



## Postdoctoral Appointee in Fuel Design for Advanced Combustion Engines

The Center for Transportation Research (CTR) within the Energy Systems Division at Argonne National Laboratory has an immediate opening for a Postdoctoral Appointee to conduct investigations towards the design of fuels for low temperature combustion (LTC) applications, particularly the development of new fuel quality metrics for advanced LTC concepts, such as gasoline compression ignition (GCI).

**Project description:** The research activities are directed towards the development of new fuel quality metrics that are able to better specify fuel performance in conventional and advanced modes of combustion, including GCI, in order to address deficiencies of standard fuel metrics such as research and motor octane numbers (RON/MON). Experiments will be performed using a rapid compression machine (RCM) and a prototype GCI engine, and modeling/analysis will be undertaken to post-process and interpret the data. Collaborations will engage industrial partners and report to project sponsors in the US DOE's Office of Vehicle Technologies.

**Qualifications:** The candidate must have a PhD in mechanical/aerospace engineering, chemical engineering, or related discipline. Considerable knowledge of combustion fundamentals is required, as is demonstrated expertise using experimental devices to measure fundamental properties such as ignition delay, flame speed, fuel decomposition/oxidation intermediates and products, etc. Good knowledge of internal combustion engines and LTC is also necessary, including demonstrated experience conducting engine tests. Good experience programming with Labview, Fortran/C++, etc. will be needed, as well as experience using statistical analysis techniques such as Principal Component Analysis. Demonstrated motivation, energy and ability to originate, carry out and publish significant original research are required. The position requires good collaborative skills, including the ability to work well with other laboratories, in addition to the ability to work independently. Good oral and written communication skills are required. It is desirable to have knowledge of combustion chemistry, and experience with various diagnostic techniques. Capability to supervise graduate and undergraduate students is also desired.

**Appointment period:** The initial appointment period is one year, with renewal possible up to three years total, subject to continued project funding and satisfactory performance.

**Application:** Candidates will be evaluated until the position is filled. Please visit <http://www.anl.gov/careers> to submit your application materials (Requisition Number 322616). Finalists will be required to provide: (i) a detailed academic CV; (ii) list of publications, abstracts and significant presentations; (iii) three letters of recommendation from non-Argonne personnel; (iv) graduate and undergraduate transcripts; and (v) a two-page research proposal. Direct all inquiries to Dr. S. Scott Goldsborough ([scott.goldsborough@anl.gov](mailto:scott.goldsborough@anl.gov)).

Argonne National Laboratory (<http://www.anl.gov/>) is an internationally-renowned, multidisciplinary science and engineering research facility addressing vital challenges in areas of clean energy, environment, technology and national security. The CTR at Argonne conducts research and develops technologies related to internal combustion engines, fuels and aftertreatment systems, tribology and thermo-mechanical processes, vehicle systems, systems modeling and controls, as well as smart grids / interoperability.

As an equal employment opportunity and affirmative action employer, Argonne National Laboratory is committed to a diverse and inclusive workplace that fosters collaborative scientific discovery and innovation. In support of this commitment, Argonne encourages minorities, women, veterans and individuals with disabilities to apply for employment. Argonne considers all qualified applicants for employment without regard to age, ancestry, citizenship status, color, disability, gender, gender identity, genetic information, marital status, national origin, pregnancy, race, religion, sexual orientation, veteran status or any other characteristic protected by law.