DRIVE-E Academy 2010–2017
Shaping the future of electromobility
People, facts, background information
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Foreword

Germany now has the opportunity to become the market leader in the electromobility sector. Research and innovation are the key to crucial advances in automotive engineering and production technology. To this end, we require highly qualified young researchers: DRIVE-E inspires them to take an interest and discover their enthusiasm for electromobility. DRIVE-E brings together creative, forward-thinking young men and women with a capacity for critical thinking and developing cross references in related disciplines. It is not just in engineering faculties that DRIVE-E complements the degree course by offering relevant practical experience.

Prof. Dr. Johanna Wanka
Federal Minister of Education and Research
Why DRIVE-E?

Young scientists, both male and female, who are superbly trained, with boundless enthusiasm and creative ideas are vital in enabling Germany to retain its leading role at the forefront of the automotive industry. Electromobility in particular offers aspiring engineers enormous potential for development because electric drive concepts are key elements of a future-oriented mobility.

Key motivating factors for the trainee programme

Electromobility can play a major role in protecting the climate and saving resources by helping to significantly reduce both pollutant and noise emissions in congested urban centres. Ultimately, this sustainable method of individual mobility opens up a fascinating and completely new driving dimension. The Federal Ministry of Education and Research (BMBF) is therefore funding research and development projects relating to electromobility.

Working in partnership with industry, the Fraunhofer-Gesellschaft is carrying out extensive research and development projects and is active in all fields of electromobility – even beyond the scope of DRIVE-E.
Brief summary
The DRIVE-E programme was launched in 2009 as a joint venture by the BMBF and the Fraunhofer-Gesellschaft. The initiative aims to get interested young researchers enthusiastic about electromobility and offer them the opportunity to network and exchange ideas with their peers. To date, a total of 436 students have benefited from DRIVE-E.

DRIVE-E: electromobility to the power of two

**DRIVE-E Academy: discovering and experiencing electromobility**

Students in at least their third bachelor semester at any German university are eligible to apply for a place at the annual DRIVE-E Academy. The participants are selected by a panel of experts and subsequently invited to the week-long event to gain exclusive insight into the future technology of electromobility: experts from industry and research present the latest developments and research findings on the topic. During excursions, the young scientists can increase their practical knowledge and try out electric vehicles for themselves. Moreover, intensive discussions with representatives from industry and science, as well as former DRIVE-E candidates, mean that the event week is an ideal, nationwide networking and communication platform.

**DRIVE-E Study Prizes for excellent theses**

The DRIVE-E Study Prizes are awarded to outstanding, innovative student papers on electromobility-related topics. Graduates and students at any German university may apply by submitting their thesis from any relevant technical discipline, the natural sciences or economics, such as mechanical or electrical engineering, or mechatronics. A panel of experts reviews the entries and selects the winners. The prizes are awarded in two categories – seminar papers, projects or bachelor theses and thesis, final papers or master’s theses – and include prize money of up to €6,000.
Fact sheet
The DRIVE-E programme: qualified young researchers for electromobility

Organised by
The BMBF and Fraunhofer-Gesellschaft with a different partner university each year since 2012

Venue and partner universities
2010: Erlangen, Fraunhofer Institute for Integrated Systems and Device Technology IISB
2011: Berlin, Fraunhofer Forum
2012: Aachen, RWTH Aachen University
2013: Dresden, TU Dresden/Faculty of Automotive Mechatronics at the IAD
2014: Stuttgart, University of Stuttgart/Research Institute of Automotive Engineering and Vehicle Engines Stuttgart (FKFS)
2015: Erlangen, IISB und Friedrich-Alexander-Universität Erlangen-Nürnberg
2016: Braunschweig, TU Braunschweig and the Automotive Research Centre Niedersachsen (NFF)
2017: Stuttgart, University of Stuttgart/FKFS

Start
Initiated in 2009, the first event took place in 2010

Modules
DRIVE-E Academy
DRIVE-E Study Prize

Information and application
Online at www.drive-e.org

DRIVE-E Academy 2017: exclusive insight into theory and practice

Date and venue
From 8 to 13 October 2017 at the University of Stuttgart, including participation in EVS30, the Electric Vehicle Symposium & Exhibition

General information
One-week spring school on the entire range of electromobility topics
Participation is free of charge (except for travel expenses)
Career fast-track: get connected with companies and university representatives

Target group
Students at any German university are eligible to take part from the third bachelor semester
Preference will be given to the following disciplines: technology, natural sciences and economics

Participants
50, to be selected from all applicants by a panel of experts

Contents
Presentations by renowned experts from industry and research
Company excursions
Hands-on workshops and test drives
Discussion rounds
Networking with like-minded fellow students and experts from all over Germany

