

Faculty of Engineering

Summer Research Program 2024-2025

Project Title: Additive Manufacturing Hierarch Materials

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Objective

Alloy selection and Development: Refining current two-alloys system specifically tailored for AM techniques to enhance hierarchical structuring and overall material properties – high modulus with low density and good ductility.

Process Optimization: Identify and optimize key additive manufacturing parameters to produce metals with hierarchical structures at micro, meso, and macro scales.

Project Details

This project aims to develop advanced additive manufacturing (AM) techniques for producing hierarchically structured metals. These metals exhibit multi-scale structures that provide superior mechanical, thermal, and electrical properties, making them ideal for high-performance applications in aerospace, automotive, biomedical, and other industries. The project will focus on optimizing the AM process parameters, designing a two-alloys system, and developing post-processing methods to achieve the desired hierarchical structures.

Prerequisites

Physical metallurgy background and basic FEA skills

Additional Information

Give any additional information here – eg. 'applicants may be required to attend an interview'. (*Delete if not applicable*)

Submit as a word document - no more than one page long.