

2nd Call for Proposals for a Junior Research Project (duration 18 months) in the SE²A Cluster of Excellence

The Cluster of Excellence **SE²A – Sustainable and Energy Efficient Aviation** is an interdisciplinary DFG-funded research center pushing forward technologies and integrative strategies to make future air traffic efficient while meeting the competing demands for continuous growth and environmental sustainability at the same time. In this research alliance, scientists at the TU Braunschweig, Leibniz University Hannover, the German Aerospace Center, and the National Metrology Institute of Germany have joined forces for this extraordinary scientific effort.

Within the three core research areas, i.e. Assessment of the Air Transport System (ICA A), Flight Physics and Vehicle Systems (ICA B), Energy Storage and Conversion (ICA C), the cluster offers additional financial support to advance highly innovative ideas and approaches of young scientists, which are not covered by other projects in the cluster. The cluster will try to integrate successful Junior Research Projects (JRP) later as regular projects thereby fostering the early career of highly qualified junior researchers.

Topics

This 2nd call for JRP proposals is focusing on research ideas and hypotheses in the following scientific topics:

1. Hydrogen in aviation

This covers all aspects related to the processing of hydrogen on the „air side“ of the aviation industry, e.g. airport storage and logistics, aircraft storage (tanks and systems), aircraft hydrogen conversion (fuel cells and gas turbines) as well as H₂O emissions and climate impact.

2. Thermal management & cooling

Here, fundamental solutions and technologies for heat transfer and control, heat loss management and cooling systems for on-board powertrains and related components shall be addressed.

3. Technology assessment and optimization

Methods for technology assessment and optimization strategies shall be applied to or developed for topics 1 and 2 above. Here, especially cooperation with existing projects and new JRP proposals in the fields above will be supported.

Who can apply?

Candidates must provide innovative and promising research ideas within one of the three scientific topics described above.

Researchers on a post-doc level (in compliance with the DFG definition of early career researchers and holding a PhD) with an excellent record of publications and research experience, which are employed at one of the SE²A-cluster participating institutions can apply. Funding of the applicant's own position is not possible. As the Excellence Cluster SE²A strongly promotes participation of women in engineering sciences, applications of female scientists are especially welcome.

What we offer

The scientific project of a successful applicant will be funded for up to 18 months while the total amount of funding is limited to 100k€. The applicant will be expected to perform her or his research project at his employing institute. As a project lead, the applicant will be fully integrated into the Cluster's communication. In total, up to 6 junior projects will be funded.

Application process

Please send a complete written application as a single PDF file by e-mail to the SE²A Office se2a@tu-braunschweig.de before or on **May, 14th 2021**

Applications comprise the **project proposal** (maximum 5 pages) including the goal, motivation, your idea of methodical and contextual contribution to one of the three scientific topics, your own preliminary work, working program, schedule, financial support requested (consumables, research assistant), planned interdisciplinary collaborations within the cluster. Please also provide **personal details** including a full CV, academic certificates and transcripts (Bachelor and Master degrees, PhD), other supporting certificates, and list of publications.

Signatures: The project proposal must be signed by the applicant and co-signed by the head of the institute which thereby agrees to support the applicant in their research and by providing the required infrastructural environment.

Personal data and documents related to the application process will be stored electronically.

For further information please visit our website www.tu-braunschweig.de/se2a

Review process

The SE²A Board will review the applications and will select the successful proposals based on DFG quality criteria and the expected contribution to the SE²A cluster. Criteria for the review process are:

1. fit of the proposal with the overall targets of SE²A,
2. originality and novelty of the idea,
3. integration and cooperation with other projects,
4. quality of the work program and cost, and
5. quality of preliminary work.

Funding decisions will be communicated to the applicants at the latest by **June, 30st 2021**.

Project funding will begin on 1 July 2021 for a maximum duration of 18 months.