



POSITION: Postdoctoral Appointee – Hydrogen and Metallurgy

JOB ID: 61921

MANAGER: Tom Felter

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DEPARTMENT DESCRIPTION

Sandia/California's Hydrogen & Metallurgy Science department performs research on a mix of government- and industry-funded projects. Much of our work involves research on the fundamental properties of metals and the effects of hydrogen on these properties. There are approximately 20 technical staff members and technologists in our department.

JOB DESCRIPTION

A postdoctoral position is available in the Hydrogen & Metallurgy Science department for a candidate with experience in mechanical and physical metallurgy. The postdoctoral appointee will be part of a team performing basic and applied research on how high-pressure gaseous hydrogen affects the deformation and fracture of structural alloys. The candidate will be expected to take a leading role in designing and executing fracture-mechanics experiments in high-pressure hydrogen gas. Laboratory capabilities include the thermal precharging of materials in high-pressure hydrogen gas and servo-hydraulic mechanical test frames with high-pressure hydrogen cells. The postdoctoral appointee will be expected to analyze and interpret mechanical property data with the aim of advancing the fundamental understanding of the structure–property relationships of metals in high-pressure gaseous hydrogen. In addition, the postdoctoral appointee will use a variety of characterization techniques in this endeavor, including optical and electron microscopy. Finally, the postdoctoral appointee is expected to publish peer-reviewed journal articles and to contribute to interagency working groups in a collaborative team environment.

QUALIFICATIONS

This postdoctoral position requires a recent PhD (conferred within the past five years) in materials science, metallurgical engineering, or a related field. Applicants must have experience in measuring the mechanical properties of metals and in using microstructural characterization techniques. Candidates must also understand fracture mechanics and should be able to use experimental results to develop the structure–property relationships of structural alloys. Additional required qualifications include the demonstrated ability to work independently within a team environment, the demonstrated ability to take ownership of research involving high-pressure gaseous hydrogen, and some familiarity with how various environments affect the mechanical properties of metals. In addition, applicants must have good communication skills and proven publication records.

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