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Fraunhofer USA

Center Midwest

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Fraunhofer USA Center Midwest (CMW), located in East Lansing and Plymouth, Michigan, focuses on developing applications and products using thin film coatings, diamond materials, and laser technologies.

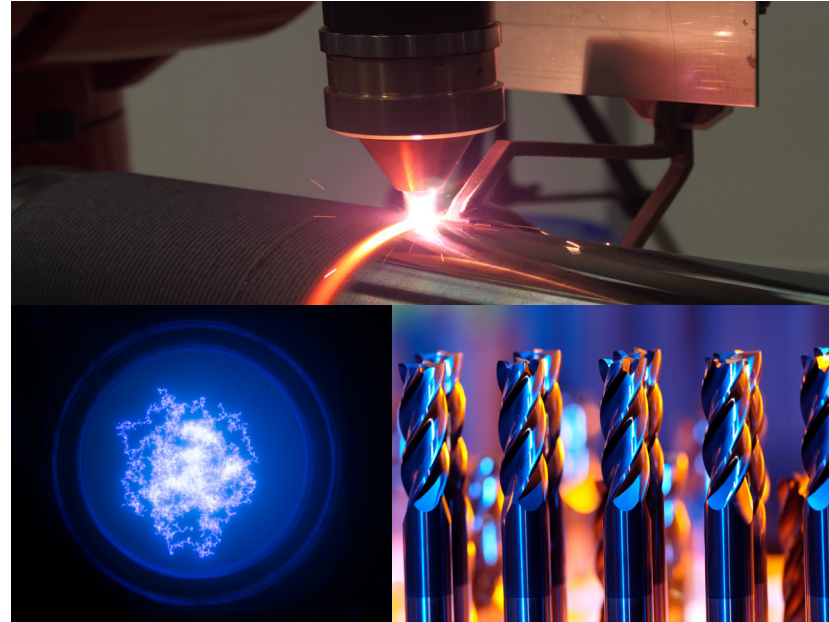
Our Offers

Fraunhofer USA CMW combines a broad range of material development and processing capabilities within its two Michigan-based locations. CMW specializes in applied research and development in the fields of diamond materials and microelectronics, coatings and surface engineering, additive manufacturing technologies, novel materials and composites, and power laser applications. Throughout all specialties, CMW seeks to implement artificial intelligence (AI) solutions into research and manufacturing processes.

CMW focuses on bridging the innovation gap between laboratory research and customer applications. Customers include government organizations and commercial clients from multiple sectors such as the manufacturing, semiconductor, biomedical and energy/battery industries. Fraunhofer USA CMW sets a high priority on quality management and is ISO 9001 certified.

Partnership with Michigan State University

Since 2003, CMW has operated in tandem with MSU on applied research and development initiatives across CMW's core competences, on both government- and industry-sponsored projects. MSU, the nation's pioneering land grant institution, has over 50,000 undergraduate students and over 10,000 graduate students. MSU's College of Engineering and College of Natural Science collaborate closely with CMW on both research projects and student training for next-generation materials manufacturing.



Technologies

Diamond

- Diamond technologies enable advancements in power and RF electronic devices, enhancing performance and reliability in demanding applications
- Innovative solutions for thermal management, particle detectors, and electrochemical sensors leverage diamond's exceptional properties for improved efficiency and durability
- Advancements in synthesis systems and quantum systems drive next-generation technologies in material science

Coatings

- Enhanced wear, friction, and corrosion resistance on metal, glass, and polymer surfaces
- Multifunctional coatings with features such as optical transparency and/or antireflectivity, self-cleaning capabilities, nanostructuring, and enhanced electrochemical capabilities
- Plasma source design and engineering for novel coating materials and applications

Laser

- Developing laser cladding and additive manufacturing processes for improved part performance and efficiency
- Advanced process development for laser welding and joining processes, including remote welding with machine vision and machine learning (AI) technologies
- Advanced process monitoring and control systems