

# The Office of Technology Management

UNIVERSITY OF TEXAS  ARLINGTON

Tech ID: UTA 12-46/12-47

## Flexible Manufacturing System (FMS)

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### TECHNOLOGY NEED

Flexible manufacturing systems (FMSs) are technologies which possess the benefits of both computers and numerical control machine tools. Yet, after the rapid growth in FMS installations, operation managers soon realized that conventional FMS is not ready to answer the market's need for rapid prototyping at a micro-scale.

### INVENTION DESCRIPTION/SOLUTION

To address this issue, researchers at UT Arlington have developed an advanced Flexible Manufacturing System (FMS). The FMS is comprised of two main components: the Design for Multiscale Manufacturability (DfM<sup>2</sup>) and the Modular & Reconfigurable Manufacturing Cell (MRMC). The systems complement each other by using an interactive software application that allows the user to estimate common manufacturing metrics including process yield, cycle time, overall cost, and device performance. Together, the two components capitalize on pilot production of heterogeneous, 3D, and non-traditional product ideas. The cell is characterized by magnetized, reconfigurable parts that automatically relay reconfiguration data to the accompanying software.

### APPLICATIONS

- Rapid manufacturing
- Educational tool at academic institutions

### KEY BENEFITS

- Lower cost per unit produced
- Reduced manufacturing times
- Greater labor productivity
- Increased machine efficiency
- Reduced parts inventories
- Shorter lead times
- Adaptability to multiple operations

### STAGE OF DEVELOPMENT

Lab Prototype

### INTELLECTUAL PROPERTY STATUS

Patent Pending

[US20140121803A1](#)

[US20140121820A1](#)



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