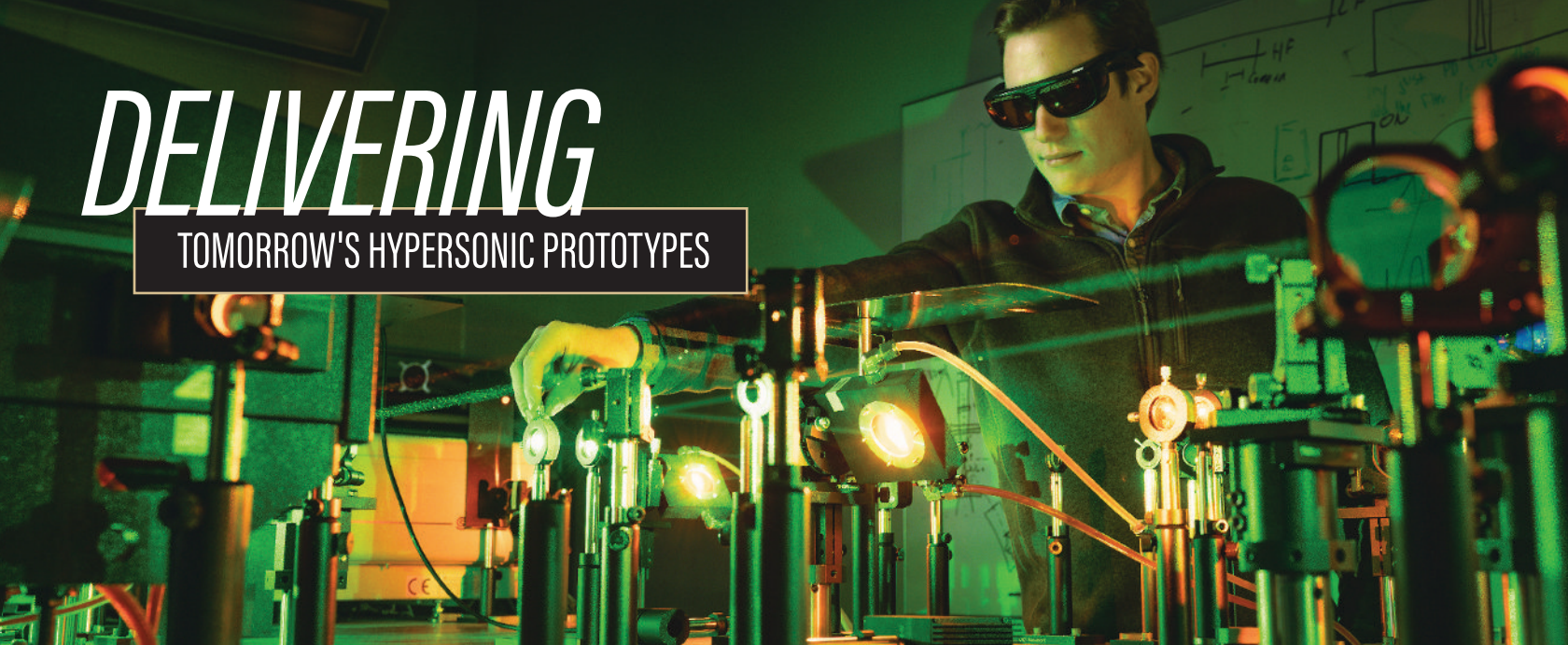


DELIVERING

TOMORROW'S HYPERSONIC PROTOTYPES



The Hypersonics Advanced Manufacturing Technology Center (HAMTC) is a single location at Purdue University where university researchers collaborate with industry partners to develop materials and manufacturing innovations. HAMTC is the premier vertically integrated prototyping center in the nation that enables the design, building, joining and testing of hypersonic components and subsystems in one location, speeding time from concept to full-fledged product.

IMPACT AREAS

Technology Transfer

Industry partners define problems and requirements, making it easier to implement innovations.

Reduce Risk

Prototypes built to scale allow industry to pursue new technology with trusted partners, without disrupting production schedules.

Cutting-Edge Materials Development

Provides advancements in high-temperature materials, including alloys, ceramics and composites that can withstand hypersonic flight.

Manufacturing Innovations

Provides new and unique additive manufacturing processing through a collaboration with GE Additive and co-location of personnel.

Secure U.S. Supply Chain

Enables a single location for supply-chain partners to work closely together with HAMTC personnel and each other.

Workforce Development

Through student development, HAMTC trains the next generation of skilled workforce ready to tackle key hypersonic issues.

Defense Support

Improves manufacturing capabilities and industrial requirements with a demonstrated capability to support DoD hypersonic missions.

Reduce Prototype Time and Cost

The vertical integration of HAMTC allows partners to go from design, build, join and test in one building.

HYPersonICS AND APPLIED RESEARCH FACILITY

The Hypersonics and Applied Research Facility (HARF) is a \$42M investment by the Purdue University Board of Trustees. The 64,000 square foot building is home to the Mach 8 Quiet Wind Tunnel, HYPULSE Shock Tunnel and HAMTC.

HAMTC CAPABILITIES

DESIGN

- Digital Engineering and Digital Twin
- Systems Integration and Design Trade Studies
- Design for Hypersonic Intent
- Materials Development

BUILD

- Ceramic, Metals and Dissimilar Materials Printing
- ICME Modeling to Support Rapid Material Qualification and Part Certification

JOIN

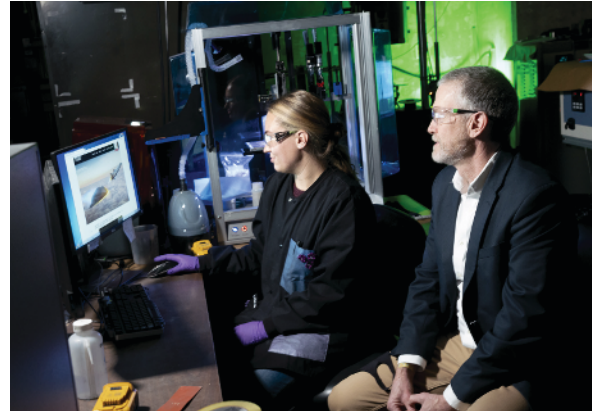
- Advanced Joining Techniques
- Novel Coatings
- Part Count Reduction through Additive Manufacturing

TEST

- Thermo-Mechanical Testing
- Environmental Testing
- High-Speed Propulsion Testing
- Aerodynamic and Aerothermodynamic Testing

HAMTC EQUIPMENT HIGHLIGHTS

- Coating Application
- Machining, Finishing and Chemistry
- Diagnostics for Wind Tunnel and Combustion Testing
- Inspection and Material Characterization
- Mechanical Testing
- Digital Manufacturing
- Metallic Printing
- Ceramic Printing
- Heat Treatment



HAMTC PARTNERS

Aerojet Rocketdyne

Boeing

CompuTherm, LLC

Leidos Dynetics

General Electric Additive

General Electric Edison Works

Innovaveering, LLC

Lockheed Martin Corp.

Molyworks Material Corp.

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