

MATERIALS FOR ENERGY

New materials and molecules are essential to our nation's sustainable energy future

The discovery and synthesis of new compounds are critical bottlenecks both for our nation's major scientific challenges; breakthroughs in new materials are essential to our nation's sustainable energy future.

New energy storage materials are essential for high-energy density batteries critical to 400-mile-range electric vehicles; new discoveries in catalytic materials are essential for converting feedstocks to chemical fuels; and new architectures are essential for more efficient conversion of solar energy to electricity. Similar bottlenecks in materials restrict progress in biology and the environment, nuclear energy and national security.

The Laboratory's innovative approaches for designing, creating and harnessing novel, environmentally responsible molecules and materials that exhibit revolutionary scientific phenomena or use-inspired functionality are poised to transform the science and technology of energy.

Argonne's research will create an expansive landscape of new molecules and materials, for exploring the science of synthesis in the laboratory and on the computer and for opening pathways through the bottlenecks — both in fundamental and use-inspired arenas.

