

Master Thesis (2)

Design, analysis, and environmental testing of spacecraft structures for space debris reduction

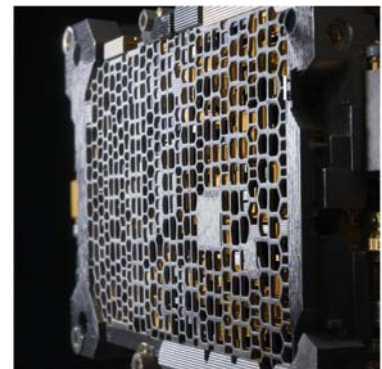
As space exploration grows, so does the need to protect the environment—both on Earth and in orbit. One way to tackle this challenge is by designing spacecraft using eco-friendly materials, like biodegradable composites or recyclable metals. Another way would be the change in structural design to ensure better burn-up. But before they can be used in missions, they must pass tough environmental tests to ensure they can survive the harsh conditions of space, including extreme temperatures and vacuum. This thesis supports the idea of “clean space,” which means building and operating spacecraft in ways that are safer, more sustainable, and better for future generations.

Focus topics selection (2 Master’s Theses possible):

- 1) Enhanced structure design to increase re-entry burnup probability
- 2) Use of ecological materials for structures

Your Tasks

- Review of ecological structure materials used for/in satellites and material selection or structure profile
- Design and manufacturing/analysis of sample structure
- Setup and execution of environmental testing under supervision, including vibration, temperature and/or vacuum
- Validation of results



Your Profile

- Completed bachelor’s degree in electrical engineering, material sciences or related
- Interest in space activities and ecological materials
- Willingness to actively engage in research work
- Strong problem-solving skills and critical thinking
- Team-oriented and organised

Contact

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