Fraunhofer
ACADEMY

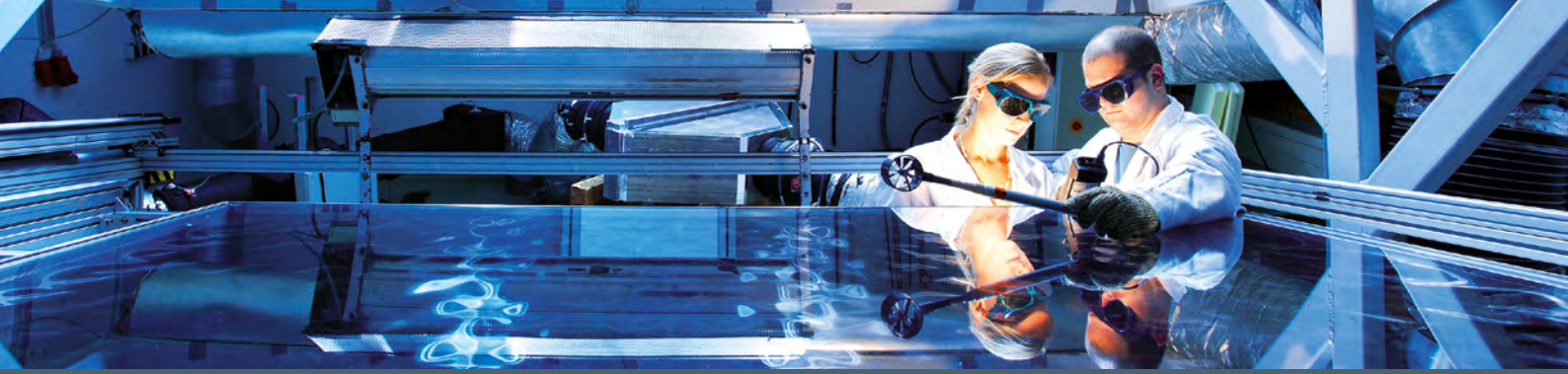
Certificate of Advanced Studies (CAS)

CAS CM – SOLAR CELL CHARACTERIZATION AND MODELLING

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

Stefan Glunz

Prof. Dr. Stefan Glunz
Program Director Master of Science Solar Energy Engineering

YOUR BENEFITS AT A GLANCE

- ››› Gain insights into the common characterization techniques for feedstock, solar cells and modules
- ››› Learn about the numerical simulation of solar cells and get trained in the software COMSOL
- ››› Experience a two-day Lab Workshop in the state-of-the-art facilities of Fraunhofer ISE in Freiburg at the end of your course
- ››› 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

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.

Become an Expert in Solar Cell Characterization and Modelling

You will learn from Germany's leading experts in solar energy. This 10-credit certificate provides practical as well as theoretical insights into common characterization techniques used for solar cell characterization.
It also introduces participants to numerical solar cell simulation.

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:
– A good mathematical understanding, and
– A confident handling of quantitative data and complex simulation software

GENERAL INFORMATION

Start: Mid October
Duration: 6 months
Credits required: 10 ECTS
Program Fee: € 2500
Participation requirements:
– Existing knowledge of semiconductor physics and solar cells.
– English language proficiency
– The availability to travel to Freiburg for a 2-day lab training
Study Format:
– E-learning and online video lectures accompanied by readings, exercises and online meetings with tutors and lecturers
– Two written exams (45 and 75 minutes) in a study center close to where you live
– Mandatory attendance in a hands-on workshop (2 days)
Degree: Certificate of Advanced Studies (CAS)
Application: www.studysolar.uni-freiburg.de

In scientific cooperation with
Fraunhofer ISE

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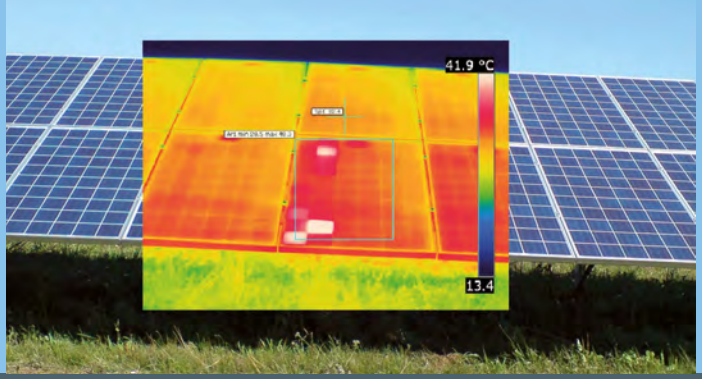

CAS – ACCREDITED PROGRAMS FROM PRESTIGIOUS INSTITUTIONS

"Learn about the tricks and measurements and how to determine the limits of different kinds of solar cells."
Dr. Martin Schubert, 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.

CM1.1 – Material and Solar Cell Characterization **3 ECTS**
Lecturer: Dr. Martin Schubert | Head of the Department "Quality Assurance, Characterization and Simulation" at Fraunhofer ISE.

CM1.2 – Hands-on Measurement Instrumentation **2 ECTS**
Lab supervisor: Dr. Jonas Haunschild | Head of Group "Inline-Wafer/Process Analytics and Production Control" at Fraunhofer ISE.

CM2.1 – Numerical Simulation of Solar Cells **5 ECTS**
Lecturer: Prof. Dr. Jürgen Schumacher | Professor at the Zurich University of Applied Sciences (ZHAW) and team leader "Electrochemical Cells and Energy Systems".

This Certificate provides practical as well as theoretical insights into common characterization techniques used for solar cell characterization. Participants will also learn how a simulation package for solar cell simulation works, by providing an insight into the numerical techniques to discretize the governing equations to describe solar cells. The Software COMSOL will be used intensively. The Certificate includes a laboratory course "Measurement Instrumentation" in Fraunhofer ISE's labs.



DO YOU HAVE ANY QUESTIONS FOR US?

About content related issues?

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About the registration process/general issues?

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About further similar programs?

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www.studysolar.uni-freiburg.de

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