DRIVE-E Study Prize 2017: awards for young scientists

Date and venue
Award ceremony and official function on 12 October 2017 in the Porsche Museum during the DRIVE-E Academy

General information
Distinction for outstanding student papers on an electromobility-related topic
Prizes are awarded in two categories:
I: Seminar papers, projects or bachelor theses
II: Thesis, final papers or master’s theses

Prizes:
I: 1st prize: €4,000, 2nd prize: €2,000
II: 1st prize: €6,000, 2nd prize: €3,000

Target group
For graduates and students at any university in Germany
Preference will be given to the following disciplines: technology, natural sciences and economics
A panel of experts will select the winners from the pool of candidates
Alumni portraits
Lisa Braun is shaping tomorrow’s mobility:

“Electrification provides an opportunity to completely rethink the concept of mobility.”

Winner of the 2014 DRIVE-E Study Prize and participant at the 2013 DRIVE-E Academy

“I am fascinated by the potential of electromobility,” says Lisa Braun. “DRIVE-E offers hands-on experience in this type of mobility and serves as a platform for an exchange of ideas with interesting people, both other students and experts from industry and research. It is this combination that makes the Academy so exciting.”

“We want to stay mobile up to a ripe old age, choosing our own individual means of transport, yet at the same time live in a great city without smog, noise or traffic jams. This can only be achieved by developing new vehicle concepts that take full advantage of an electric drive train, for example.”

DRIVE-E alumna and expert in vehicle electrical system optimisation

Born in 1987, Lisa Braun received her doctorate in the electrical energy network architecture of the future at Siemens CT, in cooperation with the Karlsruhe Institute of Technology, and is currently working in energy management at EvoBus GmbH.

In 2014, she was awarded first place in category II, “Thesis, final papers or master’s theses”, of the DRIVE-E Study Prize for her master’s thesis on “Driver- and driving situation-dependent assessment of various electric motor concepts”.
Daniel Quinger is shaping tomorrow’s mobility:

“Electromobility offers the opportunity of realising innovative ideas and business models.”

Winner of the 2010 DRIVE-E Study Prize

“DRIVE-E gives young people an outstanding platform to present their work and become networked in this highly dynamic sector. These opportunities have helped us raise public awareness of our achievements and establish contacts with customers and partners.”

“Electromobility fascinates me because it is about so much more than the electrification of the automobile. There can be no doubt that electrification will revolutionise entire areas of business and industry sectors. Batteries are the key technology for the impending structural transformation. Therefore, I am delighted that our company is able to be part of this development.”

**DRIVE-E alumnus and battery system expert**

Born in 1980, Daniel Quinger is a co-founder of LION E-Mobility AG, a strategic investor in the electromobility sector specialising in companies in the field of electrical energy storage devices and lithium-ion battery systems technology. As president of the administrative board, Mr. Quinger is responsible for the strategic orientation and representation of the company.

In 2010, he was awarded the first study prize for his thesis on “Battery management systems and algorithms to detect the status of lithium-ion batteries” at the TU Munich.
Simon Walcher is shaping tomorrow’s mobility:

“Becoming part of the DRIVE-E network is invaluable.”

Participant at the 2014 DRIVE-E Academy

“Electromobility is a huge challenge with a whole range of fascinating sub-sectors,” says Simon Walcher. “DRIVE-E influenced my way of thinking and opened up new career prospects.”

“Electromobility is highly complex and fascinating. Therefore, it is fantastic to be able to gain insight into all sub-sectors in intensive discussions with other participants, the speakers, various enterprises and the scientific community. It is absolutely first-rate!”

DRIVE-E alumnus and quality management expert Simon Walcher, who was born in 1986, established direct contact with Daimler AG during the 2014 Drive-E Academy. After completing the “CAReer – The Top Talent Program” at various locations in Germany and abroad, he is now a quality engineer in the field of alternative drive trains.

He wrote his master’s thesis on “Vehicle concept for sub-Saharan Africa – the construction and virtual validation of a battery-electric vehicle for use in rural areas” at the Technische Universität München.
FAQ – Frequently Asked Questions

1. Who is eligible to apply for DRIVE-E?
   The DRIVE-E Academy is aimed at students at any German university in any relevant technical discipline, the natural sciences or economics, like electrical or mechanical engineering, mechatronics, industrial engineering & management etc.

   Students from non-technical faculties should have a specific connection to electromobility, either in their degree courses or extra-curricular experience, and be able to demonstrate the relevant technical expertise. Students in their third bachelor semester who have attained at least 50 credit points are eligible to apply.

