Undergraduate Research Opportunities

Description

Dr. Ji Ho Jeon's research group offers undergraduate opportunities in dissimilar material joining and robotic composite additive manufacturing. The work emphasizes the complete experimental workflow, from composite fabrication and robotic deposition to joining and mechanical testing. Students will gain hands-on experience with lab-scale robotic systems, composite processing, and mechanical characterization to study how manufacturing and joining parameters influence structural behavior.

Key research areas include:

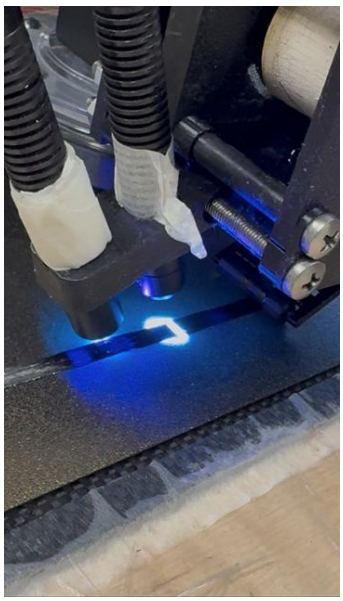
• Robotic path planning for large scale composite additive manufacturing.

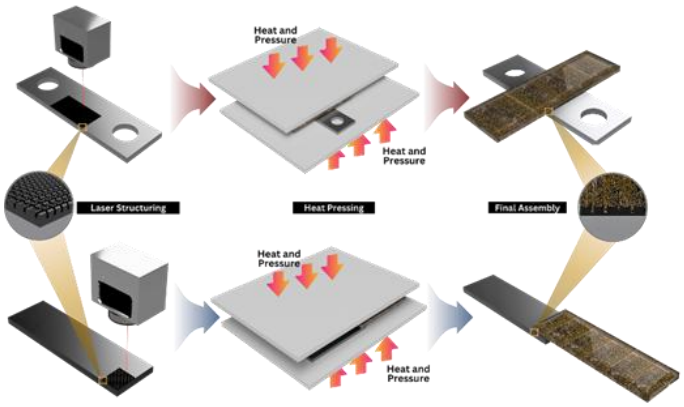
• Fabrication of composite test coupons with controlled fiber alignment and resin impregnation.

• Joining of composite materials with metals using mechanical, thermal, and hybrid approaches.

• Tensile, bending, and interfacial strength testing of joined structures.

• Experimental study of process–structure–property relationships in dissimilar material systems.





Student Responsibilities

Students will conduct literature reviews, assist with experimental setup, fabricate composite specimens, perform joining and mechanical tests, and analyze experimental data. Credit may be earned through Independent Study.

Qualifications and How to Apply

Junior or senior undergraduate students are preferred. Experience with CAD tools, 3D printing, or basic programming is helpful. Completion of courses in mechanics of materials is encouraged. Interested students are encouraged to reach out via email to arrange a brief discussion with Dr. Jeon.

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