QUAKE Consortium

CONNECTICUT CENTER FOR ADVANCED TECHNOLOGIES – MANUFACTURING PROCESSES & DEVELOPMENT FOUNDING MEMBER

Connecticut Center for
Advanced Technology, Inc.

Advanced Manufacturing Center

ADDITIVE MANUFACTURING

Producing prototypes, repairing components, and building new parts.

Plastic

- Print ultra-high resolution parts with different degrees of transparency, shading and flexibility using plastic resins including ABS-like, elastomers and polycarbonates
- Print high resolution nylon parts reinforced with carbon, Kevlar and fiberglass fibers

Metal

- Print near net shapes with metals including steels, (mild, tool and stainless), alloys of aluminum, nickel, titanium, cobalt and copper, and refractory metals
- Build new parts, create prototypes
- Fabricate parts with integrated features and properties
- Add material to existing metal parts for unique repairs or modifications
- Perform cladding or surface treatment
- Create graded and mixed material builds using multiple hopper powder feeds
- Develop and test your repair process

Technology that delivers

- 3D Plastic Printing – Projet 5500X, Markforged II
- 3D Metal Printing - Optomec 850R LENS for controlled atmospheric builds, HRAM for custom High Rate Additive manufacturing system capable of building large parts quickly
- Hybrid Manufacturing - DMG Mori LASERTEC 65 3D for 3D metal printing and mill/turn capabilities in one machine

PRECISION MACHINING

Run better and faster using new technologies that optimize machining and increase your productivity.

Machining Optimization

- Utilize tool path optimization software to improve material removal rates

CNC Programming

- Provide CNC programming support

Evaluate Cutting Tools

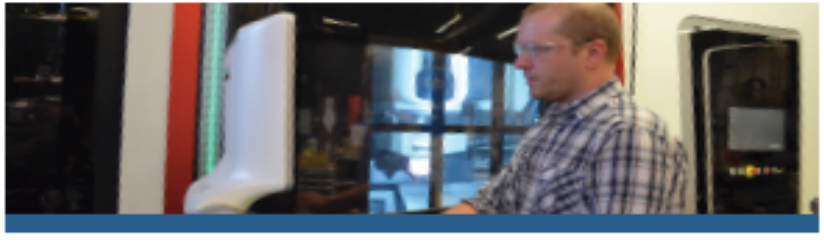
- Evaluate alternative cutting tools and methods to increase tool life

Evaluate Alternative Machining Technologies

- Compare your machining capabilities with EDM, ultra-sonic or hybrid technology capabilities

Technology that delivers

- Mill/turn hybrid manufacturing – DMG Mori Lasertec 65 3D
- Large composite machining – Zimmerman FZ 33 5-axis
- Ultrasonic machining - DMG Mori 65 mono block 5-axis
- Simultaneous 5-axis machining with performance monitoring instrumentation that includes a high-speed camera, dynamometer, horsepower monitor - Mazak Variaxis 630-5X-II-T
- Wire EDM - Sodick SL400G with linear motor drive
- Machining Optimization software tools – Third Wave, VoluMill



SCANNING TECHNOLOGY

Are you searching for an easy, cost-effective way to get precise product inspection data or create 3D models from existing parts?

At CCAT, you have access to the latest structured light scanning technology for your quality inspections and reverse engineering needs.

Structured Light Scanning

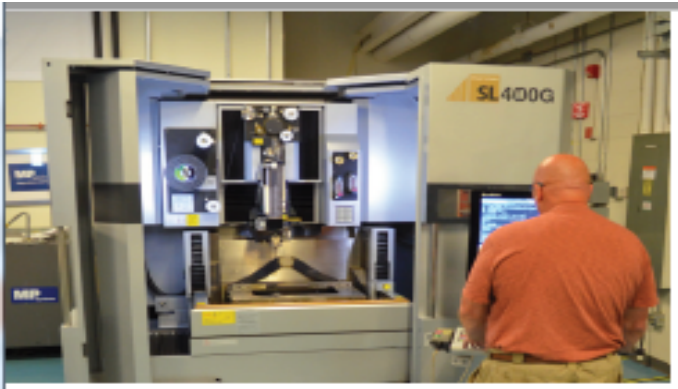
- Quality Control - validate geometric dimensions and tolerance accuracy to 0.0004 inches
- Reverse Engineering - create 3D CAD models and drawings that capture design intent or exact surface models for form, fit and function analyses
- Rapid Prototyping – 3D print prototypes from scan
- Integrated on machine inspection for in-process verification

