Energy Research Center

117 ATLSS Drive; 610-758-4090

Carlos E. Romero, Ph.D.; Jonas Baltrusaitis, Ph.D.; Arindam Banerjee, Ph.D.; Rick Blum, Ph.D.; Paolo Bocchini, Ph.D.; Julio Bravo, Ph.D.; Hugo S. Caram, Ph.D.; Xuanhong Cheng, Ph.D.; Panayiotis Diplas, Ph.D.; John N. DuPont, Ph.D.; John T. Fox, Ph.D.; Javad Khazaei, Ph. D.; Shalinee Kishore, Ph. D.; Mayuresh Kothare, Ph.D.; Alberto Lamadrid, Ph.D.; Farrah Moazeni, Ph. D.; Colleen Munion, B.S.; Clay J. Naito, Ph.D.; Sudhakar Neti, Ph.D.; Herman F. Nied, Ph.D.; Alparslan Oztekin, Ph.D.; Sibel Pamukcu, Ph.D.; Frank Pazzaglia, Ph.D.; Mesut Pervizpour, Ph.D.; Stephen Peters, Ph.D.; Spencer E. Quiel, Ph.D.; Eugenio Schuster, Ph.D.; Arup SenGupta, Ph.D.; Ramesh Shankar, Ph.D.; Mark Snyder, Ph.D.; Muhannad T. Suleiman, Ph.D.; Natash Vermaak, Ph.D.; Xuanjie Wang, Ph.D.; Zheng Yao, M.S.

The mission of the Energy Research Center is to find solutions to national and global energy and energy-related problems by collaborating with federal, state and local agencies, energy businesses, technology developers and suppliers, the research community and academic institutions. The Energy Research Center accomplishes this mission through its continued commitment to innovative research and development, while recognizing the important link between energy and the environment. Originally founded in 1972, the Center brings together faculty and professional staff within Lehigh University to conduct research, foster partnerships between government and industry, provide funding, research and educational opportunities to university graduate and undergraduate students, and promote international research collaboration.

ENERGY RESEARCH

Research within the Center falls into five major categories. Projects of interest include:

Energy Conversion/Power Generation

This research program area has several components. The largest focuses on the equipment and processes used in large fossil-fired electric power plants, with research on methods of improving power plant conversion efficiency, of reducing emissions of carbon dioxide and of other gaseous pollutants, and of reducing the cost of generating electricity. Other projects deal with topics such as capture of carbon dioxide and sequestration industry, and renewable energy, including energy storage and decarbonization of energy-intensive hydrogen research.

Energy-Related Environmental Research

The Center’s environmental research program deals with air pollution, solid waste, and ground water contamination issues resulting from power generation and energy conversion activities; reduction of amounts of fresh water required for energy system and wastewater treatment and reuse.

Energy-Related Materials Research

This focus area considers materials issues in the energy field. Examples include high temperature coatings for boiler tubes, welding processes for new alloys, containment vessels for nuclear waste materials, component life prediction, and development of catalysts for pollution control.

Basic Energy Sciences

Faculty and students in engineering and science also carry out research to improve our understanding of the basic phenomena that underlie the knowledge base required for developing new and improved energy technologies. This includes cross-cutting types such as computer modeling and process optimization.

Educational Opportunities

The Center’s research programs provide opportunities for graduate students interested in working in the energy area. Most of the departments in the College of Engineering and Applied Science, as well as several departments within the College of Arts and Sciences, are active in energy research and offer both masters and doctoral degree programs suitable for studies of energy-related topics.

All degrees are granted by the academic departments and graduate students interested in energy enroll in traditional graduate degree programs in departments of their choice. These students specialize in energy by complementing their programs with a selection of energy-related courses. They pursue their graduate research in energy areas under the supervision of faculty from the Energy Research Center or from other research centers or academic departments.

Financial support for graduate students is available through fellowships and research assistantships.

ADDITIONAL INFORMATION

For more information, write to Dr. Carlos E. Romero, Director, Energy Research Center, Lehigh University, 117 ATLSS Drive, Bethlehem, PA 18015, or e-mail at cerj@lehigh.edu (ekl0@lehigh.edu). Please visit our website at www.lehigh.edu/energy (http://www.lehigh.edu/energy/)