

International Summer School for PhD Students on
METHODS AND TECHNOLOGIES FOR ENERGY
TRANSITION AND CLIMATE PROTECTION

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PROTECTION

5 - 9 July 2021, Gliwice, Poland



Silesian University of Technology



www.etcpsl.pl

Foreword

Today's energy system is the result of choices made within XIX and XX centuries by energy companies, consumers, and governments. Nowadays, massive use of energy and anthropogenic emissions causing climate change are major challenges humanity must deal with. Society must find ways to meet increasing energy demand in sustainable, resource efficient and environmentally neutral manner. The energy transition requires a long-term structural change in our approach to energy technologies and energy systems, creating a more integrated and smarter solutions that would be able to address dynamic patterns of supply and demand.

Energy transition and climate protection are terms, which nowadays define new paradigm for design of energy systems and evolution of energy technologies. The future prosperity and liveability of human kind depend on creating a smarter, based on renewables, more integrated energy system at different levels. A system that is efficient, secure, resilient, affordable, clean and sustainable. In this context, new concepts, design patterns, theories, research methods, technologies and standards are being developed worldwide. The main challenges have been recognised as:

- to move into lower-carbon energy technology solutions;
- to diversify energy sources and create optimal energy mix;
- to increase system resilience and flexibility through introduction of storage options;
- to implement Circular Economy solutions through technologies for energy and materials recovery;
- to increase the degree of energy system decentralisation;
- to provide cost effective and affordable solutions.

Silesian University of Technology
Faculty of Energy and Environmental Engineering
ETCP School Office

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2021

The aim of the international summer school for PhD students is to deepen and update knowledge on recent developments in science and technology, which pave the way towards a low-carbon future. The school will enable effective transfer of knowledge and development of skills. The scope of the school will cover recent developments in the areas of technologies and methodologies. Participants will get familiar with contemporary trends in the development of methods and technologies for energy transition and climate protection. Special focus will be given to on-going European research development projects.

The summer school will bring together young researchers and experienced scientists and practitioners, who are involved in development of energy technologies and systems. The classes will be conducted by lecturers from renowned foreign universities and from the Silesian University of Technology.

The International Summer School at SUT is a fantastic opportunity to study in heart of Europe, experience the vibrant life of Silesia Region, discover Polish culture and history, as well as enhance your knowledge and academic skills.

You will have a great chance to deepen your knowledge on methods and technologies for energy transition and climate protection through participation in workshops, seminars and lectures. An integral part of the program are social & cultural events, which are a great chance for networking.

2021 ETCP School topics

- Advances in energy storage
- Exergy based effectiveness assessment methods
- sCO₂ cycles – recent developments and applications
- State of the art in carbon capture, storage and use
- Refrigeration with natural working fluids
- ORC for waste heat recovery and Carnot battery energy storage concept
- Progress in biofuels
- Next Generation Biomass CHP

Total teaching load: 40 hours

2021 ETCP School lecturers and instructors

- Professor Ricardo Chacartegui Ramirez – University of Seville (E)
- Professor Marco Astolfi - Politecnico Milano (IT)
- Professor Vincent Lemort – University of Liege (BE)
- Professor Saquib Sohail Toor – Aalborg University (DK)
- Professor Sotirios Karellas – Technical University of Athens (GR)
- Professor Anna Skorek-Osikowska – Silesian University of Technology (PL)
- Professor Jacek Smółka – Silesian University of Technology (PL)
- Professor Wojciech Stanek – Silesian University of Technology (PL)

Venue

The School will take place at the premises of the Faculty of Energy and Environmental Engineering of the Silesian University of Technology.

NOTE: In the case of severe restrictions on mobility due to pandemic situation related to COVID-19, the Summer School is planned to take place fully on-line or in hybrid mode. The basic option is however, the on-site event.

Silesian University of Technology (SUT) is one of the most prestigious and top-ranked technical universities in Poland. Located in the Upper Silesia region, it is a modern higher education institution with 75 years of tradition in didactics and scientific research.

Department of Thermal Technology is located near the centre of Gliwice, approx. 1.5 km from the Central Railway Station (15 min. walk, 7 min. by car), a taxi rank and PKS Bus Station.

Address: [Konarskiego 22, 44-100 Gliwice, Poland.](#)



Gliwice is a medium-size city of nearly 200 thousand inhabitants. The city is an important scientific, research and design centre in Poland. Thanks to the Silesian University of Technology, it is the second (after Warsaw) agglomeration of technical intelligence. During the last 20 years, Gliwice has transformed from a city based on heavy industry into a leader in new technologies.