   Students and graduates of any German university may apply for the DRIVE-E Study Prizes by presenting their study paper, project or final thesis on any electromobility-related topic for consideration. However, the paper must have been submitted within the previous twelve to eighteen months.

2. How can I apply?
   An online application form for both the DRIVE-E Academy and the DRIVE-E Study Prize is available at www.drive-e.org. You will be asked to enter information on your person and degree course and upload specific documents, depending on the module.

   Applications for the Academy must include a certificate of matriculation, proof that the requirements have been met (a current transcript of records or bachelor’s certificate) and a photograph of the applicant.

   Applications for one of the DRIVE-E Study Prizes must include a concise summary of the paper (a maximum of five pages or 15,000 characters), proof of authorship and a photograph of the applicant. The authorship must be certified by the supervisor of the thesis (including the date, signature and stamp of the chair).

3. May I take part in the DRIVE-E Academy if I am also applying for the DRIVE-E Study Prize?
   Candidates are welcome to apply for both the DRIVE-E Study Prize and the DRIVE-E Academy, either in the same year or in consecutive years. The applications for the Academy and the study prize are completely independent of each other. All study prize winners are automatically invited to take part in the Academy.
4. How much does it cost to participate in the DRIVE-E Academy?
Participation in the DRIVE-E Academy is free of charge. Moreover, the organiser bears all costs for accommodation and meals. Participants only have to pay their travelling expenses (to and from the Academy).

5. How are the participating students and study prize winners selected?
A panel of experts from the participating institutions evaluates the submitted applications and selects 50 students to take part in the Academy. An initial shortlist will be drawn up for the study prize, based on the summaries submitted. The selected candidates must then submit their complete theses, on the basis of which the four winning papers (two in each category) are selected. Participation in these competitions does not constitute a legal claim to sponsorship.

6. What are the selection criteria for participants?
In their applications, students should be able to demonstrate their previous commitment to the topic of electromobility. Examples of applicable commitment include active involvement in a Formula Student Electric team, relevant internships, private electromobility construction projects, participation in appropriate courses and corresponding student projects.

7. What evaluation criteria apply to papers submitted for the study prize?
The jury considers the degree of innovation, the scientific quality, the relevance of the topic for electromobility and the informative value of the paper. Moreover, the methodology, plausibility, readability, clear structure and the formal representation of the paper are all taken into account.

8. Is it sufficient if I submit the introduction to my thesis when applying for the study prize?
It is essential that the summary of the paper be informative, including the main arguments pronounced and the findings. Therefore, as a general rule, the introduction will not suffice.

9. May I still apply for DRIVE-E if I have already taken part and/or previously been awarded the study prize?
In principle, candidates are welcome to re-apply for both modules. However, priority will be given to first-time applicants at the Academy. Students who have previously participated are expected to take an active part or play a special role (e.g. alumni presentation). It is not permitted to submit the same paper twice for the study prize; applicants must present a different thesis.

10. Can I receive study credits for the DRIVE-E Academy?
This is not possible. Participation in the Academy is independent of a degree course and does not constitute a programme achievement. Nevertheless, all participants receive a certificate of participation, which may be included in their curriculum vitae. Furthermore, the Academy offers candidates the opportunity to establish valuable contacts with regard to internships or their future careers.

These and other questions and answers regarding DRIVE-E can be found online at: www.drive-e.org/faq
DRIVE-E impressions

Excursions

DRIVE-E 2013: test drive with an e-motorcycle

DRIVE-E 2014: Excursion to Porsche

DRIVE-E 2015: with Johannes Blickensdorf at Schaeffler's Competence Center Acoustics

Speakers

DRIVE-E is a platform for discussions

DRIVE-E 2014: Maria Ott, alumna and speaker

DRIVE-E 2014: Dr. Stefan Riederer (BMW), speaker

DRIVE-E 2015: technical discussions with Sabine Schlutius (ABL-Sursum) at the venue

DRIVE-E 2016: Prof. Dr. Markus Henke from the Institute for Electrical Machines, Traction and Drives, TU Braunschweig
Participants

DRIVE-E 2013: exchanging ideas with peers

DRIVE-E 2014: official speech of Dr. Dieter Zetsche

DRIVE-E provides invaluable insight

DRIVE-E 2012: Dr. Georg Schütte, State Secretary at the Federal Ministry of Education and Research, pays tribute to the award winners

DRIVE-E 2014: CV check

DRIVE-E 2015: The award ceremony with Stefan Müller (on the right), Parliamentary State Secretary for the Federal Minister of Education and Research, and Alexander Verl from the Fraunhofer-Gesellschaft

DRIVE-E 2016: the participants are what set the Academy apart

On request, these photographs are available in a printable resolution. Please see the following page for contact details.
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