TU Graz

Institute of Chemical Engineering and
Environmental Technology

CEET

Lunghammer – TU Graz

15. International Summer School

on Advanced Studies of Polymer Electrolyte Fuel Cells and Hydrogen

TU Graz, Austria, 28 August - 2 September 2023

YNU
YOKOHAMA National University

TUAUSTRIA
Austrian Universities of Technology

General Information

The International Summer School is organized by the Fuel Cell and Hydrogen Group of Graz University of Technology (TU Graz), Austria in co-operation with Yokohama National University (YNU), Japan and with internationally recognised experts in the field of fuel cell research. The lectures include fundamental studies and advanced aspects of PEFCs.

GENERAL

- Intensive course on fuel cell and hydrogen R&D
- Certificate of Attendance (without exam)
- Student Poster Session and Student Workshop
- 3 ECTS credits at TU Graz or Yokohama National University credits with written exam

TOPIC LECTURES

- PEFC Fundamentals
- Hydrogen as Fuel - Fundamentals
- Electrochemistry
- Measurement Techniques
- Advanced Material Studies
- Up-to-date R&D topics
- PEFC Applications

REGISTRATION

Participation fee: Euro 300,00
No fee for students in natural sciences or technology with confirmation of enrolment.

Deadline for registration: 15 July 2023 (limited number of participants!)

Updates about the programme can be found at www.tugraz.at/fcsummerschool

Contact Persons

ORGANISERS

Prof. Viktor Hacker*
Prof. Merit Bodner*
Prof. Bernhard Gollas

Graz University of Technology
*Institute of Chemical Engineering and Environmental Technology

Inffeldg. 25C, 8010 Graz, Austria
E-mail: viktor.hacker@tugraz.at

Prof. Shigenori Mitsushima
Prof. Yoshiyuki Kuroda
Prof. Ken-Ichiro Ota

Yokohama National University
Department of Energy and Safety Engineering

79-5 Tokiwadai, Hodogaya-ku,
Yokohama 240-8501, Japan
E-mail: mitsushi@ynu.ac.jp

Prof. Takuto Araki

Yokohama National University
Department of Mechanical Engineering

79-5 Tokiwadai, Hodogaya-ku
Yokohama 240-8501, Japan
E-mail taraki@ynu.ac.jp

ADMINISTRATION

Brigitte Hammer, Bakk.

Graz University of Technology,
Institute of Chemical Engineering and Environmental Technology

Inffeldg. 25C, 8010 Graz, Austria
E-mail: brigitte.hammer@tugraz.at

15. International Summer School on Advanced Studies of Polymer Electrolyte Fuel Cells

In order to achieve the climate targets by 2040, the energy supply is to be steered in a new direction. Hydrogen will play an important role in this and the areas of fuel cell and hydrogen research will, now and in the coming years, become the focus of political strategies and industrial activities.

This summer school offers an insight into important areas of these technologies and aims to help generate interest and understanding. We welcome students and early career researchers for intensive days of lectures, workshops, networking and socialising. The event covers a broad spectrum of fuel cell and hydrogen research by internationally renowned experts in the field of polymer electrolyte fuel cells and additional lectures on various hydrogen technologies. The individually structured lectures and exercises give participants the opportunity to deal with these topics more intensively and to gain a better understanding through additional interactive exercises.

This interdisciplinary training programme for young scientists started as a cooperation project between Graz University of Technology (TU Graz) and Yokohama National University (YNU) in 2008. The training programme grew rapidly, both in the number of participants and in the number of international experts in the field of fuel cell research involved.

In 1839, Schönbein and Grove described the functional principle of a fuel cell. Since then, a series of fuel cell hypes have repeatedly claimed that fuel cells will soon replace conventional power generation technologies. So why aren‘t we using fuel cells in our daily lives today? „Economic lifetime“ might be the shortest answer. However, the last decade has shown that the major industrial players have continued their long-term investments into this technology even in times of economic stagnation. In addition, research institutions and universities cover all aspects from basic research to system development to an extent never seen before in history. This will form the basis for finally bringing this interesting, highly efficient and clean technology to market.

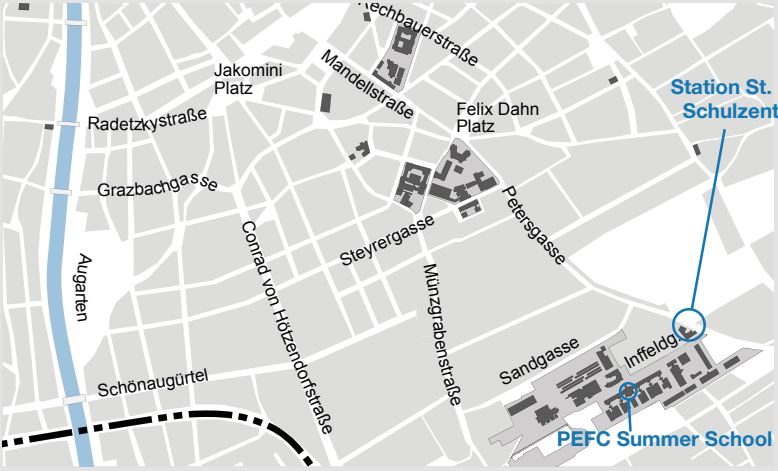
Possible applications include portable devices such as laptops, tablets and smartphones, mobile applications such as hybrid vehicles and stationary power plants from the kilowatt to the megawatt class. The most important and advantageous properties of fuel cells are the high efficiencies in energy conversion, the low emissions and, hopefully with further development, the long service life.

Mobile applications are becoming particularly important in fuel cell research and development; however, mobile applications are usually tied to a controversial issue: Hydrogen as fuel. In this training programme, a discourse on hydrogen production, transport and storage technologies will form the basis for an intensive discussion on the advantages and disadvantages of this future fuel. The focus will be on renewable hydrogen, i.e. hydrogen produced from regenerative energy sources.

Prof. V. Hacker and Prof. S. Mitsushima

Location

TU Graz, Inffeldgasse 25/D, 8010 Graz, Austria
Room: HS i7, 1st floor



PUBLIC TRANSPORTATION

Graz main station
Take tramway no 6 in the direction St. Peter. Exit St. Peter Schulzentrum.

Graz Airport
By bus: the bus stop is right outside the passenger terminal, right next to the arrival area. Public busses no 630 and no 631 from Graz Airport to Jakominiplatz (central transport point).
From Jakominiplatz take tramway no 6 in the direction St. Peter, exit station St. Peter Schulzentrum.
By train: the station “Graz / Feldkirchen” is approx. 300 meters away from the airport. Train no. S5 to Graz main station. From Graz main station take tramway no 6 in the direction St. Peter, exit station St. Peter Schulzentrum.
By taxi from Graz airport to the city takes about 15 min and costs 30 € approximately.

ACCOMMODATION OPTIONS

Travel- and accommodation costs need to be covered by the students individually. Please find a general list of hotels at Graz Tourismus: https://www.graztourismus.at/en

HOTELS CLOSE TO THE CAMPUS

Hotel Ibis Styles Graz Messe
Waltendorfer Gürtel 8, 8010 Graz
Mail: hb9u3@accor.com
Website

YOUTH HOSTELS IN GRAZ

Housing Graz (OEAD Guesthouse)
Website

a&o Hostel Graz
Website

JUFA Hotel Graz City
Website