Program

Tuesday, 6 December 2022

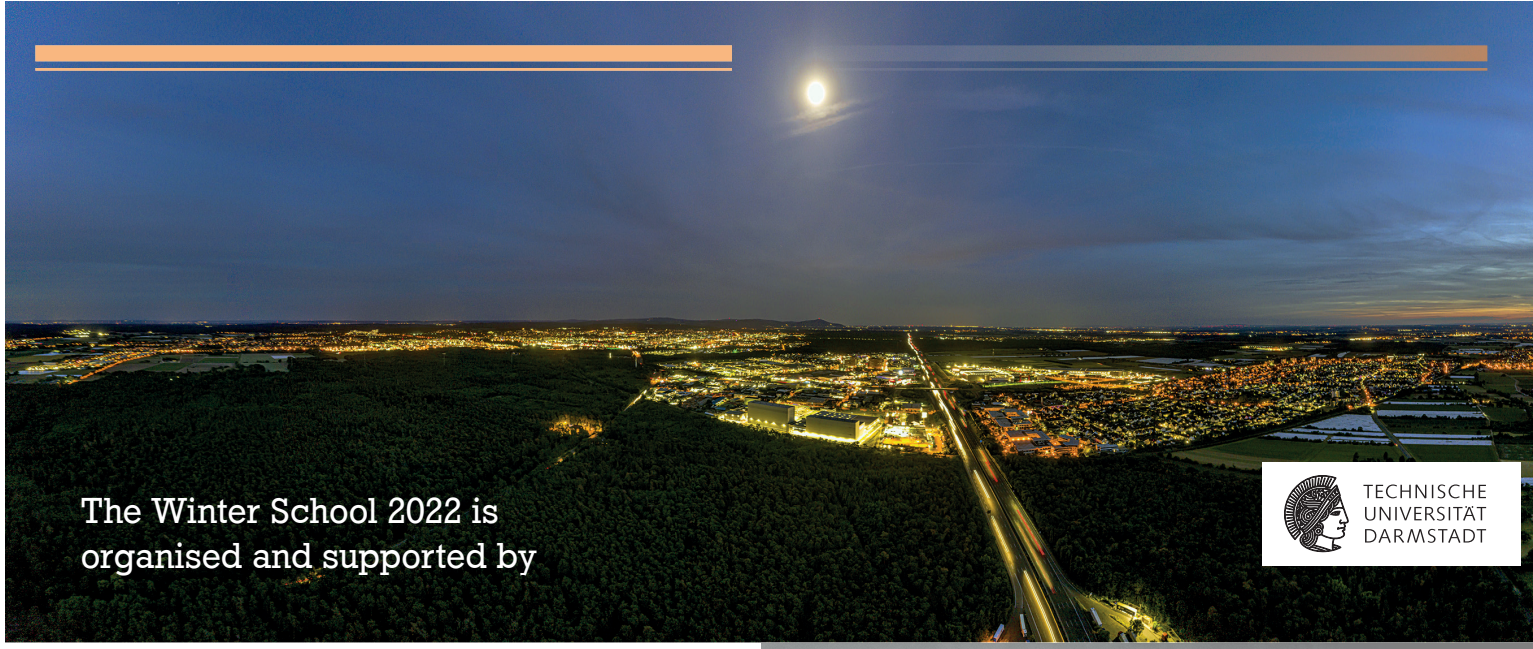
09:00–09:15	Introduction and Welcome ***Christian Hasse (TU Darmstadt)***
09:15–10:45	Hydrogen production in a renewable energy context ***Jan Philipp Hofmann (TU Darmstadt)***
10:45–11:15	Coffee break
11:15–12:45	Photoelectrochemical routes to solar fuels ***Roel van de Krol (Helmholtz Zentrum Berlin)***
12:45–14:00	Lunch
14:00–15:30	Low temperature fuel cells – from fundamentals to applications ***Viktor Hacker (TU Graz, CEET)***
15:30–16:00	Coffee Break
16:00–17:30	Combustion of metal fuels: From fundamental research to practical application (online only) ***Jeroen van Oijen (TU Eindhoven)***
17:30–21:00	Poster sessions and walking dinner Dinner will be served 18:30 in the foyer of the lecture hall

