CPC Composite Prototyping Center

Composite Prototyping Center (CPC)

Presentation to IACMI Meeting
January 13-14, 2016 Dearborn, Michigan

Composite Prototyping Center

Composite Prototyping Center Wins National Designation as the Department of Energy's Institute for Advanced Composites Manufacturing Innovation's Designated Center for New York and the Northeast Corridor

Plainview, NY… (October 15, 2015)
The Institute for Advanced Composites Manufacturing (IACMI) today signed a Memorandum of Understanding with the Composite Prototyping Center (CPC, Plainview, NY CPC) outlining a collaborative arrangement in which both will work to bring advanced composite materials and technologies to the marketplace. It is a major achievement for the CPC which has earned this national recognition as the IACMI's designated center for commercializing advanced composites manufacturing on Long Island, New York State and the broader Northeast corridor. The agreement provides the framework for collaboration in research, product development, commercialization, workforce training and STEM (Science, Technology, Engineering and Math) education.

Composite Prototyping Center

Our Mission

CPC's core mission was developed in recognition of the growing demand and opportunities in advanced manufacturing using composite material such as carbon fiber, fiberglass and aramid.

It is:

To take the best assets available to form a core manufacturing competency in the rapidly growing composite market, while providing companies access to essential training /workforce development, process technologies , prototype manufacturing and test capabilities. Thus enabling these companies to meet the rapidly growing advanced composite manufacturing supply chain needs of prime contractors and OEMs.

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THE CURRICULUM

This course is a 15 hour, four-week program taught by the engineering facility from Vaughn College and CPC Personnel. The curriculum consist of both classroom lectures and hands-on lab experience. Students that successfully compete the course will receive one college credit from Vaughn College.

- Introduction to Composites
- Design with Composites
- Analysis with Composites
- Composite Materials and Processes
- Manufacturing with Composites
- Hot Bond Repair

CPC has launched a STEM Composites Initiative which includes college credit

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CPC Manufacturing Floor

CPC will support the following processes & functions:

Automated Fiber Placement	RTM / VaRTM	5 Axis CNC Routing Cell
Autoclaves , Ovens	Compression Molding, Heated Press	Hand Lay-Up with Laser projection assisted templates and kitting capabilities
Clean Room (Class 100,000)	Single Ply Cutting System with nesting s/w	Test and inspection – NDT and CMM tools and instruments
3D Printer	Walk-in Freezer	

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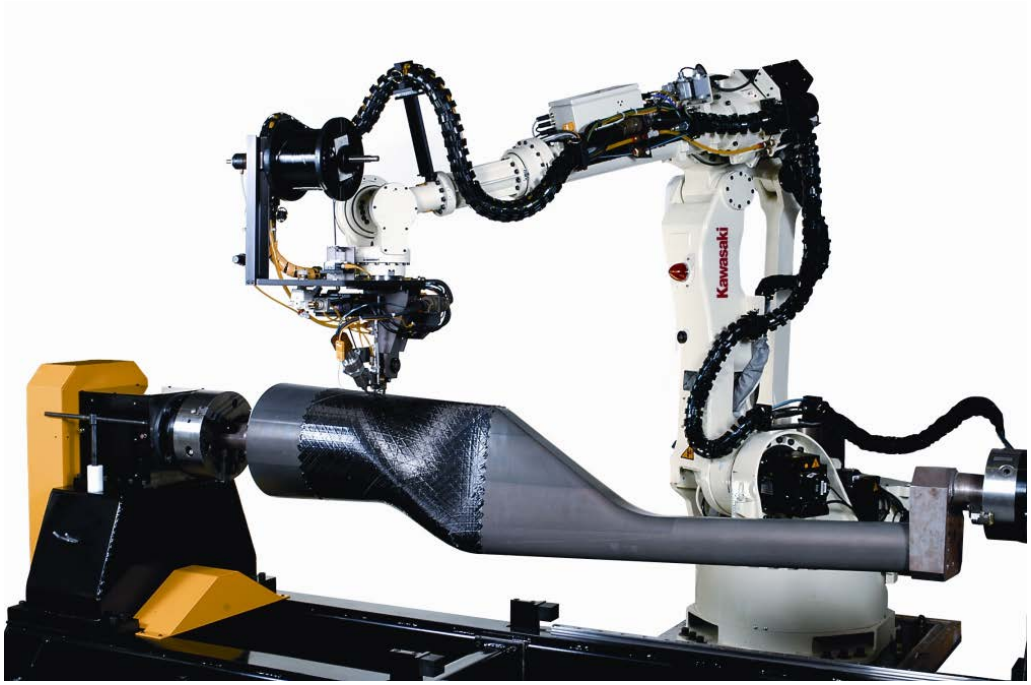
Automated Fiber Placement (AFP) Machine

Manufactured by Automated Dynamics

- Mfg. parts up to 90" long by 48" cross section/diameter
- Thermo-set Heads, 4 -1/4" tows
- Thermo-plastic Heads, 1 - 0.25" /0.50" tape
- Flat panel capable (48"x 96")



