 Adsorbents”, US DoE Consortium for Premium Carbon Products from Coal, $66,800, 7/1/05-12/31/06.

Andrews, R. (PI). “Mild Coal Extraction for the Production of Anode Coke”, US DoE Consortium for Premium Carbon Products from Coal, $105,700, 3/1/05-6/30/06.

RA was co-PI when grant written and then PI when A. Berkovich left UK.

Andrews, R. (PI), Zondlo, J. (co-PI, West Virginia University). “Continued Development of Pitch Derived Fibers and Foams”, US DoE Consortium for Premium Carbon Products from Coal, $79,045, 3/1/05-2/28/06.

Andrews, R. (PI). “Nanocomposite Materials Using Multiwall Carbon Nanotubes and Thermoplastic Elastomers”, Kuraray Co., $25,739, 11/1/04-3/31/05.

Andrews, R. (PI). “Carbon Nanotube Reinforced Fibers for Cabling and Tethers”, Institute for Scientific Research, $211,561, 9/1/04-8/31/06.

Crofcheck, C. (PI), Andrews, R. (co-PI). “Utilization of Nickel Nanoparticles to Facilitate the Recovery of Histidine-tagged Proteins”, Kentucky Science and Engineering Foundation, $15,000, 7/1/04-6/30/05.

Andrews, R. (PI). “Technical and Economic Assessment of Mild Coal Extraction”, US DoE Consortium for Premium Carbon Products from Coal, $74,647, 3/1/04-8/31/05.

Andrews, R. (PI). “Accelerated Processing of Isotropic Carbon Fibers from Coal”, US DoE Consortium for Premium Carbon from Coal, $58,391, 3/1/04-2/28/05.

McNeil, S. (PI), Andrews, R. (co-PI). “Conversion of Soybean Oil to Hydrogen by Delayed Coking”, Kentucky Soybean Producers Board, $20,000, 2004.

Andrews, R. (PI). “UK Major Equipment Grant: TePla M4L Plasma Processing System”, University of Kentucky Office of the Executive Vice President for Research, $44,300, 11/14/2004-6/30/2004.

Andrews, R. (PI), Schobert, H. (co-PI, Pennsylvania State University). “Advanced Gasification Byproduct Utilization”, US DoE University Coal Research Program, $379,000, 9/1/03-8/31/06. RA was co-PI until 2006 and PI after original PI, A. Geertsema, left UK.

Andrews, R. (PI). “Activated Pitch-derived Carbons for Cigarette Filter Applications”, Filtrona Technology Centre, $11,273, 9/1/03-12/31/03.

Selegue, J. (PI), Andrews, R. (co-PI). “MRI: Acquisition of Instrumentation for Thermal Characterization of Materials”, National Science Foundation, $172,063, 8/1/03-7/31/04.

Andrews, R. (PI), Berkovich, A.. “Coal-derived Pitch Fiber Reinforced Fly Ash Concrete”, US DoE Consortium for Premium Carbon Products from Coal, $99,249, 8/1/03-7/31/04.

R. Andrews (PI), M. Meier (co-PI). “Ultrahigh Strength Carbon Nanotube Composite Fibers”, Kentucky Science and Engineering Foundation, $141,080, 7/1/03-6/30/05.

Andrews, R. (PI), Zondlo, J. (co-PI, West Virginia University). “Nanotube Enhancement of Coal Extract Pitches: Fibers and Foams”, US DoE Consortium for Premium Carbon Products from Coal, $224,169, 3/1/03-2/29/04.

Andrews, R. (PI). “Development of Pitch-derived Activated Carbons for Cigarette Filter Applications”, Filtrona Technology Centre, $7,030, 10/1/02-12/31/02.

Andrews, R. (PI). “Value-Added Carbon Products from PCC and IGCC Byproducts”, US DoE Consortium for Premium Carbon Products from Coal, $140,642, 7/1/02-6/30/03.

Andrews, R. (PI), Berkovich, A. “Production of Bulk Carbon Fibers and Activated Carbon Fibers via Centrifugal Melt Spinning (CMS)”, US DoE Consortium for Premium Carbon Products from Coal, $115,839, 3/1/02-3/1/03.

Andrews, R. (PI). “A Feasibility Study”, Conoco, Inc., $44,257, 6/1/02-11/30/02.

Andrews, R. (PI). “Fibers and Composites from Coal-based Precursors”, US DoE Consortium for Premium Carbon Products from Coal, $57,451, 3/1/02-6/30/03.

Andrews, R. (PI). “Integrated Microsensor Devices and Systems”, US DoE EPSCOR (as subcontract from University of Louisville), $32,000, 10/1/01-9/30/03.

Andrews, R. (PI). “Manufacture and Testing of NT/Polymer Composite Fibers”, Materials Electrochemical Research Corporation (US Army SBIR), $23,986, 3/1/01-8/30/01.

Andrews, R. (PI). “MWNT/PS Composites for Electronic Carrier Tape”, TekPak, Inc., $13,941, 9/1/00-7/1/01.

Andrews, R. (PI). “Development of New Pressure Swing Adsorption Technology to Recover High Valued Products from Chemical Plant and Refinery Waste Streams”, US DoE (as subcontract from Air Products and Chemicals, Inc.), $80,000, 3/15/00-3/14/03.

Andrews, R. (PI). “Production of Carbon Fibers and Composites from Coal-Based Precursors”, US DoE Consortium for Premium Carbon Products from Coal, $80,000, 6/1/00-5/30/01.

Andrews, R. (PI). “Separations of CO2 from Flue Gases by Carbon-Multiwall Carbon Nanotube Composites”, US DoE University Coal Research, $65,447, 9/1/00-8/31/01.

Grulke, E. (PI), Andrews, R. (co-PI), with 3 other Co-PIs. “NSF-MRSEC: Advanced Carbon Materials Center”, National Science Foundation, $4,164,000, 10/1/98-8/31/02

(RA a co-PI for last 2.5 years of grant).

**PATENTS**

US Patent 7,160,531 Process for the continuous production of aligned carbon nanotubes (2007) Jacques, D. N., Andrews, R.

US Patent 6,908,572 Mixing and dispersion of nanotubes by gas or vapor expansion (2005) Derbyshire, F. J., Andrews, R., Safadi, B.

US Patent 6,872,403 Polymethylmethacrylate augmented with carbon nanotubes (2005) Pienkowski, D. A., Andrews, R.

US Patent 6,599, 961 Polymethylmethacrylate augmented with carbon nanotubes (2003) Pienkowski, D. A., Andrews, R.