

Post-Doctoral Research Associate in Life Cycle Energy Systems Modeling Analysis Research  
Oak Ridge National Laboratory  
Oak Ridge, TN

Project Description:

The Center for Transportation Analysis in the Energy and Transportation Science Division at Oak Ridge National Laboratory (ORNL), is seeking a candidate for post-doctoral research associate position to engage in energy systems modeling analysis research under the Transportation Materials Analysis Program. The Program develops and utilizes unique models and databases to address questions related to economic viability, process cost modeling, systems analysis, life-cycle analysis, infrastructure requirements, recycling, and institutional and social acceptance of next generation materials and clean energy manufacturing technologies. Technical models need to be developed that address the energy, environmental and economic viability of a specific next generation clean energy manufacturing technology for potential applications from a life cycle perspective. Technical and economic data collection for materials technologies currently under research and development stage from the industry as well as researchers will be necessary. The Program currently supports the research initiatives of lightweight and propulsion materials under the DOE Vehicle Technologies program and clean energy manufacturing technologies under the DOE Advanced Manufacturing Office.

In addition, the recent focus under this program has been in the manufacturing supply chain competitiveness analysis of next generation materials such as carbon fiber and wide band gap materials for the DOE Advanced Manufacturing Office. The successful candidate will work independently and with senior technical staff toward collecting data for all steps in development of manufacturing process flow sheets for the manufacturing of next generation materials for different potential market applications to evaluate the life cycle economic, energy, and environmental impacts. The focus of these analyses is to understand the drivers of U.S. competitiveness in the manufacturing portions of clean energy materials technologies, including the key factors behind manufacturing location decisions made by businesses.

Qualifications:

The successful candidate will possess a Ph.D. in mechanical or industrial engineering, having an excellent quantitative/business research background which can be applied in the assessment of the current and future viability of new materials technologies for automotive and clean energy technology applications. An educational background in advanced materials technologies is preferable with an emphasis on sustainability research. Candidates should possess strong analytical capabilities with an experience in the area of cost modeling and database development for the technology assessment related to the automotive industry and the supply chain of clean energy technologies. Some past experience in working with policy issues related to these industries besides the manufacturing supply chain competitiveness analysis would be useful.

Experience in manufacturing process modeling of advanced manufacturing technologies is valuable but not required. Proficiency in the use of industry standard modeling and simulation tools, such as spreadsheet based process cost modeling and commercially available life cycle analysis tools such as SimaPro will be useful. Excellent oral and written communication skills to make weekly presentations to sponsors and others and to prepare reports, proposals, and publications/journal articles is required. Strong interpersonal skills to support team building and leadership in addition to a strong commitment to scientific integrity is an important requirement.

Limited travel will be required for this position. No security clearance is required.

How to Apply:

Pl. forward your resume to Sujit Das [dass@ornl.gov](mailto:dass@ornl.gov) or contact him directly at (865) 789-0299 for further details.