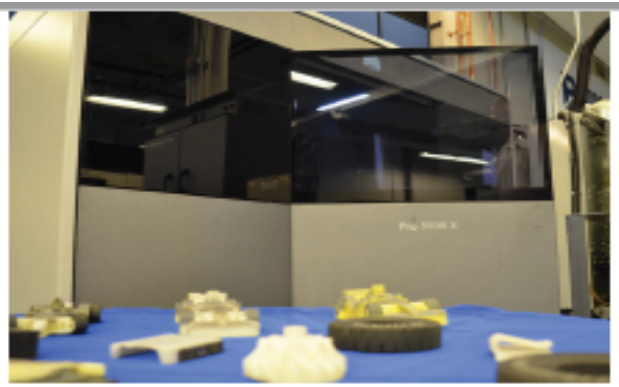
3D Computed Tomography (CT) X-ray Scanning

- Advanced Material Analysis
- Product Quality Compliance/Screening
- Product Contamination
- Internal and External Measurements
- Density Analysis

Technology that delivers

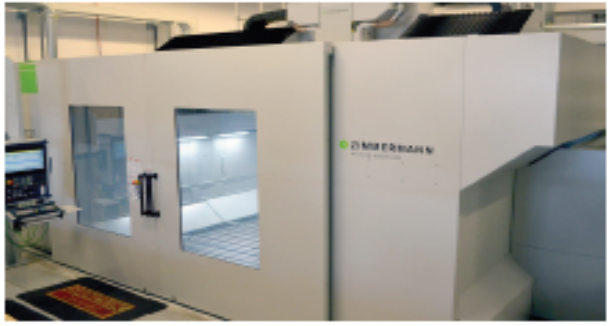
- Blue light scanner - GOM ATOS Triple scanner with 5108 ScanBox
- Structured light scanner – M3DI scanner 3D CT X-ray scanner - NSI X-5000

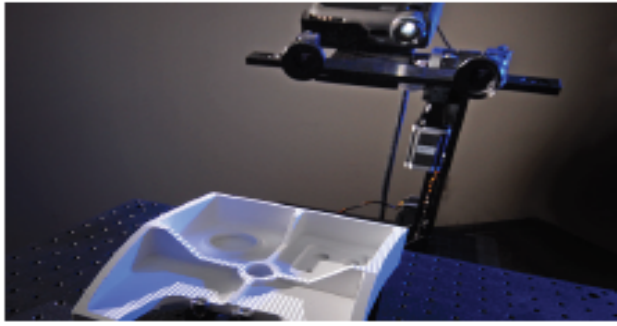

SL400G




X5000

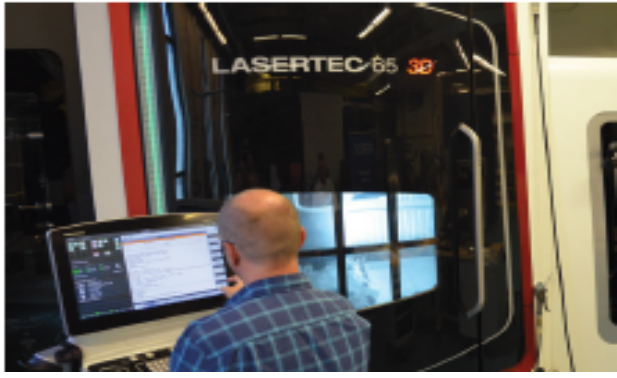

Mazak
VARIAXIS






ULTRASONIC


OPTOMEC


LASERTEC 65 3D