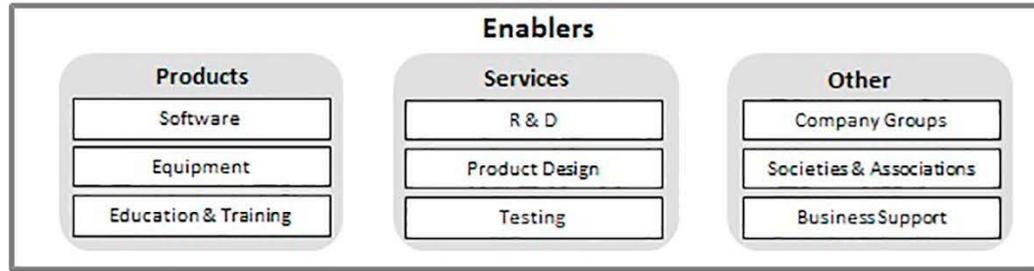


Fraunhofer Innovation Platform for Composites Research at Western University

CAC SMA Careers in Automotive
July, 2025

Western 

in cooperation with
 Fraunhofer





Composite Research Fields

Thermoset Composites Processing

Resins: Polyester, Epoxy, Polyurethane, Phenolic, DCDP ...

Fibers: Glass, Carbon, Basalt, Aramid, Natural ...

Compression Moulding

Sheet Moulding Compound (SMC)

- High volume established composite manufacturing process
- Cost efficient mold-able discontinuous fiber composites
- Wide range of applications from visual to structural parts

High Pressure Resin Transfer Moulding (HP-RTM)

Wet Compression Moulding (WCM)

- Short cycle time advancement on conventional RTM
- High performance composites with high continuous fiber content

Thermoset Pultrusion

- Established method of producing continuous composite profiles
- High performance composites with high continuous fiber content

Thermoplastic Composites Processing

Resins: PP, HDPE, ABS, PA, PC, PBT, PPS, PLA ...

Fibers: Glass, Carbon, Basalt, Aramid, Natural ...

Compression Moulding

Long Fiber Thermoplastic Directline (LFT-D)

- High volume established composite manufacturing process
- Cost efficient mold-able discontinuous fiber composites

Injection Moulding

- High volume established composite manufacturing process
- Mold-able discontinuous fiber composites
- Wide range of applications, small to large, varying complexity

Semifinished Material Forming and Co-moulding

- High performance composites with high continuous fiber content

Thermoplastic Pultrusion

- New pultrusion method with unique ability to weld and reshape

SMC Applications



- ❑ Automotive and Heavy Truck
 - ❑ Exterior Body Panels
 - ❑ Structural Inner Panels
 - ❑ High Performance Rims
 - ❑ Battery Enclosures

- ❑ Consumer Products
 - ❑ Door Skins
 - ❑ Bathtubs
 - ❑ Boat Engine Covers



HP-RTM & LCM Applications

- Automotive
 - Structural Components
 - Leaf Springs
 - Load Floors
 - Battery Enclosures
 - Seat Structures



LFT-D Applications

- Automotive
 - Underbody Shields
 - Truck Tailgates, Sidewalls and Headboards
- Consumer Products
 - Air Conditioner Bases
 - Club Car Body





Semi Finished Composite Applications

- ❑ Automotive
 - ❑ Load Floors
 - ❑ Battery Enclosures
- ❑ Aerospace
 - ❑ Brackets
 - ❑ Seats
- ❑ Consumer Products
 - ❑ Bike Frame and Rims
 - ❑ Hunting Rifles



Injection Molding Applications

- Automotive
 - Instrument panels
 - Oil Pans
 - Engine Covers
 - Valve Covers
 - Seats
 - Front End Carriers



Knowledge, Skills and Experience

Materials Science: In-depth knowledge of polymers, resins, fibers, and other composite materials, including their properties and behavior.

Polymer Chemistry: Understanding of polymer synthesis, modification, and characterization.

Composite Manufacturing Processes: Expertise in various techniques like prepreg, wet layup, resin transfer molding, and other methods.

CAD Software: Proficiency in using software like SolidWorks or CATIA for design and analysis. Familiarity with tools like ANSYS or Abaqus for structural and thermal analysis.

Technical Drawings and Specifications: Ability to interpret and create technical drawings and specifications for composite parts.

Quality Control: Understanding of statistics and relevant quality standards and procedures, such as ISO 9001.

Knowledge, Skills and Experience

Analytical Thinking: Ability to analyze data, identify problems, and develop solutions.

Problem-Solving: Strong analytical and problem-solving abilities to address challenges during the design and manufacturing process. Precision and meticulousness in executing tasks and ensuring quality.

Communication: Effective written and verbal communication skills to collaborate with teams and stakeholders.

Teamwork: Ability to work collaboratively in a team environment.

Organization: Strong organizational skills to manage multiple projects and tasks.

Project Management: Experience in managing projects, including scheduling, budgeting, and resource allocation.

Adaptability: Willingness to learn and adapt to new technologies and processes.