



# Short-term Training for technical staff and scientists

## Optical characterization of reflectors and receivers

**Location:** Germany – Freiburg – Fraunhofer ISE

**Date:** October 13-14, 2021

**Target group:** The course is designed for engineers, researchers and representatives from European CSP industry and companies who want to be trained on real CSP hardware.

**Objective:** Sharing expertise in the theoretical and practical competences needed for optical characterization and measurements on solar collectors.

**Trainers:** Scientists and Specialists from Fraunhofer ISE

The training will include visits, procedures, standards and best practices theoretical and experimental 'hands-on' experience and cover the following topics:

- Optical modelling tools
- Optical laboratory characterization facilities
- Optical portable characterization facilities in field
- Practical test cases

## *Agenda*

### First day

09:15 – 09:45	Welcome coffee		30m
09:45 – 10:00	Introduction of Agenda	Peter Schöttl	15m
10:00 – 11:00	Optical Modelling Tools - Raytrace3D, DevISE – material models	Peter Schöttl	60 min
11:00 – 11:15	Coffee break		15m
11:15 – 12:15	Introduction Optical Labs, mirror and absorber characterization	Gregor Bern	60 min
12:15 – 13:15	Lunch Break		60 min
13:15 – 14:15	Lab Visit	Thomas Schmidt	60 min
14:15 – 14:30	Break		15m
14:30 – 16:30	Optical Labs: hands on experiments – Deflectometry mirror shape assessment, VLABS reflectance measurements	Gregor Bern / Thomas Schmidt	120 min

## *Agenda*

### Second day

09:00-09:15	Welcome coffee		15m
09:15-10:00	Introduction Field Instrumentation – Camera based reflectance measurement and 3-D laser scanning for the assessment of concentrating collectors	Gregor Bern	45m
10:15-12:15	Visit and measurements at field lab – hands-on experience	Thomas Schmidt/ Gregor Bern	120 min
12:15-13:15	Lunch Break		60 min
13:15-14:30	Discussion and wrap up	Gregor Bern	75 min

## MEETING PLACE & ACCOMMODATION

Training place	Fraunhofer Institute for Solar Energy
Address Training Location:	Heidenhofstraße 2, 79110 Freiburg im Breisgau
How to get to the Training place from the airport	Airport Shuttle from EuroAirport Basel, Mulhouse, Freiburg to Freiburg
Restaurant place	On site
Accommodation	Hotel close to Fraunhofer ISE We will send a list of suitable hotels after confirmed registration
Contacts for the Training	Peter Schöttl <a href="mailto:peter.schoettl@ise.fraunhofer.de">peter.schoettl@ise.fraunhofer.de</a> Lina Graf <a href="mailto:noa.lina.graf@ise.fraunhofer.de">noa.lina.graf@ise.fraunhofer.de</a>
Participation confirmation for the Training	SFERA III website : <a href="https://sfera3.sollab.eu/events/list/">https://sfera3.sollab.eu/events/list/</a>

## *APPLICATION FORM FOR SHORT-TERM TRAINING FRA 13.-14.10.21*

First Name

Last Name

Affiliation

E-Mail

Which topic are you most interested in?

*Please send the filled-out form to [peter.schoettl@ise.fraunhofer.de](mailto:peter.schoettl@ise.fraunhofer.de).*