



**Fraunhofer**  
ACADEMY

Certificate of Advanced Studies (CAS)

## **CAS 2 – SOLAR THERMAL ENERGY TECHNOLOGY**

**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 Solar Thermal Energy Technology

You will learn from Germany's leading experts in solar energy. This 10-credit certificate gives a wide overview on solar thermal systems and their main components.

### 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 for people with with:

- Existing knowledge in the energy sector, or
- Professional experience in the solar thermal industry



## CAS – ACCREDITED PROGRAMS FROM PRESTIGIOUS INSTITUTIONS

“We will discuss the systems that are used worldwide, how big the market is and what the real costs are.”  
*Prof. Dr. Werner Platzer, 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.

---

### Lecturer: Hon.-Prof. Dr. Werner Platzer

Director of the Division “Solar Thermal and Optics” at Fraunhofer ISE

#### 2.1 – Fundamentals of Solar Thermal Collectors

**5 ECTS**

Starting point are the basic physical principles behind this technology. All types of solar collectors are discussed. Especially Linear Fresnel collectors and solar tower heliostat fields are reviewed.

#### 2.2 – Design of Solar Thermal Systems

**5 ECTS**

An important topic is the energy efficiency and the integration of solar thermal heat in industrial processes. Aspects like hybridization of CSP with PV or the impact of different high-temperature storage options are considered.

This Certificate gives a wide overview on solar thermal systems and their main components. Starting with basic issues of physical processes and design options for non-concentrating and concentrating solar thermal collectors, we will then head on to the systems engineering of these technologies. The complex systems for different applications ranging from solar water heating to process heat for industry to solar thermal power production will be described.



## GENERAL INFORMATION

**Start:** Mid October

**Duration:** 12 months

**Credits required:** 10 ECTS

**Program Fee:** € 2500

**Participation requirements:**

- Basic knowledge of thermodynamics and heat transfer physics
- 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 (75 minutes each) in a study center close to where you live
- Join our voluntary Campus Phase here in Freiburg, Germany

**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 wide overview on solar thermal systems and their main components
- »»» Get an understanding of all types of solar collectors – especially linear Fresnel collectors and solar tower heliostat fields will be reviewed
- »»» Learn about the hybridization of CSP with PV and about the impact of different high-temperature storage options
- »»» 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?

### **Prof. Stefan Glunz**

Program Director  
Fraunhofer Institute for  
Solar Energy Systems ISE  
contact@studysolar.  
uni-freiburg.de

### **Philipp Bucher**

Program Coordinator  
University of Freiburg  
P +49 761 203-7213  
contact@studysolar.  
uni-freiburg.de

### **Lena Kurtz**

Program Manager  
Fraunhofer Academy  
P +49 89 1205-1526  
lena.kurtz@  
zv.fraunhofer.de

[www.academy.fraunhofer.de/solar-energy-engineering](http://www.academy.fraunhofer.de/solar-energy-engineering)  
[www.studysolar.uni-freiburg.de](http://www.studysolar.uni-freiburg.de)