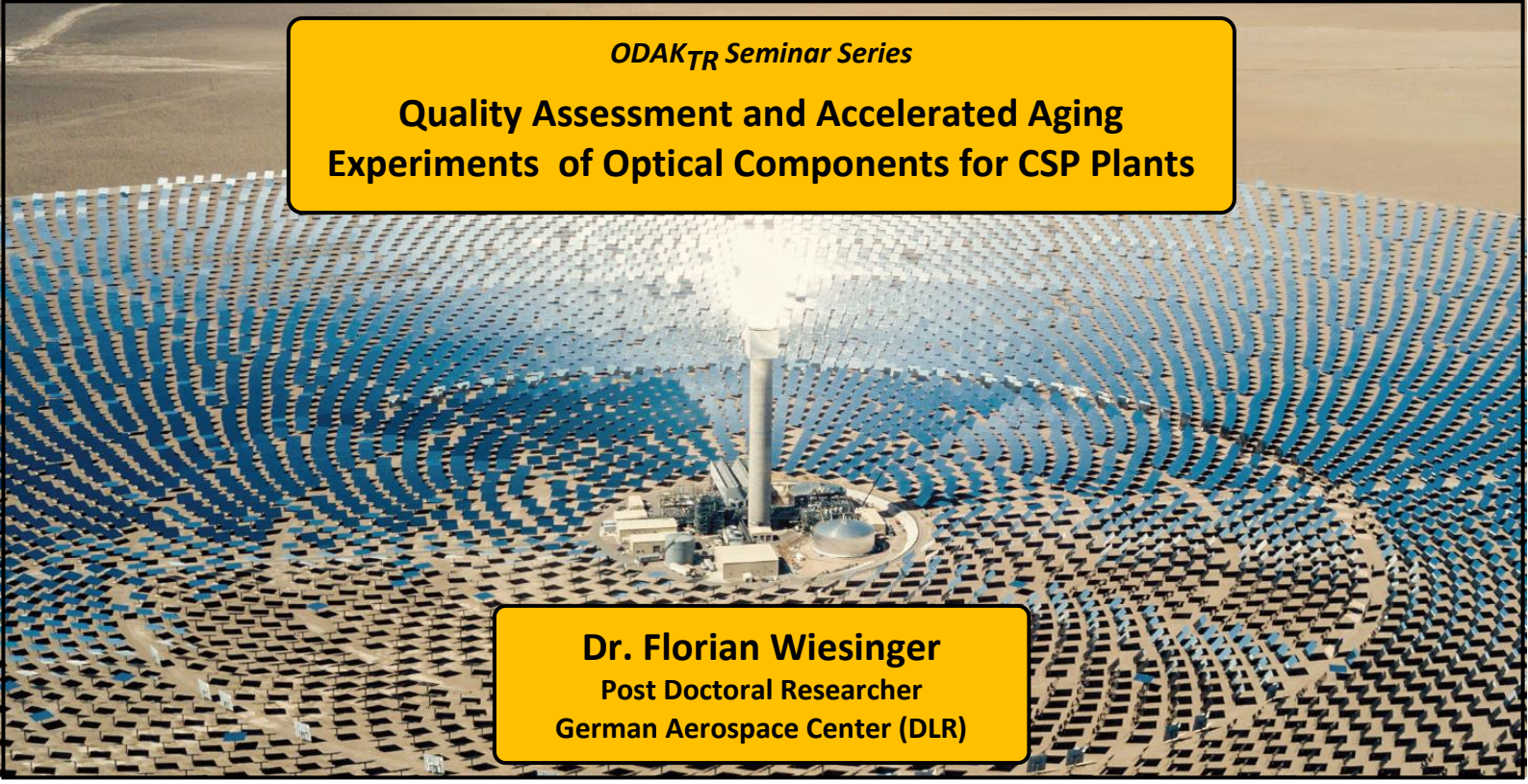

*ODAK$_{TR}$ Seminar Series*

# Quality Assessment and Accelerated Aging Experiments of Optical Components for CSP Plants


**Dr. Florian Wiesinger**
**Post Doctoral Researcher**
**German Aerospace Center (DLR)**


**Live Seminar Time and Date*:** 12:00-13:00 (Turkish time / GMT + 3)
Friday, Jan. 15, 2021

**Recorded Seminar:** Link

**Registration for live seminar closes at 10:00, Thursday, 14 Jan. 2021:** Attendance to the live seminar will be limited and if necessary people who register last will only be given a link to the recording of the seminar.


**Abstract:** The seminar will give an introduction of the optical components of concentrating solar thermal (CST) technologies and some state of the art quality assessment tools are explained. The typical effects of outdoor exposure on the components will be shown and consequently a summary of accelerated aging experiments, which are used to simulated the natural effects under controlled conditions, is given. A special focus is laid on the reproduction of erosion effects caused by sandstorm events.


**Short Bio:** Florian Wiesinger is a postdoctoral researcher at the institute of solar research of the German Aerospace Center (DLR), located in Almeria/Spain and working in close collaboration with Spanish Center for Energy, Environment and Technological Research (CIEMAT). After receiving his M.Sc. degree in physics at the Technical University in Munich he started working at the Plataforma Solar de Almería (PSA) with a focus on component reliability and quality assessment. In 2018 he finished his dissertation about sandstorm effects on solar mirrors.

