Materials Development and Precision Manufacturing

Specializing in precision engineering, fabrication, metrology and materials characterization

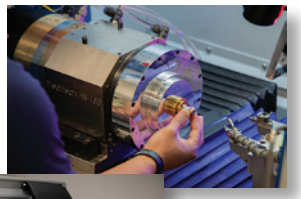
ManTech's Livermore Laboratory located in Livermore, California, combines engineering design and materials expertise with precision fabrication capabilities to solve your most challenging prototyping and manufacturing challenges. From concept to final solution, we work closely with you to define and refine requirements, perform project planning including engineering design, process or materials development, and project execution. Close consistent communication with you is essential to successful project completion.

Representative Materials

- Metal films and coatings
- Polymers & polymer films
- Metal-doped polymers
- Metal oxides/nitrides
- AR coatings
- Low density solids

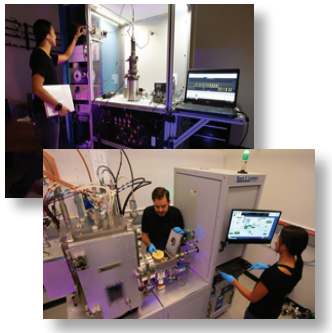
Precision Design and Fabrication

- Micron tolerances at centimeter scales
- Conventional CNC machine tool fabrication
- Ultra-precision micromachining
  - diamond turning lathes
  - precision milling & grinding
  - laser machining
- Component assembly to exacting tolerances



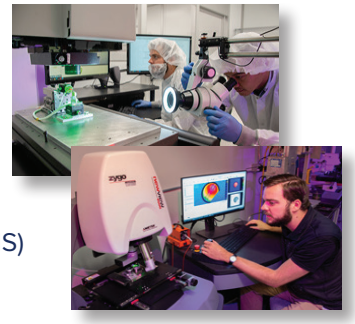
Materials and Process Development

- Polymer synthesis, mixed metal coatings, composites
- Doped polymer synthesis
- Novel materials, aerogels, nanoporous metals
- Physical vapor deposition
- Plasma assisted chemical vapor deposition
- Electro-deposition



Metrology and Characterization

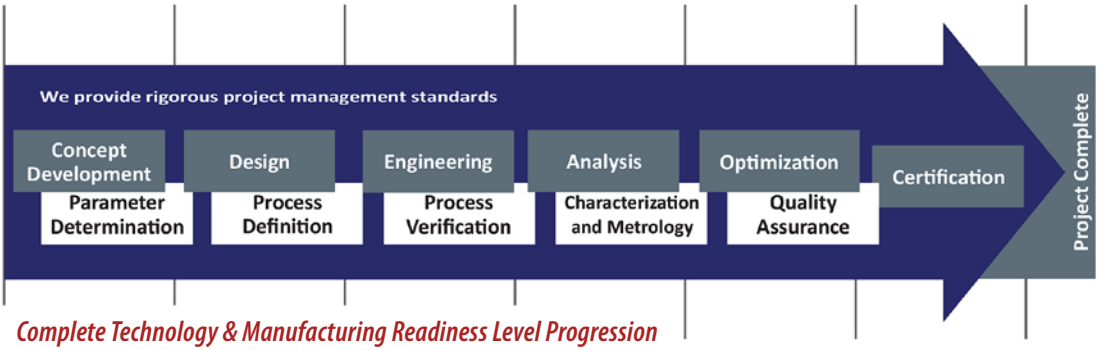
- Optical microscopy and OGP
- Surface interferometry
- Contact probes with nm sensitivities
- Electron microscopy (EDS and EBSD)
- Mass spectrometry (thermal ionization, secondary Ion, ICPMS)
- Raman, gamma and optical spectroscopy
- Micro XRF
- Powder XRD



Our team of adept scientists and engineers manufacture components and complex assemblies at the millimeter to centimeter scale with sub-micron tolerances.

Project Management

ManTech Livermore Laboratory combines cost-effective project management with extensive precision fabrication, engineering, and materials development capabilities to provide low-risk, best value delivery of customer requirements. We take pride in excellent client relationships based upon close and transparent communication and successful project completion, and we follow best industry security protocols to protect client intellectual property.



Complete Technology & Manufacturing Readiness Level Progression

Equipment

- Precision diamond turning lathes
- Precision 5-axis mills
- Conventional CNC machines
- 3D printers
- Laser scribing and micro-machining
- Sputter coater
- Evaporative coater
- Electroplater
- Polymer coater
- Nexiv metrology microscope
- SmartScope Quest 250 OGP
- Laser scanning confocal microscope
- Digital microscope with image stacking
- Scanning electron microscopes

Markets

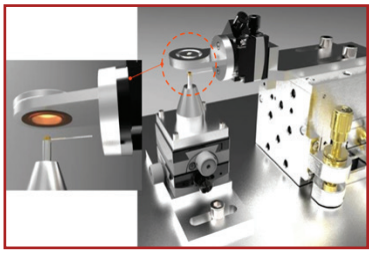
- National Laboratories
- Defense
- Medical Technology
- Technology Development
- Product Development

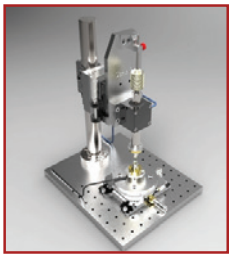
Applications

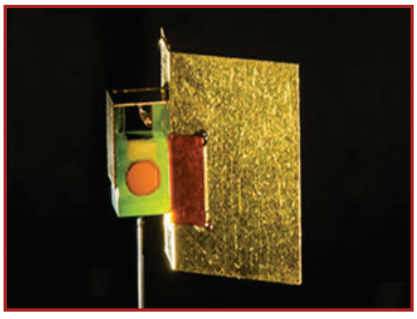
- Microfluidics
- Medical devices
- Sensor technologies
- Microelectromechanical Systems (MEMS)
- Prototyping and development

Major Fabricator of Targets for DOE Laboratories

Over the years our Livermore Laboratory has developed and refined techniques in target fabrication for the Department of Energy's Inertial Confined Fusion, High Energy Density, and basic science programs. These efforts are prompted by evolving needs of our customers for new target types or tighter specifications. The resulting developments in precision micromachining, fixturing, assembly, 2-photon direct-write polymerization, novel metallic and oxide coatings, high-strength polyimide windows, and capsules are applied to provide targets to rigorous standards.







In business more than 52 years, ManTech excels in full-spectrum cyber, data collection & analytics, enterprise IT, systems engineering and software application development solutions that support national and homeland security.

LEARN MORE
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