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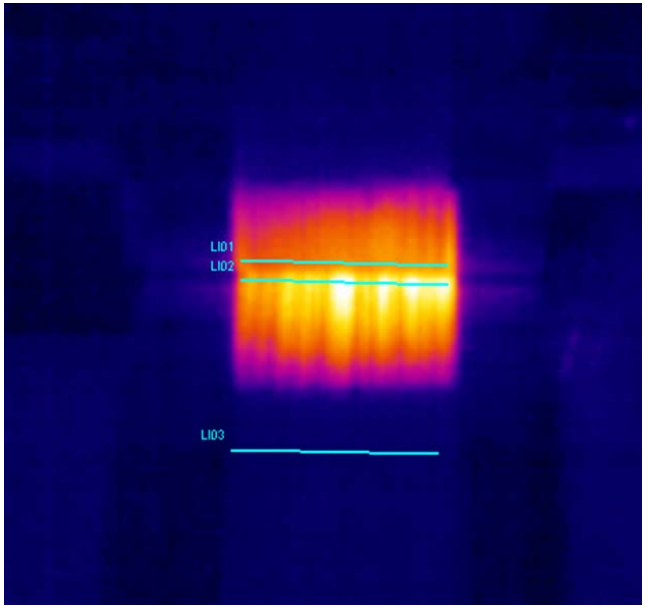
Additive Manufacturing AFP Laser Head

Advantages of Laser Heating

- Higher energy density
- Faster response time
- Greater efficiency
- Higher throughput



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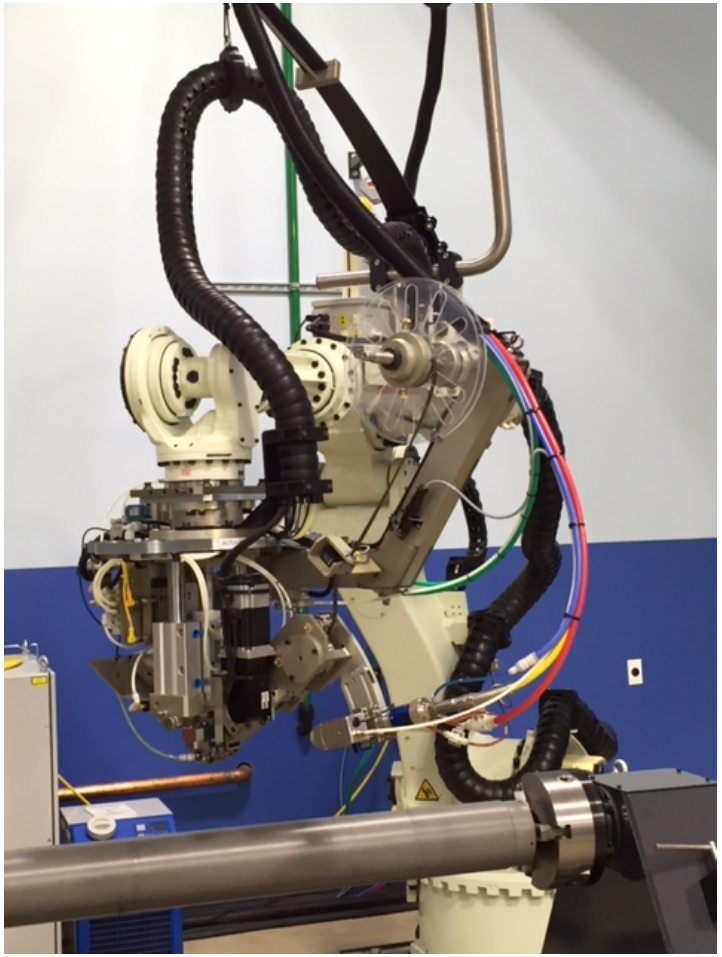
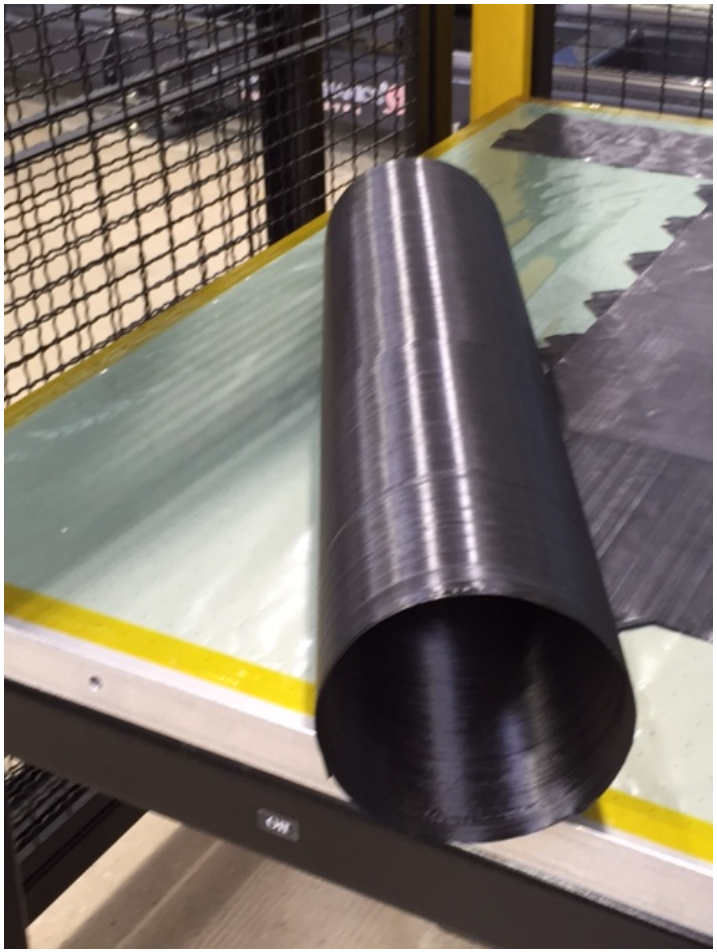


Automated Fiber Placement Laser Head



Prototype Pressurized Tank Proof of Concept

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COMPOSITE PROTOTYPING CENTER

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