The Manufacturing Systems Research Lab at the General Motors R&D Center located in Warren, Michigan is searching for a Research Engineer in the area of Composites Manufacturing. There are exciting growth areas at GM R&D where researchers will be part of a dynamic team that is focused on improving GM’s composite manufacturing capabilities to enable future vehicle light-weighting requirements. Assignments will vary depending on background, but they will be expected to provide immediate technical and professional leadership in assignments of strategic importance to GM R&D. Researchers are also expected to counsel GM engineering management on manufacturing engineering process, practice and tool improvements, as well as carry out leadership roles in GM programs and/or projects. They will likely represent GM in a variety of research activities with contractors and academic collaborators, and at other GM Centers, and external agencies and technical organizations. In addition, researchers are expected to develop a strong record of invention, publishing and presenting.

The specific research focus of composites manufacturing is to improve the forming, joining, and assembly processes and meet throughput, quality, and cost requirements for high-volume automotive production. In this area, the candidate will contribute to the development of novel algorithms, models, tools, and experimental methods that can be implemented in current or future manufacturing plants. A successful candidate should also have a strong background and experience in composite materials, mechanics, and process control.

**Composites Manufacturing Researcher:**
Plan and execute research programs, generate new knowledge and innovative technology for application to manufacturing processes and systems, specifically related to composite materials.

**Summary of Job Responsibilities:**

- Develop experimental and theoretical advanced math modeling & simulation techniques for molding and joining processes of composite materials (thermoplastics/thermosets) as it applies to vehicle structures
- Generate innovative ideas and conduct research programs in the area of composites processing incorporating real-time sensing and control technologies for automotive manufacturing plants
- Execute technical assignments in a resourceful, solid, and timely manner with minimal supervision
- Work well with fellow researchers, divisions, centers, operational groups, plant personnel and universities
- Maintain state-of-art technical skills and knowledge
- Develop working relationships with internal and external subject matter experts
- Effectively communicate and document results through internal and external publication
- Collaborate with global technical teams and lead technical discussions as an expert in composites processing technology
Qualifications:

Experience Required:
- Ph.D. in Mechanical / Materials / Chemical / Polymer Engineering (Required)
- Dissertation/Focus in Composites Manufacturing (Forming, Joining, Assembly, or Process Control)
- 3-5+ years relevant experience in the field of composites
- Background in mechanics and processing of composite materials
- Manufacturing engineering theory and principles of production operations.
- Expertise in CAE simulation and optimization tools for composite materials
- Excellent communication and teamwork skills
- Proven record of high impact publications in peer-reviewed conferences/journals

Preferred Skills:
- Minor in industrial engineering or operations research
- Manufacturing engineering experience: basic manufacturing processes, quality engineering, planning, scheduling, shop floor control, lean manufacturing
- Ability to collaborate with state-of-the-art players among suppliers, academics, other labs
- Background in controls: process monitoring, sensing, and control, hardware/software for PLC and PC-based machine controls, and human-machine interfaces design in manufacturing applications
- Computer skills:
  - Software: database design and integration, programming skills
  - CAE tools: Abaqus, Ansys, LS-Dyna, Moldflow, etc.

Steps to Apply:

1. For a description of the position, and to submit your resume, go to: [http://gmibm.avature.net/careers/JobDetailResearch?jobId=4734](http://gmibm.avature.net/careers/JobDetailResearch?jobId=4734)
2. Note that you will need to create a Candidate Profile as part of the submission process.

Hiring Manager:

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