Process Heat Application for CST Technologies: System Integration, Design, Performance Assessment

Location:	Fraunhofer Institute for Solar Energy Systems ISE Heidenhofstrasse 2, 79110 Freiburg, Germany
Date:	November 6 - 10, 2023
Target group:	The course is designed for engineers, researchers and representatives from European CSP and SHIP industry and companies.
Course Language:	English
Trainers:	Scientists and specialists from Fraunhofer ISE and external parties
Objective:	The training will cover various topics related to *Solar Heat for Industrial Processes (SHIP)*. This will include:

- Concentrating and non-concentrating collectors
- Storage systems
- Process integration
- Measurement and performance assessment
- Certification
- Techno-economic assessment
- Business models
- Networking

For more details, please have a look at the agenda on page 2.

Application:	The **registration deadline is September 10th, 2023**. Class size is limited to 15 participants. Eligible candidates will be informed until October 1st, 2023. Standard health and safety measures defined by Fraunhofer ISE for visitors and meetings will apply (details to be given prior to the meeting depending on latest development of the covid-19).
Fees:	No course fee is applicable. Accommodation and travel costs shall be covered by the participant. Lunch is offered by Fraunhofer ISE.
Contact:	**Peter Schöttl, +49 761 4588-5732, peter.schoettl@ise.fraunhofer.de** Gregor Bern, +49 761 4588-5906, gregor.bern@ise.fraunhofer.de Thomas Fluri, +49 761 4588-5994, thomas.fluri@ise.fraunhofer.de
Participation:	To apply, please fill out the application form found on SFERA III website (here) and send it to: anja.kruschinski@dlr.de

For more information, visit the SFERA-3 website.

	Mon	Tue Nov 7	Wed Nov 8	Thu Nov 9	Fri Nov 10
			Nov 6-10, 2023		
09:00-12:00	Travel / Arrival	• Introduction Fraunhofer ISE • Introduction of participants • What is SHIP: technology overview, temperature levels, market overview	• Certification of flat-plate/concentrating solar thermal collectors: Solar Keymark • Visit to Solar Thermal Testlab @ISE	• Visit TES+WT-Labs @ISE • Session on thermal storage integration in SHIP applications • Visit High-Temperature Heat Pump-Labs @ISE	• Hands-on session: techno-economic assessment (tool: Solar Payback) • Session on Heat Contracting / business models • Networking session
12:00-13:00		Lunch break	Lunch break	Lunch break	Lunch break
13:00-17:00		Hands-on concentrating collector optics: • Reflectance/soiling measurement (PFLEX, VLABS) • Shape assessment with deflectometry • Laser scanning for CST applications	• Collector design/optimization (CST@ISE) • Site visit	Process design/integration: • Hands-on session: Pinch Analysis (tool: PinCH) • Success Stories: process integration for solar thermal collectors • Feasibility study and techno-economic optimization (ColSimCSP)	Departure
Eve.	Social dinner			Social dinner	

This is a draft agenda. Description and time slot of some items may be subject to changes.