

Strain Rate Characterization of Materials Research and Development Position Oak Ridge National Laboratory

The Polymer Matrix Composites Group in the Metals, Ceramics, Carbon, and Composites Division at the Oak Ridge National Laboratory (<http://www.ornl.gov>) has an immediate opening in strain rate characterization of materials. The position requires a strong background in experimental mechanics and materials testing. Although a Post-Doc appointment is anticipated, ORNL will also consider Post-Masters appointments and permanent position applicants having combination of education, skills, and experience as described below.

A M.S. degree, minimum, in materials/mechanical engineering or related field is required with PhD degree preferred. Technical skills and significant experience in mechanical testing are also required. Experience with composite materials and engineering mechanics are preferred. A strong background in dynamic testing, high-speed data acquisition is highly desirable. Expertise with LabVIEW and DIAdem is desirable but not required. Demonstrated understanding of the key issues of high-rate testing (e.g., inertia effects, dynamic instrumentation, and data filtering) is also highly desirable. The successful applicant is expected to be a highly qualified and self-motivated individual with the ability to work both independently and within a multidisciplinary team.

Job responsibilities will include supporting 2-3 existing projects in the area of automotive crashworthiness and assisting with the development and implementation of additional facilities, characterization techniques, and research projects. Initially, the work will be largely experimental but with the opportunity to collaborate with analytical modelers and to grow responsibilities into a mix of experimental/modeling, if desired. Most of the experiments will be conducted on ORNL's recently introduced Test Machine for Automotive Crashworthiness (TMAC), a unique high-force, intermediate-rate servo-hydraulic test machine. Dynamic testing on conventional high-rate (~20 m/s, 5kip dynamic) hydraulic machines as well as Split-Hopkinson for materials testing is a strong possibility. Other potential applications include material forming and forging. All work will be documented with the latest high-speed video technology. Development of additional test capabilities might include dynamic optical full-field deformation and/or shape measurement techniques. These efforts may require collaboration with ORNL researchers in broad technical areas found in other research divisions. In addition to the technical interaction, responsibilities require assisting program/project managers in developing project plans including milestones/deliverables, schedule and cost. Also, the job holder will interact regularly with automotive OEMs, automotive suppliers, and DOE personnel and prepare and present periodic reports documenting research and development. Successful execution of these responsibilities could lead to this candidate becoming the keystone resource in developing testing capabilities and executing test plans in this area.

US citizenship or capability to achieve permanent resident alien status at initiation of the assignment is desired.

Applicants should forward a resume or contact: J. Michael Starbuck; Senior R&D Staff Member
Oak Ridge National Laboratory; Box 2008, MS-6053; Oak Ridge, TN 37831-6053
Phone: 865/576-3633 Fax: 865/574-8257; email: StarbuckJM@ornl.gov

Please reference the position title and number (ORNL04-16-M&C), when corresponding about this position.

This appointment will be offered through the ORNL Postdoctoral Research Associates Program (<http://www.ornl.gov/orise/edu/ornl/ornl-pd/ornlpdoc.htm>). Salaries will be competitive. The postdoctoral program is open to all qualified individuals without regard to race, color, age, religion, sex, national origin, physical or mental disability, or status as a Vietnam-era veteran or disabled veteran.