**About DLR's Institute of Solar Research:** DLR's Institute of Solar Research develops concentrating solar systems for the generation of heat, power and fuel. These technologies are used, for example, in Solar power plants in Spain, the United States and many other countries with high levels of direct solar radiation. The Institute is represented at the DLR sites in Cologne, Jülich and Stuttgart. In southern Spain, scientists from the Institute are conducting research at the Plataforma Solar de Almería (owned and operated by Spanish research centre CIEMAT), Europe's largest research facility for concentrating solar systems. Jülich is home to the Institute's two large-scale facilities: Germany's only solar tower and Synlight, the world's largest facility for the production of artificial sunlight. In addition, the Institute operates a solar furnace at its headquarters in Cologne and a small high-flux solar simulator.

**About ODAK$_{TR}$:** *ODAK$_{TR}$* is a national CST initiative led by METU-GÜNAM with objectives to

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

One of *ODAK$_{TR}$*'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-GÜNAM's role as Turkey's National Node for the CST European Research Infrastructure Consortium (ERIC) EU-SOLARIS, and participation in 5 EU H2020 projects: 1. SolarTwins; 2. HORIZON-STE; 3. SFERA-III; 4. INSHIP; and 5. GeoSmart.

**About the ODAK$_{TR}$ Seminar Series:** Through the ODAK$_{TR}$ Seminar Series, leading CST experts from METU-GUNAM's strategic CST partners CIEMAT-PSA (Spain) and DLR (Germany) and other CST experts will give seminars targeting the Turkish CST community and tailored to support realization of ODAK$_{TR}$'s objectives. The ODAK$_{TR}$ Seminar Series is being executed within the framework of the H2020 Project SolarTwins and this specific seminar is co-sponsored by the H2020 Horizon-STE project. The current ODAK$_{TR}$ Seminar Series schedule is as follows, with all seminars from 12:00-13:00 Turkish time:

| Date | Speaker, Institution | Seminar Title |
|---|---|---|
| 18 Dec. 2020 | Prof. Dr. Eduardo Zarza,<br>CIEMAT-PSA, Spain | An Introduction to Concentrating Solar Thermal (CST) Technologies and Applications |
| 08 Jan. 2021 | Dr. Yelda Erden-Topal,<br>UPM & CIEMAT, Spain, and<br>METU TEKPOL, Turkey | CST in Turkey: Current State and National Strategies to Exploit Opportunities |
| 15 Jan. 2021 | Dr. Florian Wiesinger,<br>DLR - Inst. of Solar Research, Germany | Quality Assessment and Accelerated Aging Experiments of Optical Components for CSP Plants |
| 21 Jan. 2021 | Dr. Gkiokchan Moumin,<br>DLR – Inst. of Solar Research, Germany | Solar heat for the calcination processes |
| 5 Feb. 2021 | Dr. Inmaculada Polo,<br>CIEMAT-PSA, Spain | Antibiotic Resistant Bacteria: occurrence and removal from urban wastewater |
| 12 Feb. 2021 | Dr.Reiner Buck,<br>DLR - Inst. of Solar Research, Germany | Solar Particle Technology for Dispatchable Power and Heat Generation |
| 26 Feb. 2021 | Dr. Isabel Oller,<br>CIEMAT-PSA, Spain | Water-Energy-Food nexus in industrial and urban wastewater recovery |

**About the H2020 SolarTwins Project:** The aim of the SolarTwins project is to step-up the scientific excellence of the promising CST Research Division *ODAK* of METU-GÜNAM (Coordinator) in collaboration with the internationally leading CST institutions CIEMAT-PSA (Spain) and DLR (Germany). 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-CIEMAT and METU-DLR Joint Research Lines.

**About METU-GÜNAM's CST Research Division *ODAK*:** ODAK includes a diverse set of academics and post-doctoral researchers who are actively contributing to METU-GÜNAM's National and European CST activities:

Burcu AKATA KURÇ MNT, METU
Derek BAKER ME, METU
Özgür BAYER ME, METU
Zeynep ÇULFAZ EMECEN ChE, METU
Yelda ERDEN TOPAL TEKPOL, METU
Feyza KAZANÇ ME, METU
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## EU Projects and Activities Showcased by ODAK$_{TR}$

SolarTwins | HORIZON STE | EU SOLARIS | inship | SFERA | GEOSMART

## ODAK$_{TR}$ Organizing Institutions

ODTÜ METU | GÜNAM Center for Solar Energy Research and Applications | Ciemat PSA | DLR

## Funding Agencies Supporting Projects Showcased by ODAK$_{TR}$

The European Union projects have received funding from the Horizon 2020 research and innovation program under grant agreements No 856619 (SolarTwins), 838514 (HORIZON-STE), 731287 (INSHIP), 823802 (SFERA-III), and 818576 (GeoSmart).

Funding for METU-GÜNAM's CST Research Infrastructure for SFERA-III was provided by the Turkish Ministry of Development under grant 2015K121200.