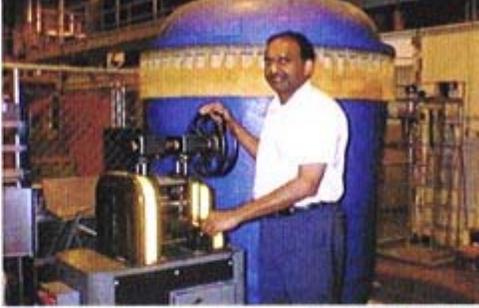


# Superconductivity Laboratory

		<p><b>Description:</b> This laboratory provides a complete facility for the development, production, and measurement of high temperature superconductors for high power applications. Two rolling mills, a flat press, and a Turk's-head draw bench allow the production of prototype-length superconductors. Muffled and tube furnaces, including a computer- controlled gradient tube furnace, provide the precise temperature control necessary for successful sintering and reaction of the superconductors. Superconducting quantum interference device (SQUID) magnetometer and a vibrating sample magnetometer produce state-of-the-art measurements of the magnetic properties of the superconductors. A variable temperature cryostat allows high current testing of conductors at any temperature from 4.2°K up to room temperature. A 2000 amp, very-high-precision DC power supply allows transport current measurements of completed superconducting samples. Superconducting magnets used to produce high fields for measurements include a 3-inch bore, 10 Tesla device and a 7-inch bore, 14 Tesla system. Superconducting magnet R&amp;D can be performed under high current ramp rate conditions with a megawatt excitation power supply.</p>
		

## Purpose:

Development of the high temperature superconductor (HTS) coated conductor including substrate, buffer layer, and superconductor processes for power generation applications. Characterize the electrical and magnetic properties of the HTS conductor for DC and high frequency (400-1600 Hz) DoD applications.

## Products:

High Temperature Superconducting Materials

## Availability:

Primarily in-house research, U.S. Government agency use, DoD contractors and dual use/defense conversion use-limited on an as available basis.