JP17002

Internship for Master Thesis – R&D (Thermal Engineering)

Job issue date:	21 Feb 2017
Location:	Berlin, Germany
Education:	Mechanical or Aerospace Engineering Master Student
Contract type:	MS Thesis
Start date:	March 2017

Sonaca Space GmbH operates over a broad range of the supply chain providing engineering services, testing, and R&D competences for the space sector with a global reach. We have a long track record working for customers such as the European Space Agency (ESA), the German Aerospace Center (DLR), Airbus, Thales Alenia, and various European SMEs.

Job Description and Responsibilities

Topic: Development of a carbon-based flexible thermal link for thermal management of space systems

Flexible thermal links, or 'thermal straps', are used in a wide variety of applications to provide a passive mean of transporting heat from a source to a thermal sink. In the aerospace industry they are commonly used when sensitive equipment e.g. infrared detectors or focal planes needs to be thermally coupled but structurally decoupled to coolers e.g. cryo-coolers or heat exchangers.

Traditionally, most thermal straps have been constructed from either aluminum or copper due to the inherently high thermal conductivity, low relative material cost, and durable mechanical properties of these metals. Nevertheless, in the past twenty-five years, the development and commercialization of carbon-based materials - with lower density and higher thermal conductivity than copper or aluminum - has led to cutting-edge technology concepts and more attractive products for aerospace applications where mass budget is critical.

In this regard a technology development program has been fostered by Sonaca Space GmbH to start a new European production line of thermal straps. As a part of this program Sonaca Space is offering an internship position for a Master Thesis.

Scope of the thesis is the entire (end-to-end) development of the abovementioned technology. The candidate will be in charge of:

- market survey and literature review,
- materials and design trade-offs,
- mechanical and thermal performance assessment,
- procurement activities support,
- production, thermal and mechanical test campaigns assistance for a flexible thermal link made out of carbon-based materials.

Required Skills

- Spacecraft thermal control systems knowledge and understanding (academics).
- Familiarity with programming languages (e.g. C/C++, Fortran, Mortran).
- Basics in CAD design (e.g. SolidEdge).
- Fluency in English, written and verbal.

Desired Skills

- Familiarity with structural analysis and/or thermal analysis software (e. g. HyperWorks, ESATAN-TMS, ThermXL)
- Manufacturing Engineering knowledge and skills in composite materials are a plus
- MSOffice (Word, Excel, Power Point, Visio, and Outlook)
- Fluency in German (verbal) is a plus
- Team spirit, dedication and flexibility
- Ability to work to a dynamic schedule

Time-frame/Dedication/ Wage

ca. 5 months/20 hours per week/According to standard internship/master thesis compensation scheme

Application

Please send a CV and cover letter to: jobs.de@sonaca-space.com, with the reference "JP17002"

Deadline

March 22, 2017

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