



Pacific Northwest
NATIONAL LABORATORY

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PACIFIC NORTHWEST NATIONAL LABORATORY

Advanced Battery Facility

Enabling the development of new battery chemistry at a commercially relevant scale



Dry room facility for pouch cell
process line (1-2 Ahr capacity)



Designed to enable continuous coating/casting of electrode material on either copper or aluminum foil. Capable of double-sided coating for either continuous or segmented electrode films.

The Advanced Battery Facility (ABF) is housed in two adjoining labs in the Physical Sciences Laboratory (PSL) building at PNNL. The ABF contains a complete process line capable of preparing, fabricating and validating pouch cells from powder materials to battery testing. It is an ideal system for exploring a broad range of chemistries and materials at a commercially relevant scale.

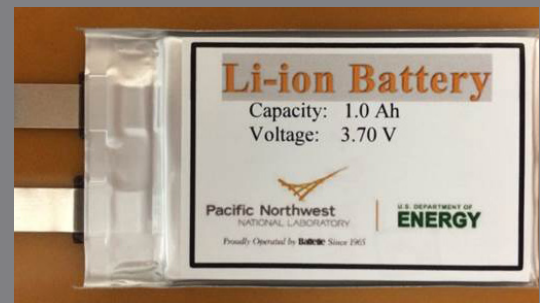
- » ABF commissioned in Q2 FY15
- » Bridge the gap between coin cell and commercial-scale battery development
- » Complementary to DOE's other facilities in the development of high-density energy storage systems for Electric Vehicles
 - Dry Room: 600 sq. ft. with room to add 18650 cell technology
 - Pouch Cell Capacity: standard cell capacity is 1 Ahr and can be adjusted between 100 mAhr - 2 Ahr,
 - Develop and validate new chemistries (raw material to pouch cell)
- » Ideal for the development of new battery chemistries, including Li-sulfur, Li-metal, Na ion, and Mg batteries
- » The next generation of Li-ion batteries with silicon based composite anode and novel cathode materials
- » Validate consumer developed or commercial materials
- » User facility with the capability to collaborate with DOE/VTO office, DOE OE office, industry, academia, and national security sponsors

PNNL Advanced Battery Facility Layout

PNNL's energy storage team has the experience and facilities to develop new battery materials from initial chemistry to coin cell validation through pouch cell development at a commercially relevant scale.



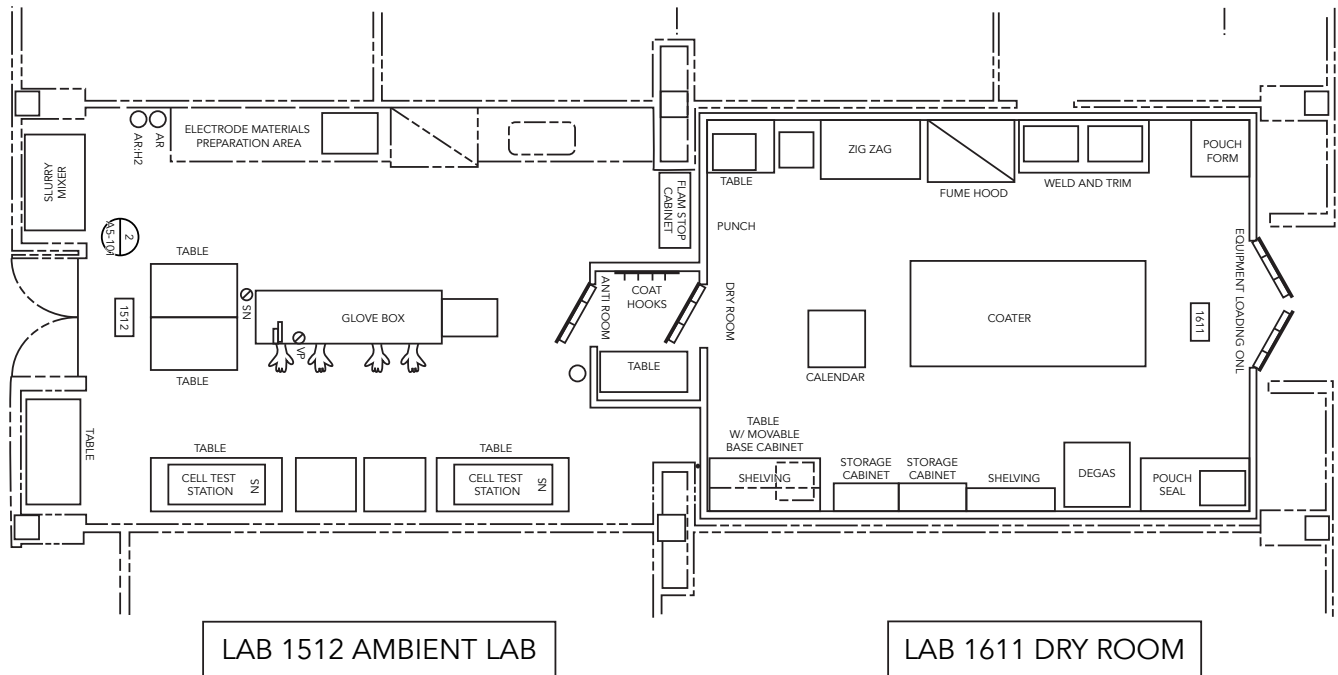
2.3 cm coin cell
~0.001 Ahr



53mm x 70mm pouch cell
100 mAhr – 2.0 Ahr

From materials development to cells at a commercially relevant scale

Advanced Battery Facility Layout



For more information:

Dr. Ji-Guang (Jason) Zhang

Project Lead
jiguang.zhang@pnnl.gov
(509) 372-6515

Dr. Jun Liu

Principal Investigator
Cross-Cut Science Lead
jun.liu@pnnl.gov
(509) 375-4443

Dr. Vince Sprenkle

Principal Investigator
Vincent.Sprenkle@pnnl.gov
(509) 375-2370

Mark Gross

ABF Capability Manager
mark.gross@pnnl.gov
(509) 375-6880

www.pnnl.gov

About PNNL

Pacific Northwest National Laboratory is a Department of Energy Office of Science national laboratory where interdisciplinary teams advance science and technology and deliver solutions to America's most intractable problems in energy, the environment and national security. PNNL employs 4,900 staff, has an annual budget of nearly \$1.1 billion, and has been managed by Ohio-based Battelle since the Lab's inception in 1965.



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