

Opportunity Title: Hydrogen Storage Materials Opportunity

Opportunity Reference Code: EERE-RPP-FCT-1803

Organization U.S. Department of Energy (DOE)

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How to Apply A complete application consists of:

- An application
- A current Resume/CV
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Selected candidate may be required to provide proof of completion of the degree before the appointment can start. Proof must be sent to ORISE directly from the academic institution including graduation date and degree awarded.

All documents must be in English or include an official English translation.

Description The Fuel Cell Technologies Office (FCTO), situated within DOE's Office of Energy Efficiency and Renewable Energy (EERE), addresses the full range of barriers facing the development and deployment of innovative hydrogen and fuel cell technologies by conducting applied research, technology development and learning demonstrations, as well as safety research, systems analysis, early market deployments, manufacturing, and public outreach and education activities.

A successful candidate will work with the Hydrogen Storage Team of FCTO, assisting with the evaluation of materials-based hydrogen storage research, development, and demonstration activities. The material types will include adsorbents, metal/complex hydride, chemical hydrogen carriers and multi-scale material modeling efforts. While fuel cell-powered vehicles are currently emerging onto the market using high-pressure compressed hydrogen tanks, the DOE supports materials-based hydrogen storage R&D efforts directed at the next generation of fuel cell vehicles that will enable low hydrogen delivery pressures.

The candidate should have knowledge of advanced concepts, theories, principles, practices, methods, and techniques of interdisciplinary physical science and engineering practices relevant to hydrogen storage material systems. Relevant physical science areas may include physics, chemistry, materials, metallurgy, and chemical and mechanical engineering.

For additional information about the Fuel Cell Technologies Office, please visit: <http://energy.gov/eere/fuelcells/fuel-cell-technologies-office>

This appointment is located in Washington, D.C.

Participant Benefits

The selected candidate will receive a stipend as support for living and other expenses during this appointment. Stipend rates are determined by DOE



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EERE officials and are based on the candidate's academic and professional background. The candidate may also be eligible to receive a health insurance allowance and reimbursement for travel expenses. This appointment is for one year and may be extended in increments of up to one year, contingent upon project needs and funding availability. The maximum length of time a participant can spend in the ORISE program is five years from his/her initial start date.

Nature of the Appointment

Participants will not enter into an employee/employer relationship with ORISE, ORAU, the DOE, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.

This is an equal opportunity program open to all qualified individuals without regard to race, color, age, sex, religion, national origin, mental or physical disability, generic information, sexual orientation, or covered veteran's status.

If you have questions, send an email to DOE-RPP@orau.org. Please include the reference code for this opportunity in your email.

- Qualifications**
- Significant knowledge in materials science relevant to hydrogen storage materials and/or gas sorption materials and processes.
 - Practical knowledge and experience in processing, testing and characterization of advanced material systems as applies to hydrogen storage applications.

Other areas of specialized experience sought include:

- Advanced characterization techniques, such as neutron methods, X-ray diffraction, XES/XAS, FTIR, Raman, NMR, BET, PCT, DTA, TGA.
- Experience in computational material modeling, specifically in multi-physics, multi-scale computational material modeling.
- Experience in interpreting modeling activities and results related to thermodynamics, structures and kinetics.
- Experience in using commercial software such as COMSOL, MatLab, Simulink, VASP, DAKOTA, etc.

A PhD in the physical sciences, such as chemistry, physics, materials science, chemical engineering or a related area is required. Candidates with several years of post-doctoral or industrial experience in relevant materials research that includes materials preparation and characterization will be given preference.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Doctoral Degree.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([7](#)👁)
 - **Engineering** ([5](#)👁)

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◦ **Physics** ([4](#) )