

accelerating materials innovation

ARGONNE'S HIGH THROUGHPUT RESEARCH LABORATORY



The discovery and synthesis of new materials
are critical bottlenecks
in the search for alternative energy sources.



The conventional “one-at-a-time” sequential approach for synthesizing, characterizing and evaluating new materials typically provides only incremental improvements; it is both labor- and resource-intensive as well as very expensive.

ARGONNE NATIONAL LABORATORY'S

High Throughput Research Laboratory

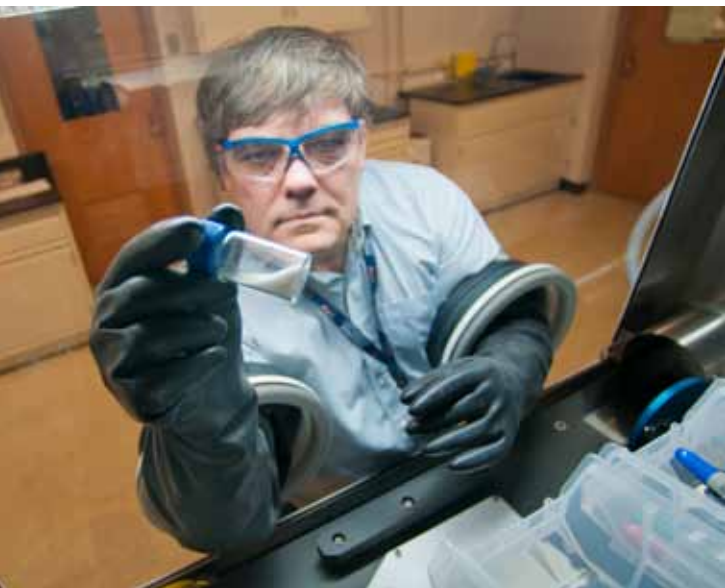
accelerates the discovery and optimization of new materials,
leading to “quantum jump” improvements
and fast-tracked marketplace entry.





Argonne's HIGH THROUGHPUT RESEARCH LABORATORY

Increases Productivity by 10-100X



Argonne's HTR provides highly automated and parallel approaches to materials development. This allows scientists to synthesize and screen large numbers of compounds and optimize their reaction or process conditions much more rapidly than the conventional approach, thereby reducing the time and cost for material development.



Argonne's HTR Laboratory's Capabilities



- ▶ A robotic platform with solid and liquid handling and dispensing capabilities
- ▶ A screening pressure reactor for catalyst screening, materials treatments, and process optimization at temperatures up to 400°C and pressures up to 3000 psig under a wide range of gas compositions
- ▶ Analytical equipment configured for high-throughput analyses including a X-ray diffractometer, LC-MS and a GC-MS
- ▶ Computer software to facilitate experimental design, data mining and data evaluation

APPLICATIONS

- ▶ **Catalysis**
- ▶ **Energy Storage**
- ▶ **Fuel Cells**
- ▶ **Artificial Photosynthesis**
- ▶ **Gas Separation and Storage**
- ▶ **Nanoscale Materials**



For more information
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