

## Thesis Project Offer

*Joint Research and Education Programme "Palestinian-German Science Bridge PGSB"  
Forschungszentrum Jülich GmbH & Palestine Academy for Science and Technology*

### Thesis type\*

<input type="checkbox"/> BSc	<input type="checkbox"/> MSc	<input checked="" type="checkbox"/> PhD	Intended starting date (approx.): 01.05.2020
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Title	Degree	First name	Surname
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University/institution	Department/faculty/institute

### Project description\*

Thermal and structural modelling of a satellite instrument

This PhD project deals with the analysis and implementation of a satellite remote sensing instrument to measure high resolution temperature data of the atmosphere. A first version of that instrument was launched in 2018 as part of a Chinese technology demonstration satellite. This activity has proven the instrument concept and its capability to measure atmospheric temperature. A successor instrument will be deployed in 2021 and 2022 in two satellite missions conducted within the International Satellite Program in Research & Education (INSPIRE). The program involves undergraduate and graduate students from several nations. The particular topic of this PhD project is the structural and thermal analysis and optimization of the AtmoLITE remote sensing payload:

- \* Thermal environment simulation for the next INSPIRE mission
- \* Thermal modelling of the heat transfer inside the satellite and the AtmoLITE payload
- \* Performance simulation of optical components for different temperatures (using an existing optical model of the instrument)
- \* Mechanical and thermal design optimization
- \* Structural and stress mode analysis and optimization of the payload
- \* active involvement in the implementation of the AtmoLITE payload and the next INSPIRE mission

Date*	Signature*