

ENERGETICS

Thales Alenia Space/DENERG - Development of two-phase active thermal systems for space applications

Funded By	Dipartimento DENERG THALES ALENIA SPACE ITALIA S.P.A. [Piva/CF:00991340969]
Supervisor	SAVOLDI LAURA - laura.savoldi@polito.it
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Context of the research activity	The PhD will focus on numerical and experimental research on two-phase active thermal systems for the re-entry phases of a spacecraft
Objectives	<p>The PhD activity will focus on thermal control systems with two-phase flow for space applications. In particular, the following points will be discussed:</p> <ul style="list-style-type: none">- Study of a heat dissipation system based on fluid boiling, useful for the re-entry phases of a spacecraft- Selection of the working fluid and simulation of the system- Detailed study of the heat exchanger and simulation of the fluid behavior- Definition of a representative laboratory test set up, support in the realisation of the test rig- Design of the test campaign, participation to the test and interpretation of the measured data <p>All the activities will be carried out in collaboration to the Thermal Control division of THALES Alenia Space Italia, Torino.</p>
Skills and competencies for the development of the activity	The ideal candidate should have a background in aerospace engineering, computational fluid dynamics and some knowledge about heat transfer mechanisms. A know-how on heat exchangers is preferable.