



High Temperature Materials Laboratory

The High Temperature Materials Laboratory (HTML) is a DOE User Facility designed to help solve materials problems that limit the efficiency and reliability of advanced energy conversion systems. HTML includes six user centers available to researchers in industry, universities, and federal laboratories. The program has two major objectives:

- Conduct research that will assist U.S. industry in meeting challenges of reducing fuel consumption by improving materials related to transportation.
- Assist in educating and training materials researchers.

User Support

Instruments available at the six user centers have extensive capabilities for characterizing the microstructure, microchemistry, and physical and mechanical properties of materials over a wide range of temperatures.

Capabilities

- Microstructure analysis
- Residual Stress
- Diffraction (X-ray and neutron)
- Machining and inspection
- Thermophysical properties
- Friction wear testing
- Mechanical characterization

Professional Staff

HTML staff provides assistance to users and has the following responsibilities:

- Participates in the planning, performance, and interpretation of research, including copreparation of technical papers and presentations from nonproprietary research.
- Assists users in the safe and efficient operation of user center research equipment.
- Maintains instruments to maximize their availability for research.
- Organizes, maintains support for, and conducts individual research requiring no more than half of the available time.

Facility Access

Before research begins, two documents must be in place:

- Standard user agreement between the user organization and UT-Battelle, Inc.
- Approved research proposal

Proposals

Both nonproprietary and proprietary research are conducted within the user program.

All prospective users should consult with the appropriate center's staff concerning specific plans and time schedules for inclusion in proposals.

Nonproprietary

Nonproprietary research at HTML is usually conducted at no direct cost to the user, although charges are assessed for special services. Applicants must submit a research proposal for review. The HTML Proposal Review Committee, chaired by the HTML Director, consists of one staff member from the Metals and Ceramics Division, as well as HTML group leaders. This committee meets monthly to evaluate proposals and make recommendations on their acceptance. It also recommends priorities for use of instruments within HTML user centers, consistent with DOE missions and objectives. Applicants are notified about decisions no later than 2 weeks after review by the committee.

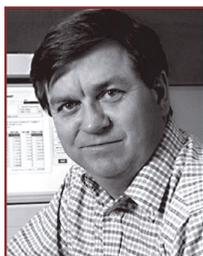
Users conducting nonproprietary research must agree that results will be submitted for publication in the open, refereed literature no more than 6 months after research is concluded. Papers and presentations must be prepared jointly.

Proprietary

Proprietary research at HTML is conducted with the understanding that all research costs are paid by the user. Fees are based on DOE guidelines for ORNL costs and must be paid prior to the beginning of research.

Applicants must submit a research proposal for review. Special care is taken to protect proprietary information. To ensure confidentiality of the proposals, only the HTML Director, selected HTML staff, and a DOE Oak Ridge Operations Office representative are involved in selecting projects. Selection of proposals is based on the compatibility of the proposed research and the missions of HTML and DOE. Classified research is not usually conducted within the HTML User Program.

User Centers and Representatives



Machining and Inspection Tribology User Center

Sam McSpadden, Leader
865-574-5444
mcspaddensb@ornl.gov

- Five types of instrumented grinders
- Dimensional metrology
- Tribology



Thermophysical Properties User Center

Ralph Dinwiddie, Leader
865-574-7599
dinwiddierb@ornl.gov

- Laser flash diffusivity
- Differential scanning calorimeter 1500



Materials Analysis User Center

Larry Allard, Leader
865-574-4981
allardlfjr@ornl.gov

- Remote microscopy
- Scanning auger microprobe
- Hitachi HF 2000 FEG-TEM



Residual Stress User Center

Camden Hubbard, Leader
865-574-4472
hubbardcr@ornl.gov

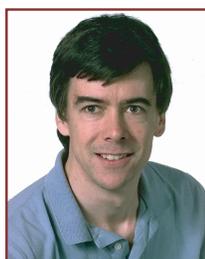
- X-ray residual stress goniometer
- Neutron residual stress facility



Mechanical Characterization and Analysis User Center

Edgar Lara-Curzio, Leader
865-574-1749
laracurzioe@ornl.gov

- Tensile test facility
- Flexure test facility
- Nanoindenter



Diffraction User Center

Andrew Payzant, Leader
865-574-6538
payzanta@ornl.gov

- Room- and high-temperature X-ray and neutron diffractometers
- Buehler HTXRD furnaces
- X14A beamline at National Synchrotron Light Source

Point of Contact:

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Proposal forms can be downloaded from the web site listed below or sent by mail. For information on proposals, contact:

Billie Russell
(russellbj@ornl.gov)
HTML Program Office
Phone: 865-574-1926
Fax: 865-574-4913

Web Address:
<http://www.ms.ornl.gov/htmlhome/>

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