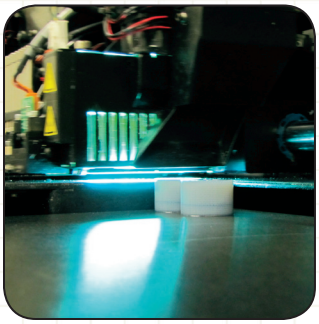
ADM
ADVANCED DESIGN AND MANUFACTURING

ENGINEERING DIRECTORATE

ECBC ENGINEERING
Design→Build→Test→Support

ECBC ENGINEERING PRODUCT DEVELOPMENT FACILITY ADVANCED DESIGN AND MANUFACTURING RAPID TECHNOLOGIES LABORATORY



The Edgewood Chemical Biological Center (ECBC) Engineering Directorate Advanced Design and Manufacturing (ADM)'s Rapid Technologies Laboratory (RTL) is a state-of-the-art facility equipped with a wide selection of high end Additive Manufacturing and 3D Data Capture capabilities. The broad suite of five labs consists of additive manufacturing technologies, sub-millimeter non-contact laser scanners, a touch probe portable coordinate measuring machine, part inspection equipment, and a wide array of supporting software packages.

The facility was developed to support ADM's rapid product development and quick turn-around design solutions by providing the ability to produce functional parts within hours of design concept. The assortment of additive manufacturing machines offers a wide selection of materials as well as a wide range of part size and resolution. The parts are normally used to test form, fit and function and validity of a design before investing in large scale manufacturing. The scanning capabilities offer a means for capturing 3D data from existing items by use of non contact laser scanning of complex, organic geometry and touch probe, reverse modeling that provides feature based, parametric data of simple prismatic geometry.

Together, the RTL staff offers over 25 years of experience in additive manufacturing and 3D Data Capture. Each member is completely cross-trained on each technology in order to rapidly respond to customer and Warfighter needs.

Features

- Highly skilled staff with master certification in rapid prototyping by Society of Manufacturing Engineers (SME)
- Additive manufacturing and 3D printing
- Model making
- Room Temperature Vulcanized (RTV) tooling/urethane casting
- 3D haptic feedback sculpting
- RE/3D data capture
- Inspection Equipment/CMM machine

Capabilities

- Provide functional prototype parts in the following materials: ABS, polycarbonate, ultem, nylon 11&12, glass filled nylon polyamide, polypropylene-like stereolithography apparatus (SLA) resin, clear water resistant SLA resin, high temperature SLA resin, ABS-like SLA resin, elastomers and a full assortment of urethane casting material
- Provide 3D data capture and reverse modeling of existing physical items and output in virtual environment to be used for further design, inspection or reproduction
- QA/QC part inspection

Equipment

- Stratasys FDM Fortus 900 MC
- 3DSystems SLA Viper, 3500 and 7000
- 3DSystems SLS Vanguard HS w/ Stable Temp
- MK Systems Vacuum casting machine
- Objet Connex 3D Printer
- EOS M270 Direct Metal Laser Sintering (DMLS)
- Minolta Range7, Vivid 910 and FARO 3D non-contact laser scanners
- 8 ft. Gold Series FARO Arm/12 ft. Platinum FARO Arm/ Scanner
- Freeform Phantom Sculpting Arm

For more information, please call **410.436.5542** or
e-mail **ecbc-adm@conus.army.mil**

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