Apart from that, Gliwice is also well known for its cultural life. A lot of festivals, concerts, exhibitions and other art activities take place in the town. Numerous famous Polish artists and other interesting people (e. g. Nivea cream inventor) originally came from Gliwice. Results of many surveys show that it is one of the most attractive cities in Poland.

The city has a rich history of nearly 800 years. Throughout that time it has undergone several historic transformations. It was ruled by the Silesian Piast Monarchy, the Kings of Bohemia, the Austro–Hungarian Empire, Prussia and Germany, until the city has again become a part of Poland in 1945.

Gliwice is a unique place, where tradition, multicultural heritage, science and modernity intermingle, creating its one-of-a-kind atmosphere of an attractive place to study and live.

Useful link: <https://gliwice.eu/en>

Nearby airports:

Katowice-Pyrzowice 40 km (www.katowice-airport.com)

Kraków-Balice 100 km (www.lotnisko-balice.pl)

Wrocław 170 km (www.airport.wroclaw.pl)

Ostrava (CZ) 95 km (www.airport-ostrava.cz)

Warszawa 310 km (www.porty-lotnicze.com.pl)

Who can attend

The summer school is organised for students at doctoral level (PhD). The eligibility criteria are:

- confirmed status of PhD student;
- paid school tuition fee;

Only limited number of places are available. The target group consists of max 30 doctoral students.

Prerequisites. The Summer School will be held in English. In order to participate, doctoral students should have sufficient language skills. Participants should also have background in mechanical engineering, energy system engineering or environmental engineering.

In case of the number of candidates is bigger than 30, they will qualified by the principles of equal opportunities and non-discrimination within the meaning of the Guidelines for the implementation of the law of equal opportunities and non-discrimination, including accessibility for people with disabilities and the principle of equal opportunities for women and men as part of EU funds for 2014-2020.

Tuition fee

Tuition fee can be paid in PLN or EUR.

Summer school tuition fee is: 3440 PLN (800.00 EUR)

What is included in the fee:

- participation in all classes and laboratory demonstrations
- coffee breaks and lunches
- two evening dinners/social events
- school materials in printed and electronic form

The tuition fee includes Polish tax according to local regulation.

Scholarships for school participants

APPLY NOW!

Scholarships are available for PhD students from foreign universities.

We cordially invite you to take part in the project "Improving the competences of PhD students and academics in the field of climate and environmental protection". Up to 24 PhD students from foreign universities can receive scholarships, which will cover full costs of participation including tuition fee, travel, accommodation and living costs. The costs will be covered within the project: **PROM - International scholarship exchange of PhD students and academics**. Details can be found at: http://waste.polsl.pl/new_www/en.

PROM Calls for school candidates are foreseen to be announced in May and June 2020

Registration procedure

Registration procedure for Summer School consists of the following steps:

1. Candidate fills in the registration form (available at: www.etcpl.polsl.pl/registration) and sends the signed version to School Office. **Scanned document can be sent by e-mail.**
2. By submitting the application, the candidate accepts the terms & conditions of the Summer School, which are available at www.etcpl.polsl.pl/documents
3. After receiving the application, School Organisers will inform candidate by e-mail within 5 days about the registration of the application.
4. Those candidates, who want to apply for scholarship to PROM project, submit required documents according to instructions given at: http://waste.polsl.pl/new_www/en.
5. After confirmation of funding, candidate and SUT sign agreement on the terms of payment for the training. This document will also contain payment instructions.
6. Candidates, who will receive scholarships order the PROM project office to transfer the tuition fee.
7. Those candidates, who do not apply for scholarship are supposed to pay the tuition fee by themselves. This happens after signing the agreement on the terms of payment for the training.
8. After receiving the tuition fee School Office sends confirmation of registration for the school.

Fee payment is due 18/06/2020.

NOTE. In case of funding candidate's participation from PROM project funds the invoice will be issued to Silesian University of Technology in the form of internal transfer note.

Cancelation

The accepted candidate who paid the fee for participation in the summer school may withdraw his application on a written request:

- a) until 30/06/2021 without any additional costs. Then the full amount of the fee will be refunded to the participant on the account provided by him.
- b) after 30/06/2020 - the payment will not be refunded.

In the case the participant was paid by the PROM project, cancelation rules are defined by the project.

Important dates

Description	Deadline	Additional information
Registration	31 March 2021	Registration is open until this date
Notification on preregistration	Individual	Each candidate will be notified within 5 days after registration form is received by the School Office
Tuition fee payment	18 June 2021	closed
Cancellation	30 June 2021	After this date costs will not be refunded
School classes	5-9 July 2021	On-site, hybrid or on-line event

Contact information

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