Press Release

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AIT and TU Graz launch joint doctoral programme in the field of hydrogen technology

- New PhD programme for the development of innovative hydrogen technologies with a focus on reversible high-temperature electrolysis will start in February 2023
- AIT and Graz University of Technology (TU Graz) are thus further strengthening their cooperation in the systemic application and technological development of hydrogen

The AIT Austrian Institute of Technology and TU Graz will start a joint doctoral programme (PhD programme) on the topic of hydrogen technologies in the summer semester of 2023. With this new doctoral training, the two institutions aim to accelerate the development of innovative and efficient technologies for the production of green hydrogen.

Doctoral Programme: Applications possible from 19 October 2022

The joint PhD programme focuses on the topic of reversible high-temperature electrolysis (HTE). The research results from the total of four PhD positions to be filled should significantly improve this still relatively and promising technology field.

In high-temperature electrolysis, water vapour is split into the components hydrogen and oxygen at temperatures between 750 and 850 degrees Celsius. If electricity from renewable sources is used for this purpose, green hydrogen with an efficiency of up to 80 percent is produced. The HTE is still under development and requires further research, especially in the area of the materials used and the efficient integration into different industrial processes. These central research questions are addressed in the PhD programme. AIT, TU Graz and its associate HyCentA Research GmbH have already been cooperating on this in national research projects since 2020. The first joint PhD programme will now start on 1 February 2023 with four PhD positions – two at AIT in Vienna and two at TU Graz – and will have a duration of three years. The application phase opened on 19 October 2022.

Wolfgang Hribernik, Head of Center for Energy, AIT

“The use of hydrogen is a central element for a sustainable and low-emission energy system. With this PhD programme, we offer a unique setting to advance hydrogen technology research at the highest level in Austria. At the AIT Center for Energy, we focus on the development of hydrogen technologies and new materials coupled with the requirements of a future energy system and decarbonisation in an industrial context. These are central fields of action for strengthening the industrial location and innovation lead in Austria.”

Alexander Trattner, TU Graz – Institute of Thermodynamics and Sustainable Propulsion Systems

"The production of hydrogen by splitting water in electrolysis offers enormous potential for integrating renewable power sources into the future energy system. High-temperature electrolysis in particular has the highest efficiencies and is especially well suited for use in the energy-intensive industrial and energy sector. In the course of this PhD programme, we will carry out research on the materials for high-temperature electrolysis, the system design and the integration of HTE into industrial processes in order to achieve holistic improvements. This research work at the highest level is extremely relevant to industry and makes its contribution to strengthening Austria as a location for technology and knowledge."

AIT Center for Energy

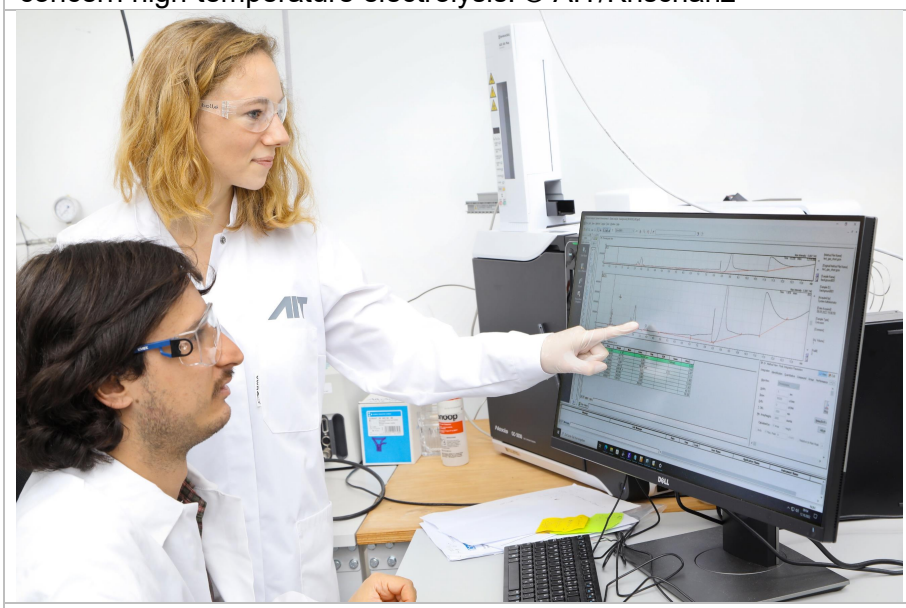
At the AIT Center for Energy, around 250 employees are working on solutions for tomorrow's sustainable energy supply under the leadership of Wolfgang Hribernik. The many years of experience and scientific excellence of AIT experts, as well as high-quality laboratory infrastructure and global networking, offer companies innovative and applied research services and thus a clear competitive advantage in this market of the future. The Center for Energy's topic portfolio is oriented towards three central systems: sustainable public energy supply systems, decarbonisation of industrial processes and plants, and innovative technologies and solutions for urban resilience (buildings, cities). In hydrogen research, the AIT Center for Energy focuses on two core areas: firstly, the integration of hydrogen technologies and synthetic gases into the energy infrastructure for efficient sector coupling, taking energy-economy aspects into account; and secondly, the material and energetic use of hydrogen in industrial processes to decarbonise industry.
More information about the center can be found at: https://www.ait.ac.at/en/about-the-ait/center/center-for-energy
Announcement of PhD positions: https://jobs.ait.ac.at/Jobs?jobProfiles=PhD

Center of Hydrogen Research at TU Graz

Graz University of Technology (TU Graz) is the oldest science and technology research and educational institute in Austria. It has achieved international excellence in its five Fields of Expertise, and relies on intensive cooperation with other research and educational institutions as well as with business and industry worldwide. For more than 50 years, research has been successfully conducted in the fields of electrochemistry and hydrogen at the TU Graz campus. The Center of Hydrogen Research brings together the expertise of more than 160 scientists who conduct hydrogen research in numerous fields of specialisation at the institutes and research centres of TU Graz. Today, the TU Graz campus with its unique laboratory and research infrastructure is not only by far Austria's largest centre for hydrogen research, but also one of the five largest hydrogen research players in Europe. One of the 23 associated companies of TU Graz and also part of the Center of Hydrogen Research is HyCentA, Austria's first and one of the largest non-university research institutions in the field of hydrogen. Industrial research in the areas of fuel cell systems, electrolysis and hydrogen infrastructures is being intensified there.
Announcement of PhD positions: https://www.tugraz.at/sites/mibla/mitteilungsblaetter/studienjahr-20222023/2-stueck-19-oktober-2022#c484917

Press photos:

The central research questions of the joint PhD programme in the field of hydrogen technology concern high-temperature electrolysis. © AIT/Krischanz



The first joint PhD programme will start on 1 February 2023 with four PhD positions – two at AIT in Vienna and two at TU Graz. © AIT/Krischanz

The use of hydrogen is a central element for a sustainable and low-emission energy system. © Getty Images

Press spokesperson AIT:
Mag. Margit Özelt
Marketing and Communications
Center for Energy
AIT Austrian Institute of Technology
Phone: +43 (0)50550-6302
E: margit.oezelt@ait.ac.at I www.ait.ac.at

Mag. Michael H. Hlava
Head of Corporate and Marketing Communications
AIT Austrian Institute of Technology
Phone: +43 (0)50550-4014
michael.hlava@ait.ac.at I www.ait.ac.at

Press contact TU Graz
Mag. Barbara Gigler
Head of Communications and Marketing
Phone: +43 316 873 6006
barbara.gigler@tugraz.at