



JOB OPPORTUNITIES

National Institute of Standards and Technology Building and Fire Research Laboratory

The Building Environment Division (www.bfrl.nist.gov/863) within the National Institute of Standards and Technology (NIST) is seeking highly motivated individuals with advanced degrees in Mechanical Engineering, Electrical Engineering, Computer Science, Building Construction and Information Technology, or closely related fields. U.S. citizenship is required. NIST is a federal agency within the U.S. Department of Commerce and offers a comprehensive benefits package. All positions will be filled in the Gaithersburg, MD campus.

The Building Environment Division develops measurement science, predictive models, and performance metrics to improve the energy efficiency of building components and systems, reduce building related CO₂ emissions, enhance the quality of the indoor environment, and improve the building design and construction process through the integration of information, communications, sensing, and automation technologies.

Key products of its work include data, measurement methods, and modeling techniques to describe the performance of HVAC&R equipment, building controls, alternative energy systems, indoor air quality control strategies, and building-related software.

Applicants are currently being sought for the following research areas:

- Conduct research leading to the development and advancement of measurement science needed to enhance the operation of building heating and cooling equipment and control systems through intelligent controls and fault detection. Screen promising alternative heating, ventilating, air conditioning, and refrigeration (HVAC&R) technologies, develop testing methodologies to measure their performance characteristics, evaluate their performance merits in relation to competing technologies, and research technical issues to improve energy efficiency. Conduct research in applications for intelligent software agents to report on the building system operation and environment, and respond to optimize energy performance of central plant and building HVAC systems.
- Conduct research to advance the integration of information, communication, automation, and sensing technologies and to improve the productivity of the construction industry. Pursue advances in information modeling, systems integration, and knowledge engineering relevant to building design, engineering, construction and operations.

- Conduct research to improve the measurement science associated with solar photovoltaics and energy monitoring/diagnostic systems for buildings. Research responsibilities include characterization of photovoltaic modules using indoor/outdoor test facilities and a state-of-the-art solar simulator and the evaluation of computer simulation tools used to predict the performance of solar energy and other alternative energy systems. Other responsibilities may include development of methods to enable the use of advanced sensor technology in buildings to reduce energy consumption and maintain occupant comfort.

Depending on the availability of funding, applicants may also be sought for the following research areas:

- Conduct research to improve the measurement science associated with the energy impact of building envelope airtightness and thermal integrity. Research responsibilities include developing test procedures and measurement methods to assess envelope infiltration, developing an international database for airtightness measurements, developing tools and techniques to measure the as-built envelope thermal performance, and simulating the energy impacts of envelope airtightness.
- Conduct research leading to technology and standards that enable building systems to communicate with a “Smart Grid” electrical distribution system in order to reduce energy consumption, manage peak loads, and control the interaction of the Smart Grid with onsite renewable electricity generation systems.

For additional information, interested candidates may contact or submit a CV/resume to:

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NIST collects applications for current and future job openings in an automated Applicant Supply File (ASF) system for a period of 90 days. Applicants are considered when filling a Direct Hire vacancy. To submit an application, please go to <https://rproxy.nist.gov/asf/>.

U.S. Citizenship required.

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