



CEM provides a number of unique capabilities to the UT Cockrell School of Engineering and our research partners. CEM researchers and technical staff have decades of experience in the design, fabrication, and test of novel machines. The high bay area houses extensive fabrication, assembly, and testing facilities in a 140,000 sq ft air-conditioned space. The 70 ft tall high bay features two 25-ton cranes with an additional 25-ton crane servicing a machine shop area.



Low-Lab - The low lab, is equipped with a 480 V AC source, a 480/808 V step-up transformer, a 6-pulse thyristor rectifier, an LC filter, the arc generator, and a resistive load bank, all rated at 1.2 MW. Connecting the filtered dc voltage and the load are two hundred meters of 444 MCM power cable.



Spin Test Bunker – The facility also houses a high energy spin test bunker designed to safely contain a 20 psig internal overpressure. The 600 ft² spin test bunker features 30 in. thick fiberglass reinforced concrete walls with 6 in. thick aluminum door, window, and roof closures. A stainless steel tie down structure is rated for 5 million pound vertical load and torque loads of up to 20 million lb-ft. A metal building located immediately adjacent to the spin test bunker was designed for installation and testing of gas turbines, with openings for intake air and integral exhaust ducting in the roof. This structure can also be used for local instrumentation and data acquisition for experiments being conducted in the spin test bunker. In the spin test bunker, however, full instrumentation wiring and optical fiber is routed to a faraday-shielded control room on this end of the main building.



Control Room – Safety is always of primary concern at CEM. Dedicated control rooms are present in both the low lab area within the main building, and adjacent to the pulsed power test area. Fiber networking connects test equipment to the control rooms for real-time monitoring of test events and electrical isolation.



Hydrogen ProtoHub - A collaborative research facility co-managed by The University of Texas at Austin's Center for Electromechanics and GTI Energy. The Hydrogen ProtoHub is a first-of-its kind hydrogen technology ecosystem with on-site hydrogen generation, storage, distribution, and multiple end-use applications, including vehicle fueling. The featured hardware and technologies will advance the hydrogen energy economy in Texas and beyond.