

SE²A-Newsletter 12/2019

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Dear readers and members of the Cluster of Excellence SE²A,

after its start in January 2019, the Cluster of Excellence „Sustainable and Energy-Efficient Aviation“ looks back on a successful and eventful first year with the launch of over 50 SE²A research projects in three major research areas. New partners as well as long-standing colleagues at the Technische Universität Braunschweig, the German Aerospace Centre (DLR), Leibniz University Hannover (LUH), and the National Metrology Institute of Germany (PTB) are working together to face the scientific challenge for a sustainable and eco-friendly future aviation. We also welcome over 60 new PhD researchers in the Cluster, embedded in an own SE²A doctoral researchers programme promoting their individual potentials.

In this first SE²A-newsletter, we would like to give an overview over our Cluster of Excellence „Sustainable and Energy-Efficient Aviation“ (SE²A), highlight major milestones achieved throughout the first year and give an initial outlook of upcoming events.

We would like to thank the whole SE²A Cluster Team, the University management and our supporters for this successful start and wish you a prosperous New Year with exciting new scientific progress.

Kind regards,

Prof. Dr.-Ing. Jens Friedrichs
(Spokesperson SE²A)

Dr. Doris Pester
(SE²A-Managing-Director)

The SE²A-newsletter will be published quarterly. For further information please visit our website: www.tu-braunschweig.de/se2a



// LATEST NEWS



December 4, 2019

Do I have to be ashamed when I fly? - Five questions for Prof. Jens Friedrichs

At the Public Climate School, Professor Jens Friedrichs, speaker of the SE²A Cluster of Excellence and head of the Institute for Jet Propulsion and Turbomachinery, talked about "Flight Shame and the Future of Flying". [more](#)

// RESEARCH

The Cluster of Excellence "Sustainable and Energy-Efficient Aviation – SE²A"

The Cluster of Excellence SE²A is an interdisciplinary research center with the purpose of investigating technologies for a sustainable and eco-friendly air transport system. Scientists from aerospace, electrical, energy and chemical engineering are working on the reduction of emissions and noise, as well as recycling and life-cycle concepts for airframes and improvements in air traffic management. Technische Universität Braunschweig, the German Aerospace Center (DLR), Leibniz University Hannover (LUH), the Braunschweig University of Art (HBK) and the National Metrology Institute of Germany (PTB) have joined

forces in this extraordinary scientific undertaking. The Cluster organisation is structured in three Integrated Cluster Areas (ICAs) reflecting the mission-critical research demands and following a coherent and coordinated roadmap. The three ICAs resulting from our assessment of critical research demand are:

ICA A: Assessment of the Air Transport System

The goal of this cluster area is the development of comprehensive criteria and metrics for sustainable air transport that can serve as a basis for decision-making and future scenarios. [more](#)



ICA B: Flight Physics and Vehicle Systems

This cluster area takes an in-depth look at technologies that have the potential to significantly reduce the power required from the propulsion system. [more](#)

ICA C: Energy Storage and Conversion

Even with major advances in aircraft drag and propulsion efficiency, carbon emissions can only be reduced, while carbon-free aviation requires new concepts for the energy supply. The cluster looks at advanced lithium-sulfur chemistry for solid-state batteries as well as load bearing batteries. [more](#)



// REVIEW EVENTS



October 30, 2019

10 years NFL - Bundled competence for safe and sustainable flying

The Niedersächsische Forschungszentrum für Luftfahrt has been working on developing aircraft that are quieter, safer and more economical for ten years. Launched under the name "Campus Research Airport" in November 2009, the partnership between the TU Braunschweig and the German Aerospace Center (DLR) was sealed, which is now celebrating its 10th anniversary with a festive event. The centre brings together the expertise of 1,000 scientists from 20 aerospace institutes at Carolo-Wilhelmina, Leibniz Universität Hannover and DLR. [more](#)



October 21-22, 2019

1st Cluster of Excellence Symposium

Following the successful launch of the Cluster of Excellence in January of this year, more than 130 experts from universities, research institutions and industry met at the SE²A kick-off symposium at the TU Braunschweig. Presentations and discussions focused on topics such as climate-optimised flight routes, synthetic fuels and technologies for electric flying. [more](#)



October 24, 2019

Start of the SE²A-school-university network “changING”

On October 24th, 2019 more than 30 pupils on high school level (10th -13th grade) participated in the opening of the ChangING research club at Haus der Wissenschaft. [more](#)



November 12, 2019

SE²A-PhD-Candidate Welcome Event

On November 12th, 2019 the doctoral researchers of SE²A Cluster of Excellence were officially welcomed by SE²A Spokesperson Prof. Jens Friedrichs and Board Member Prof. Laura De Lorenzis. [more](#)



// DATES & EVENTS

January, 17, Joint Korean-German lithium battery workshop

January, 20, Task Force "Data management" meeting#2

January, 22-24, Congress Batterieforum Deutschland, Berlin [more](#)

February, 21-22, E²Flight - Emission Free & Electric Flight Conference, Stuttgart [more](#)

March, 26, Future day for girls and boys, Braunschweig [more](#)

March, 31, Opening Symposium of the new test facilities of the TFD, Garbsen (LUH)

// EVENT ANNOUNCEMENT

Cluster of Excellence Symposium | 2020, October 27-28 | Braunschweig

Please make a note! Next year the symposium of the Cluster will take place on October 27th and 28th, the major international Se²A-conference is planned for 2021.



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