



NANOTECHNOLOGY CENTER

LABORATORY INFORMATION FACT SHEET

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The Nanotechnology Center is a functional manufacturing facility whose mission is to develop advanced materials through novel synthesis techniques and advanced manufacturing processes for both military and non-military applications.

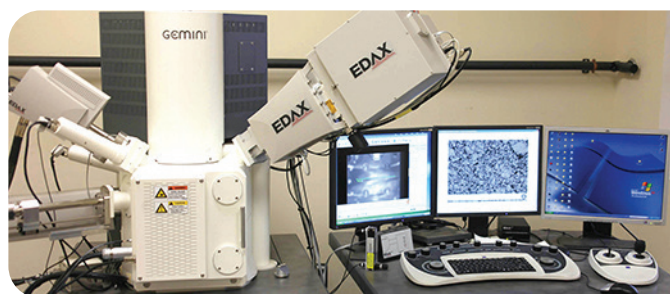
TECHNOLOGY/FACILITY DESCRIPTION:

The unique DEVCOM AC facility features the capabilities to synthesize, characterize, and consolidate nanomaterials into functional materials on a pilot scale - all in house.

The Center's facilities house a range of the most technologically advanced equipment as well as teams of highly experienced Advanced Materials & Technology Branch (AMTB) personnel with vast expertise in processing advanced materials and nanomaterials. This combination enables the Center to continue advancing the capabilities of nanotechnology to support the technological development of weapons systems and equipment for the U.S. warfighter, while building upon strong partnerships with industry, academia and other government agencies (OGAs)

The Center's one-stop-shop integrated prototyping facilities include:

- Capability to fabricate up to one kilogram an hour of nanoscale powder of virtually any metal or oxide/non-oxide ceramic
- A unique system to produce nanostructured alloys or nanocomposite powders
- A state-of-the-art nanomaterial characterization laboratory
- Capability to net shape and rapidly prototype bulk nanostructured components



EQUIPMENT AND EXPERTISE AVAILABLE:

- 2 Inert Gas - Inductively-Coupled Plasma (IG-ICP) Nanopowder Reactors - 1 for metals, 1 for ceramics
- 125-Ton, Field Assisted Sintering Technology (FAST) system for sintering powders to near net-shaped prototypes
- X-Ray Characterization (XRF and XRD)
- Thermal Analysis (DSC, TGA, DTA w/ Integrated Mass Spec)
- Field Emission - Scanning Electron Microscope (integrated accessories: EBSD, EDX, WDX, variable pressure detector)
- Synthesis of standard or custom nanopowders
- Spheroidization of non-flowable powders for use in Additive Manufacturing
- Microwave Sintering
- Melt-Spinning of materials