LASER AND PHOTONICS LABORATORY

The Natick Soldier Research, Development and Engineering Center (NSRDEC) can evaluate optical materials and systems at numerous wavelengths, output powers and pulse widths. Other capabilities include optical and surface analysis, as well as evaluation of optoelectronic materials.

OBJECTIVE:

The Laser and Photonics Laboratory is located in the new Ouellette Thermal Test Facility. It consists of a 1240 square foot laser laboratory.

Laser Systems include pulsed nanosecond Nd-YAG (1064, 532)), pulsed Alexandrite (tunable ~750–850 nm) stokes and anti-stokes Raman cells, continuous-wave Ar-Kr (tunable over the visible spectrum), Supercontinuum fiber laser (tunable 500-2400nm), Verdi solid state continuous-wave ND:YV04 (532nm) and numerous low power continuous wave lasers. Laser Systems are combined with optical components and NIST traceable Joule and power meters to assemble systems that can be used to evaluate nonlinear optical properties, birefringence, response time and sensitivity of developmental materials.

Opto-Electronic measurements are made using a Karl Suss probe station. The probe station permits conductivity measurements of materials, and has the capability for measuring ultra low electrical currents (<Pico Amps). The probe station combines with the laser systems for the evaluation of light sensitive materials and material systems.

Optical and surface analysis is accomplished using traditional and fiber optic spectrophotometers that allow investigation of sample spectral response such as transmission reflection and absorption. Surface analysis is performed using a profilometer that can measure film thickness down to ~100nm.

POINT OF CONTACT:

Warfighter Science, Technology and Applied Research (WarSTAR)
COMM: 508-233-4577/6481, DSN 256-4577/6481
E-MAIL: nati-amsrd-nsc-ss@conus.army.mil