

BATTERY MATERIALS CHARACTERIZATION AND PROCESSING LABORATORY

LABORATORY INFORMATION FACT SHEET

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The Battery Materials Characterization and Processing Laboratory for Munitions is focused on providing DEVCOM Armaments Center and the Department of Defense (DoD) with an in-house means of synthesizing, processing, testing, assessing and characterizing materials used in current and future Batteries and Power Sources for DoD munitions and systems.

TECHNOLOGY/FACILITY DESCRIPTION:

The laboratory utilizes many different equipment and characterization

techniques in order to handle and process legacy, current, new or novel materials for Battery and Power Source components. The lab can conduct characterization of material composition, hardness, thermal analysis, electrochemical analysis and microstructure as well as failure analysis.



EQUIPMENT AND EXPERTISE AVAILABLE:

- 1200 square foot Dry Room (RH>1%)
- Single Cell Tester conduct electrochemical and mechanical characterization of materials in simulated internal Thermal Battery environment, deformation testing of components
- Material Conditioning ovens and furnaces (vacuum, muffle, inert atmosphere and more)
- Material Processing high energy mills and mixers, pellet presses
- Microscopy binocular stereomicroscope, light-optical microscope, laser confocal microscope with laser profilometry, scanning electron microscope with EDS, EBSD and more
- X-Ray Characterization Suite XRF, XRD
- Thermal Analysis DSC, TGA, DTA with Integrated Mass Spec
- Modeling & Simulation Capabilities
- Processing and characterization of any legacy, current, new or novelty materials

- Mechanical property characterization
- Compositional, Hardness, Thermal Analysis, Electrochemical Analysis and microstructural characterization
- Failure analysis, including Destructive Physical Analysis (DPA)
- Component Deformation Testing
- Battery Materials Subject Matter Expertise for IPT's and Failure Teams

