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PRINCETON NUENERGY





Material Testing & Characterization

From detailed physical and structural assessments to precise quantitative and qualitative phase analysis, we offer in-depth insights into your materials.

About PNE

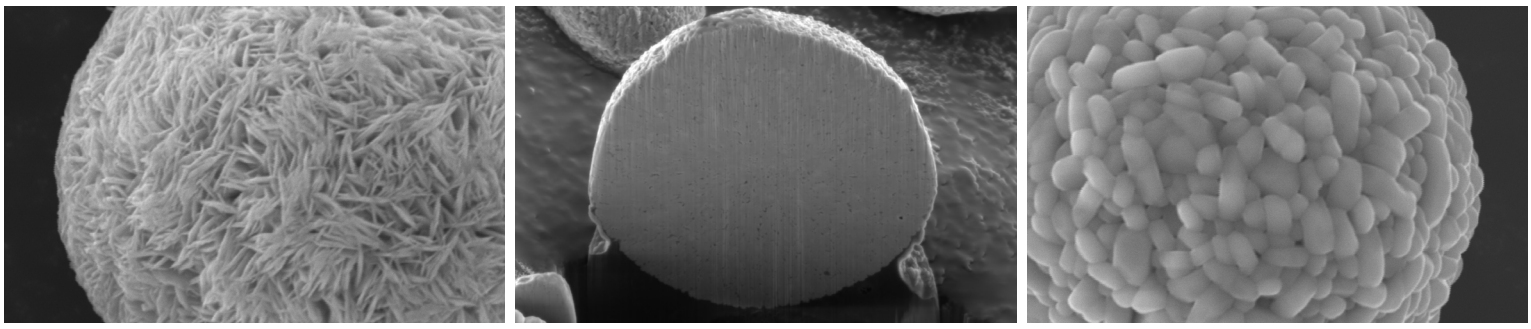
Princeton NuEnergy Inc. (PNE) is a U.S.-based innovative clean-tech company founded out of Princeton University. We focus on the direct recycling of lithium-ion batteries sourced from manufacturing scrap, electric vehicles, consumer electronics, and energy storage systems. Our patented LPAS® (low temperature plasma–assisted separation) process enables the recovery of battery-grade cathode material with high efficiency, supporting the development of a sustainable and circular battery economy.

Powder Testing & Characaterization

In addition to our core recycling technology, PNE offers advanced powder testing and material characterization services. These services support both internal process optimization and external client needs across the battery and materials industries. Our capabilities include physical and structural powder analysis, lattice parameter measurement, structural refinement, crystallite size determination, and phase identification—ensuring precise evaluation of cathode and anode materials for quality, performance, and reliability.

A full list of our equipment can be found on the next page

11 Deer Park Dr., Unit 120, Monmouth Junction, NJ 08852



Materials Characterization Lab

- JEOL SEM
- Bruker XRD
- Anton Paar BET
- MRB PSD
- ThermoFisher ICP-OES
- ThermoFisher F-ISE
- TA Instruments TGA/DSC
- Materials Tap Density analyzer
- Materials True Density analyzer
- Materials packing density & surface impedance analyzer
- Karl Ficher Titrator (Moisture)
- ThermoFisher Titrator (Residual Lithium)
- Carbon/sulfur analyzer
- XPS, TEM, Raman, FIB, etc. at Princeton University

Cell Fabrication and E-Chem Testing Lab

- Cleanroom/4-workstation Glovebox
- Slurry mixer (100g-3kg/batch)
- TA Instruments Rheometer
- Roll To Roll Reverse Comma Coater
- NMP Recovery System
- Hot/Cold Rolling Press Machine
- Electrode Die Cutter
- Automatic Layer by Layer Stacking Machine
- Ultrasonic Metal Spot Welder Welding Machine
- Pouch Formation Machine
- Electrolyte injection system
- Pouch Cell 3 in 1 Vacuum Sealing Machine
- Battery cyclers with environmental chambers
- Electrochemical workstations

Request your quote today!

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