

PHYSICAL SCIENCES AND ENGINEERING

Driving discovery and innovation in fundamental and applied physics, chemistry and materials science



The Argonne Gas-Filled Analyzer is a state-of-the-art gas-filled separator at the Argonne Tandem Linac Accelerator System, which can be used for studies of heavy and superheavy nuclei as well as to prepare exotic radioactive beams for mass measurements and laser spectroscopy.

The Physical Sciences and Engineering (PSE) directorate at Argonne National Laboratory is a hub for cross-cutting, collaborative research with other laboratories, universities and industry partners. Equipped with state-of-the-art capabilities, our world-class community of scientists forges game-changing technologies and breakthroughs that improve our lives and broaden our understanding of the universe.

RESEARCH DIVISIONS

PSE's five research divisions are at the forefront of fundamental and applied science, driven by a commitment to bolstering national and economic security, as well as a dedication to preserving our environment.

Chemical Sciences and Engineering

Providing breakthroughs in chemical transformations, energy storage and energy conversion by leveraging unique capabilities.

High Energy Physics

Understanding the fundamental constituents of matter and energy, and illuminating the ultimate nature of space and time.

Materials Science

Understanding the structure and function of novel materials to solve America's energy challenges.

Nanoscience and Technology

Bringing together researchers from around the globe for world-class nanoscience, from fundamental science to use-inspired technologies.

Physics

Understanding the origin, evolution and structure of the matter in the universe that makes up the stars, planets and human life itself.

BY THE NUMBERS

\$191.6M

FY23 Program Spending

5 Research Divisions

2 National User Facilities

370+ Employees

280+ Students

270+ Visiting Scientists

245+ Postdocs

50+ Joint Faculty

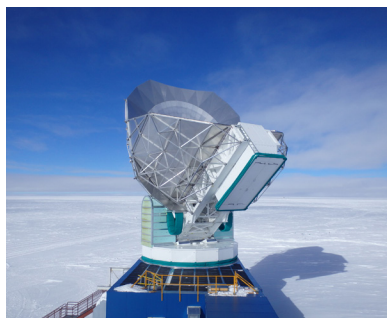
ARGONNE COLLABORATIVE CENTER FOR ENERGY STORAGE SCIENCE (ACCESS)

ACCESS coordinates the battery-related activities at Argonne across fundamental science, applied R&D and scaling. The focus is on identifying future needs and



U.S. DEPARTMENT OF
ENERGY

Argonne National Laboratory is a
U.S. Department of Energy laboratory
managed by UChicago Argonne, LLC.



Argonne scientists travel to the South Pole Telescope to study the early universe.



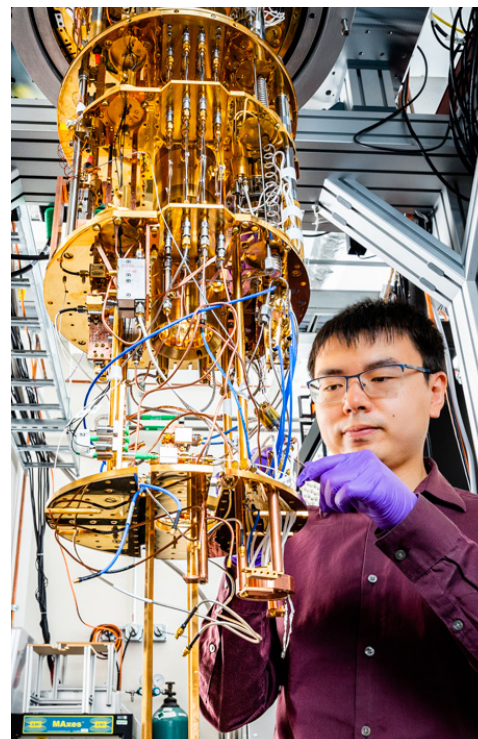
Chemical engineer Krista Hawthorne and materials scientist Brian Ingram are investigating new ways to decarbonize steelmaking.



Physicist Melina L. Avila Coronado and postdoctoral appointee Khushi Bhatt work on the Argonne In-Flight Radioactive Ion Separator (RAISOR) at ATLAS.



Materials scientist Duck Young Chung preparing material for testing of superconductivity at high temperature.



Argonne scientist Xu Han working in the quantum matter and devices lab at the CNM.

NATIONAL USER FACILITIES

PSE hosts and manages two of the six U.S. Department of Energy (DOE) national user facilities at Argonne. The exceptional expertise of our scientific staff and state-of-the-art capabilities at these facilities have resulted in a diverse array of game-changing discoveries and innovations, spanning from energy conversion and quantum information science to microelectronics and cosmology.

The Argonne Tandem Linac Accelerator System (ATLAS)

ATLAS is a trailblazing superconducting linear accelerator for heavy ions, employed in the exploration of nuclear properties. It serves as a critical resource for both fundamental nuclear

physics and astrophysics research, as well as in the development of nuclear physics applications in areas such as nuclear forensics, nuclear reactor safety, and medical isotope production.

Center for Nanoscale Materials (CNM)

The CNM is one of five Nanoscale Science Research Centers supported by DOE's Basic Energy Sciences. The center offers a comprehensive array of more than 150 tools and capabilities. It provides invaluable expertise, advanced instrumentation, and a collaborative environment for interdisciplinary research in nanoscience and nanotechnology.

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