Wednesday, 07 December 2022

08:30–10:00	Chemical concepts towards sustainable catalysts within the Collaborative Research Center 1487 Iron, upgraded! ***Ulrike Kramm, Vera Krewald (TU Darmstadt)***
10:00–10:30	Coffee break
10:30–12:00	Fe-N-C catalysts: Sustainable catalysts for fuel cell applications ***Stefania Specchia (Politecnico di Torino)***
12:00–14:00	Lunch
14:00–15:30	Catalyst development for alkaline fuel cells ***Tanja Kallio (Aalto University)***
15:30–16:00	Coffee Break
16:00–17:30	Hydrogen policy in multi-level governance ***Michèle Knodt (TU Darmstadt)***
18:00	Dinner

Thursday, 08 December 2022

08:30–10:30	Lab Tour (Campus Lichtwiese)
10:45–11:00	Coffee break
11:00–12:30	Global opportunities and challenges for iron as a recyclable energy carrier ***Christian Hasse, Andreas Dreizler (TU Darmstadt)***
12:30–14:00	Lunch
14:00–15:30	System challenges for defossilizing the industrial sector (online only) ***Andrea Ramírez (TU Delft)***
15:30–15:45	Closing remarks



The Winter School 2022 is organised and supported by

TECHNISCHE UNIVERSITÄT DARMSTADT

Graduate School of Energy Science and Engineering

Clean Circles

26 Fe Iron 55.845 — Iron, upgraded! CRC 1487

Funded by DFG PAK981 Deutsche Forschungsgemeinschaft German Research Foundation

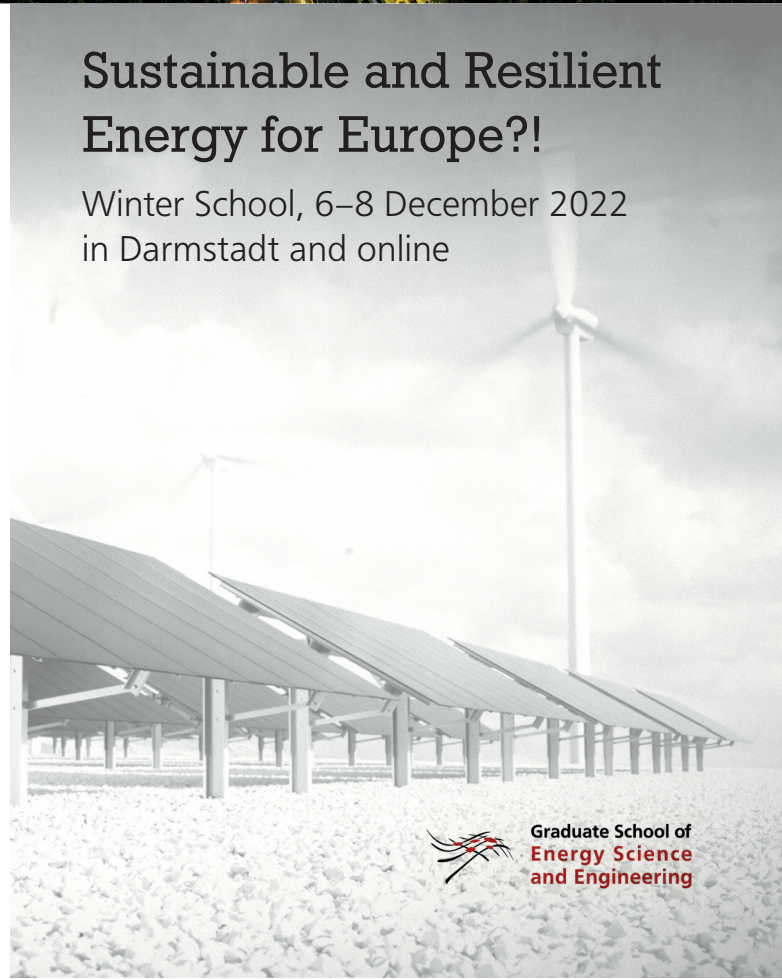
unite! University Network for Innovation, Technology and Engineering

