

Offsite Facilities

Solar Test Bench

The Energy Systems Laboratory Solar Test Bench includes precision instrumentation capable of directly measuring beam, diffuse, and total solar insolation. The NIST-traceable equipment used is from Eppley Labs and is connected to a data logger in the ESL. The radiation seen by each sensor is time-averaged at 15 minute intervals and stored in the data logger. The site is polled weekly and the information is stored in a database for analysis.

From left to right the Solar Test Bench consists of:

- A multi-pyranometer array with an artificial horizon
- An Eppley normal incidence pyrhelimeter
- A horizontal solar transmittance test box
- An Eppley shadow band pyranometer
- An Eppley precision spectral pyranometer, and a test stand for calibrating pyranometers.

Aerosol Testing Facility

Tests available at two Texas A&M aerosol wind tunnels help researchers model aerosol deposition and study characteristics of stack and ambient particulate sampling devices. Studies have been conducted on developing new ambient air samplers, new stack sampling apparatus, helicopter-borne aerosol sampler, modeling of concentration profiles in ductwork and particle deposition rates.

The Aerosol Testing Facility includes the following:

- Two tunnels, one with cross section of 8 feet by 8 feet and capability of wind speeds from 1-24 kilometers per hour (km/hr) and the other with cross-section of 5 feet by 5 feet and speeds to 160 km/hr
- Two-channel TSI IFA 100/200 hot wire anemometer
- TSI two-channel laser Doppler anemometer
- Two thermal anemometers
- TSI aerodynamic particle sizer
- Two vibrating jet atomizers
- Sequoia-Turner Model 450 fluorometer
- Two optical microscopes (Leitz and Nikon) with flat field objectives and Filar eyepieces
- Approximately 100 isokinetic nozzles of various sizes
- 10 vacuum pumps
- Numerous flow meters including devices with calibrations traceable to National Institute of Standards and Technology (NIST).

Fire Testing Site

The Fire Testing Site is located at the Brayton Fireman Training Field on the Texas A&M University campus. At this site, various equipment is subjected to and tested in the fire environment. The burning and extinguishing characteristics of hazardous material containers are studied to determine optimum packaging systems for ignition and flame spread resistance/prevention. Also, tests of oil field equipment (such as valves, blowout prevention hoses and well heads) are conducted to determine proper function during and after fire.