Contact person: Akilan Mathiazhagan, Email: akilanmathi.btu@gmail.com

Design optimization of heat exchangers with novel cellular structures

Hybrid Election Propulsion (HEP) is becoming an emerging field in the aerospace industry on account of its contribution towards reducing transport emissions. HEP system architectures are sophisticated and encompasses several thermal components. Heat Exchangers are an important component of HEP architecture and contribute significantly towards temperature moderation. Heat exchangers in HEP system architectures have relatively sophisticated heat transferring components to allow for higher heat transfer and facilitate better cooling. The current task would focus on the design optimization of novel heat exchangers

Overview:

- Design optimization on novel heat exchanger designs.
- CAD modeling, e.g. SolidWorks, NX, etc.
- Design optimization could be achieved via MATLAB or Python as suited.
- Understanding the different objective functions that influence the optimization steps, isolation and selection from amongst the different optimization algorithms.
- Heavy coding, and literature review of existing techniques.
- Required supervision would be provided by respective PhD students.