DAAD Deutscher Akademischer Austauschdienst German Academic Exchange Service

Further information and registration:
https://www.energy.tu-darmstadt.de/ws

Sustainable and Resilient Energy for Europe?!

Winter School, 6–8 December 2022
in Darmstadt and online



Graduate School of Energy Science and Engineering

Sustainable and Resilient Energy for Europe?!

The Graduate School Energy Science and Engineering is glad to invite you to join the international winter school from 6–8 December 2022 in Darmstadt. The event will explore scientific and technical aspects of the production and use of carbon-free and sustainable energy storage systems such as hydrogen and iron, as well as the socio-economic aspects such as multi-level governance of hydrogen strategies. Participants will thus gain a unique insight into current challenges and solution approaches in an energy landscape that is changing daily.

Scope

The transformation of energy systems is one of the most pressing challenges of our time. While climate neutrality and the reduction of fossil CO_2 emissions were in the foreground in the past years, security of supply has become a high priority since the Russian war against Ukraine. However, a sustainable and resilient energy supply also means moving away from fossil fuels. To increasingly replace them with wind and solar, chemical energy carriers such as hydrogen are key for storing, transporting and using renewable energy. As another complementary option to hydrogen, metals such as iron have come more into the focus of science and industry as carbon-free energy storage. Whatever the technical solution, it must not be evaluated separately, but always in combination with the socio-economic aspects.

Who should attend

The Winter School „Sustainable and Resilient Energy for Europe?!“ is directed towards doctoral candidates and postdocs performing research on energy systems, energy policy or the energy enconomy, as well as practicing engineers and researchers involved in R&D of energy systems.

Registration and venue

The Winter School Energy Science and Engineering 2022 will take place in Darmstadt from 6–8 December 2022. Participation is possible both in attendance and online.
Please register online at:

https://www.energy.tu-darmstadt.de/ws

Lecture hall:
Technical University of Darmstadt
Campus Stadtmitte (city centre)
Hochschulstraße 1, building S1|03 Room 283
64289 Darmstadt, Germany

Speakers and talks

Jan Philipp Hofmann,
TU Darmstadt, Surface Science
Hydrogen production in a renewable energy context

Roel van de Krol
Helmholtz Zentrum Berlin, Solar Fuels
Photoelectrochemical routes to solar fuels

Viktor Hacker
TU Graz, CEET
Low temperature fuel cells – from fundamentals to applications

Jeroen van Oijen
TU Eindhoven, EIRES
Combustion of metal fuels: From fundamental research to practical application (online only)

Ulrike Kramm & Vera Krewald
TU Darmstadt, Chemistry
Chemical concepts towards sustainable catalysts within the Collaborative Research Center 1487 Iron, upgraded!

Stefania Specchia,
Politecnico di Torino, DiSAT
Fe-N-C catalysts: Sustainable catalysts for fuel cell applications

Tanja Kallio
Aalto University
Catalyst development for alkaline fuel cells

Michèle Knodt
TU Darmstadt, Political Science
Hydrogen policy in multi-level governance

Andreas Dreizler & Christian Hasse
TU Darmstadt, Mechanical Engineering
Global opportunities and challenges for iron as a recyclable energy carrier

Andrea Ramírez Ramírez
TU Delft, Engineering Systems and Services
System challenges for defossilizing the industrial sector (online only)