

# Applications Open for SolarTwins' 2<sup>nd</sup> Summer School

## Concentrating Solar Thermal (CST) Applications and Next-Generation Technologies

### Week 1

**Dates:** 30 Aug.– 01 Sept. 2022

**Topics:** Solar Driven Water Desalination and Treatment Technologies

**Format:** In-Person at METU, Turkiye

**Instructors:** Globally leading experts from CIEMAT-Plataforma Solar de Almería, Spain.

### Week 2

**Dates:** 5 – 9 Sept. 2022

**Topics:** Next-Generation CST Technologies

**Format:** Online

**Instructors:** Globally leading experts from DLR, Germany.

### Draft Agenda

<b>Week 1</b>	Instructors: DA Diego Alarcón IO Isabel Oller		
<b>Solar Driven Water Desalination and Treatment Technologies</b>	Tuesday, 30 Aug. 2022		
	1. Fundamentals of water desalination	2 hr	DA
	2. Fundamentals of water decontamination	1.5 hr	IO
	3. Fundamentals of water disinfection	1.5 hr	IO
	Wednesday, 31 Aug. 2022		
	1. Fundamentals of thermal desalination processes	2.5 hr	DA
	2. Solar photoreactors for water decontamination & disinfection	1 hr	IO
	3. Advanced analytical techniques for water treatment monitoring	1.5 hr	IO
	Thursday, 01 Sept. 2022		
	1. Solar thermal energy in desalination	1.5 hr	DA
	2. Solar thermal cogeneration schemes	1.5 hr	DA
	3. Water treatment technology applications: industrial & urban wastewater	2 hr	IO
<b>Week 2</b>	Morning sessions start at 9 am (CET), 10 am (TRT). Afternoon sessions start at 1 pm (CET), 2 pm (TRT).		
<b>Next-Generation CST Technologies</b>	Monday, 05 Sept. 2022		
	1. A review of solar receiver concepts and other components in CSP systems	Morning	Luka Lackovic
	2. Modelling Efforts for the particle receivers and their application to CentRec	Afternoon	Serdar Hicdurmaz
	Tuesday, 06 Sept. 2022		
	1. Experimental work and results for solar particle receivers	Morning	Anja Raab
	2. Development of a Gas-Particle Trickle Flow Heat Exchanger for Application in CSP Tower Plants	Afternoon	Markus Reichart
	Wednesday, 07 Sept. 2022		
	Hydrogen and Hydrocarbon generation through solar thermal processes	All Day	Martin Roeb

	Thursday, 08 Sept. 2022 Solar Energy integration into basic material production and recycling	All Day	Gkiokchan Moumin
	Friday, 09 Sept. 2022 Standardized reflector testing and advanced optical characterization tools	All Day	Florian Wiesinger

<b>Apply</b>	Apply for one or both weeks at <a href="https://forms.gle/x77mUF5s6XNHmhAv5">https://forms.gle/x77mUF5s6XNHmhAv5</a> .
<b>Admissions and Target Audiences</b>	This Summer School is specifically targeting engineers with at least a BSc degree including graduate students, academics, and researchers in industry. Registration priority will be given to: <ol style="list-style-type: none"> <li>1. METU researchers collaborating with CIEMAT or DLR experts through the SolarTwins;</li> <li>2. METU researchers performing research aligned with SolarTwins;</li> <li>3. The Turkish <i>ODAK<sub>TR</sub></i> CST community;</li> <li>4. Female researchers and engineers from any institution to support the UN's Sustainable Development Goal (UN SDGs) for Gender Equality;</li> <li>5. Researchers and engineers with connections to countries that often lack access to scientific courses sponsored by the EU and other major scientific funding agencies with a specific focus on Nigeria and Pakistan.</li> </ol>
<b>Costs and Dorms</b>	Both weeks of summer school are free to all students. Tentatively SolarTwins will be able to provide free dorms on the METU campus in Ankara, Turkiye, to a limited number of students for the 1 <sup>st</sup> week. Students who would like to apply for a dorm should indicate this while registering. Since the 2 <sup>nd</sup> week is online, students can attend remotely and thus there is no need for dorm space.
<b>About the Instructors</b>	<p><b>Dr. Diego Alarcón</b> is a senior researcher of the Solar Thermal Applications Unit at CIEMAT-Plataforma Solar de Almería, Spain.</p> <p><b>Serdar Hicdurmaz</b> is a Researcher at DLR - Institute of Solar Research, Germany.</p> <p><b>Dr. Luka Lackovic</b> is the Team Lead for High temperature particle systems, at DLR - Institute of Solar Research, Germany.</p> <p><b>Gkiokchan Moumin</b> is a Project Manager at the DLR Institute of Future Fuels, Germany.</p> <p><b>Dr. Isabel Oller</b> is the Head of the Solar Treatment of Water Unit at CIEMAT-Plataforma Solar de Almería, Spain.</p> <p><b>Anja Raab</b> is a researcher at DLR - Institute of Solar Research, Germany.</p> <p><b>Markus Reichart</b> is a researcher at DLR - Institute of Solar Research, Germany.</p> <p><b>Dr. Martin Roeb</b> is the Department Head in the Institute of Future Fuels, Germany.</p> <p><b>Dr. Florian Wiesinger</b> is researcher at DLR - Institute of Solar Research, Spain.</p>
<b>About the SolarTwins Project</b>	SolarTwins is an EU Horizon 2020 (H2020) project. The aim of the SolarTwins project is to step-up the scientific excellence of the promising CST Research Division <i>ODAK</i> of METU (Coordinator) in collaboration with the internationally leading CST institutions CIEMAT-PSA (Spain) and DLR (Germany). During SolarTwins <i>ODAK</i> was spun-out of METU to form the larger Turkish Center of Excellence on Solar Energy <i>ODTU-GUNAM</i> . While METU is still the SolarTwins coordinator, <i>ODTÜ-GÜNAM</i> is an unofficial beneficiary. SolarTwins includes 4-weeks of CST summer schools at METU taught by leading experts from CIEMAT-PSA and DLR, and METU graduate students co-advised by experts from CIEMAT-PSA and DLR. An expected impact is the establishment of competitively-funded METU, <i>ODTU-GUNAM</i> and CIEMAT, and METU, <i>ODTU-GUNAM</i> , and DLR Joint Research Lines.



SolarTwins has received funding from the Horizon 2020 research and innovation program under grant agreement No 856619.



## About ODAK<sub>TR</sub>

ODAK<sub>TR</sub> is a Turkish CST initiative catalyzed by SolarTwins and led by METU and ODTÜ-GÜNAM. The objectives of ODAK<sub>TR</sub> are to

1. Support Turkey's Clean Energy Transition through the development and commercialization of CST technologies;
2. Strengthen Turkey's CST Research and Innovation (R&I) capacities, including by creating globally competitive CST research opportunities at Turkish universities.
3. Catalyze domestic CST economic activity by supporting growth in markets, industrial capacities, and industrial activities;

One of ODAK<sub>TR</sub>'s main strategies to achieve these objectives is through harmonization of national activities with EU CST initiatives by strengthening and exploiting synergies created by METU and ODTÜ-GÜNAM's participation in 6 accepted, on-going or recently completed EU Horizon projects: 1. SolarTwins; 2. HORIZON-STE; 3. SFERA-III; 4. INSHIP; 5. GeoSmart; 6. CST4ALL.

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## Organizing Institutions



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