



**Fraunhofer**  
ACADEMY

Certificate of Advanced Studies (CAS)

## **CAS PG – PHOTOVOLTAICS AND THE RENEWABLE ENERGY GRID**

**STEP UP YOUR PROFESSIONAL SKILLS  
WITH AN ACCREDITED CERTIFICATE**



Offered by

**UNI  
FREIBURG**



## LEARN FROM GERMANY'S LEADING EXPERTS IN SOLAR ENERGY



Come and join the worldwide growing solar community and become part of our successful and renowned society of solar scientists and engineers. We offer continuing education courses and a Master of Science degree program which will allow you to gain scientific and technical knowledge in solar energy. You will study part-time with our renowned experts in solar energy through e-learning and online courses as well as hands-on workshops in the facilities of the Fraunhofer Institute for Solar Energy Systems ISE.

Our program provides not only in-depth knowledge and a suitable and flexible learning environment for working professionals but also enjoyable events and networking meetings with R & D and industry experts. Thanks to our enthusiastic and well-versed lecturers, I am convinced that you will maximize your knowledge in solar energy and become an expert yourself.

Yours faithfully

Prof. Dr. Stefan Glunz

Program Director Master of Science Solar Energy Engineering

## PROGRAM OVERVIEW AND TARGET GROUP

### Study Part-Time – From Anywhere In the World

You want to improve your skills and your knowledge in the field of solar energy – and at the same time continue working in your job? This Certificate program is ideal for professionals like you. During the last decade we created an innovative and flexible online learning environment – adapted to your needs.

### Become an Expert in Photovoltaics and the Renewable Energy Grid

You will learn from Germany's leading experts in solar energy. This 10-credit certificate provides a comprehensive understanding of the complex interactions between photovoltaic systems and the power grid.

### Step Up Your Career Ladder

Gain additional qualification and specialized knowledge to broaden your expertise and multiply your career opportunities. Our international programs offer a unique chance to join a highly motivated community of solar energy practitioners.

### Our Study Offer Is Made For You

This CAS is an ideal program if you are a working professional with:

- An existing knowledge in the energy sector and
- A solid background in Electrical Engineering



## CAS – ACCREDITED PROGRAMS FROM PRESTIGIOUS INSTITUTIONS

“From a central to a decentralized and renewable grid.”

*Prof. Dr. Christof Wittwer, Head of Department “Intersectoral Energy Systems and Grid Integration”, Fraunhofer Institute for Solar Energy Systems ISE*

### What is a Certificate of Advanced Studies?

A Certificate of Advanced Studies (CAS) is an advanced training program which is compliant with the European Credit Transfer System (ECTS).

These standards secure the high quality of CAS programs as well as their comparability and recognition across educational institutions. Thus it is possible to combine CAS programs from the same or different institutions from Germany and Switzerland to form a more extensive degree in a modular fashion.

### CAS Programs in Solar Energy Engineering

Our CAS course offers are the result of a long-standing scientific cooperation between the University of Freiburg and the renowned Fraunhofer Institute for Solar Energy Systems ISE.

Studying one of our CAS programs gives you access to expert knowledge from a world-leading research institute and awards you with a certificate of one of Germany’s top universities.

Our Certificate programs are designed to be a convenient way for you to study online while working. All our CAS programs can be completed within 6 or 12 months and are awarded with 10 ECTS each.

#### PG1.1 – Selected Semiconductor Devices

2 ECTS

Lecturer: **Dr. Oliver Höhn**

Researcher in the team “Microstructured Surfaces” at Fraunhofer ISE.

#### PG1.2 – Grid Integration and Control of PV Systems

4 ECTS

Lecturer: **Dr. Bernhard Wille-Haußmann** | Head of the Group

“Power Grids and Energy Management” at Fraunhofer ISE.

#### PG2.1 – Technologies for Renewable Energy Conversion

2 ECTS

Lecturer: **Dr. Thomas Schlegl**

Head of Department “Energy System Analysis” at Fraunhofer ISE.

#### PG2.2 – Smart Grids & Energy Autonom. Communities

2 ECTS

Lecturer: **Prof. Dr. Christof Wittwer** | Head of Department

Intersectoral Energy Systems and Grid Integration

This certificate provides a comprehensive understanding of interaction between PV systems and the power grid. It is about control aspects of PV systems and the integration of a huge amount of PV energy in the electricity grid. Furthermore, this certificate gives a wide overview on smart grid and renewable energy systems.



## GENERAL INFORMATION

**Start:** Mid April

**Duration:** 6 months

**Credits required:** 10 ECTS

**Program Fee:** € 2500

**Participation requirements:**

- An existing knowledge in electrical engineering and a fundamental understanding of photovoltaic systems.
- English language proficiency

**Study Format:**

- E-learning and online video lectures accompanied by readings, exercises and online meetings with tutors and lecturers
- Two written exams (60 and 30 minutes each) in a study center close to where you live
- Two seminars which include preparation of a handout and a final oral presentation

**Degree:** Certificate of Advanced Studies (CAS)

**Application:** [www.studysolar.uni-freiburg.de](http://www.studysolar.uni-freiburg.de)

In scientific cooperation with



## YOUR BENEFITS AT A GLANCE

- »»» Gain a comprehensive understanding of the complex interactions between photovoltaic systems and the power grid
- »»» Learn about the control aspects of PV systems and the integration of a huge amount of PV energy in the electricity grid
- »»» Get an understanding of smart grids and energy autonomous communities
- »»» Advance your professional career by learning from Germany's leading experts in solar energy
- »»» Keep working in your job and enjoy the flexibility of studying an online, part-time Certificate Program
- »»» Earn an accredited Certificate of Advanced Studies (CAS) from two prestigious institutions
- »»» Broaden your expertise and multiply your opportunities by combining different accredited Certificate Programs offered by us and our partners



## DO YOU HAVE ANY QUESTIONS FOR US?

About content related issues?

About the registration process/general issues?

About further similar programs?

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