Artificially Intelligent Manufacturing Paradigm for Composites (*AIM for Composites*)

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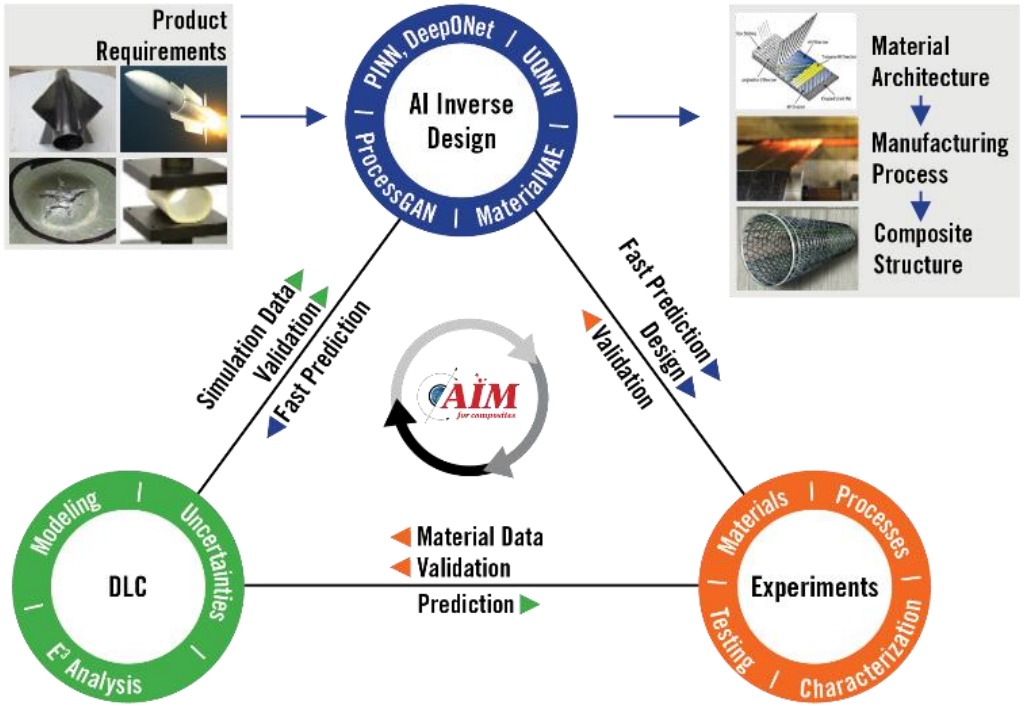
MISSION: To build an AI-enabled inverse design approach for fundamental understanding and integrated material-manufacturing design of advanced polymer composites.

RESEARCH PLAN

AIM for Composites brings together a multi-disciplinary team of experimentalists, computational researchers, and computer scientists to (1) unravel the fundamental underpinnings of the material-process-microstructure-performance (MP2) relationship via constructing a "Digital Life Cycle" (DLC) high fidelity multiscale modeling and simulation platform; (2) leverage physics-informed AI models to enable inverse composites material architecture and manufacturing process design; and (3) inform and validate the DLC and AI models and implement new material and process designs by exploiting innovative material engineering, characterization, and testing methods.



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AIM for composites