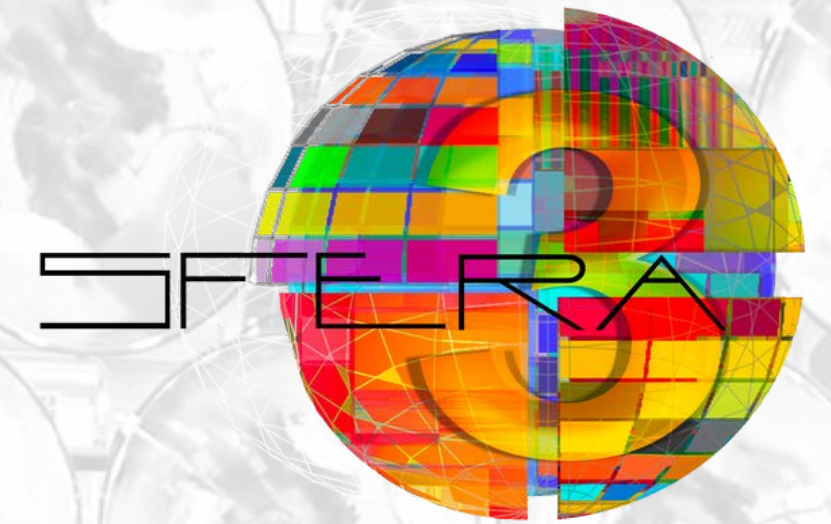




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Key figures from doctoral colloquia, summer schools and training for industry

SFERA-III
Final Event

December 13, 2023 | Madrid, Spain

Daniel Benitez (DLR) / Alain Dollet
(CNRS)



THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S HORIZON 2020
RESEARCH AND INNOVATION PROGRAMME UNDER GRANT AGREEMENT NO 823802

Motivation

- Training and preparation of future users (academic and industrial) of SFERA-III RIs
- Support to acquisition of new knowledge and skills in CST, thereby contributing to overall CST capacity building in Europe.

General objectives

- Strengthening the collaboration and the transfer of knowledge between the SFERA-III partners
- Fostering the use of the SFERA-III RIs by tailored actions for the future users (target : increase the participation of the industry)
- Creating a pool of highly-qualified professionals in the CST field through high-level training activities
- Sharing the latest developments with the CST community

WP1 : Capacity building and training activities

DC

Doctoral Colloquia

- 4 Colloquia (1/year) hosted by 4 SFERA-III laboratories
- Events restricted to SFERA-III members
- Presentations of their research works on CST by PhD students
- Visits of solar facilities + networking activities

Joint events

SSc

Summer Schools

- 4 Schools (1/year) hosted by 4 SFERA-III laboratories
- Events open to a larger audience (including industry)
- Topic of the School decided each year
- Presentations by confirmed researchers

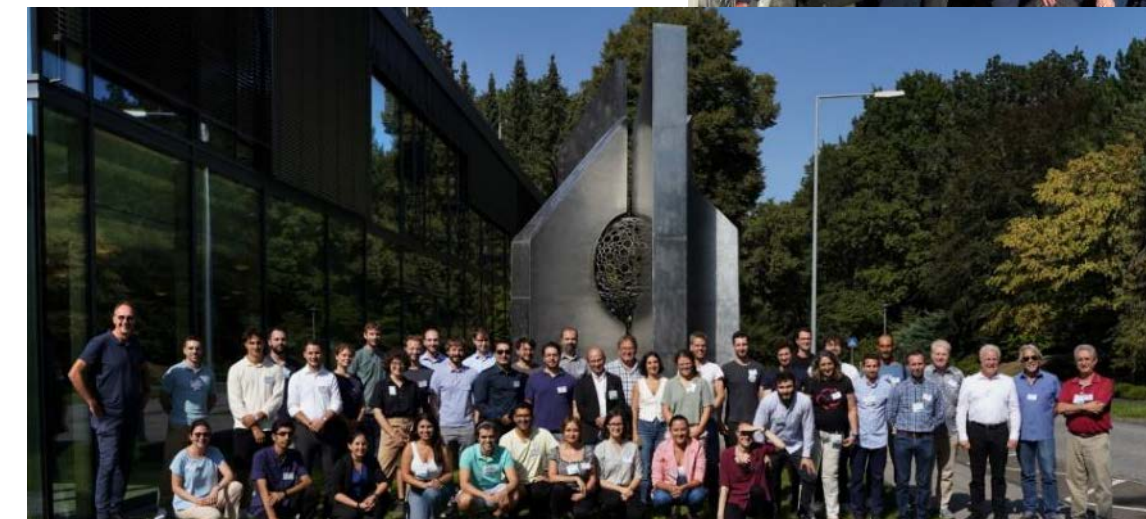
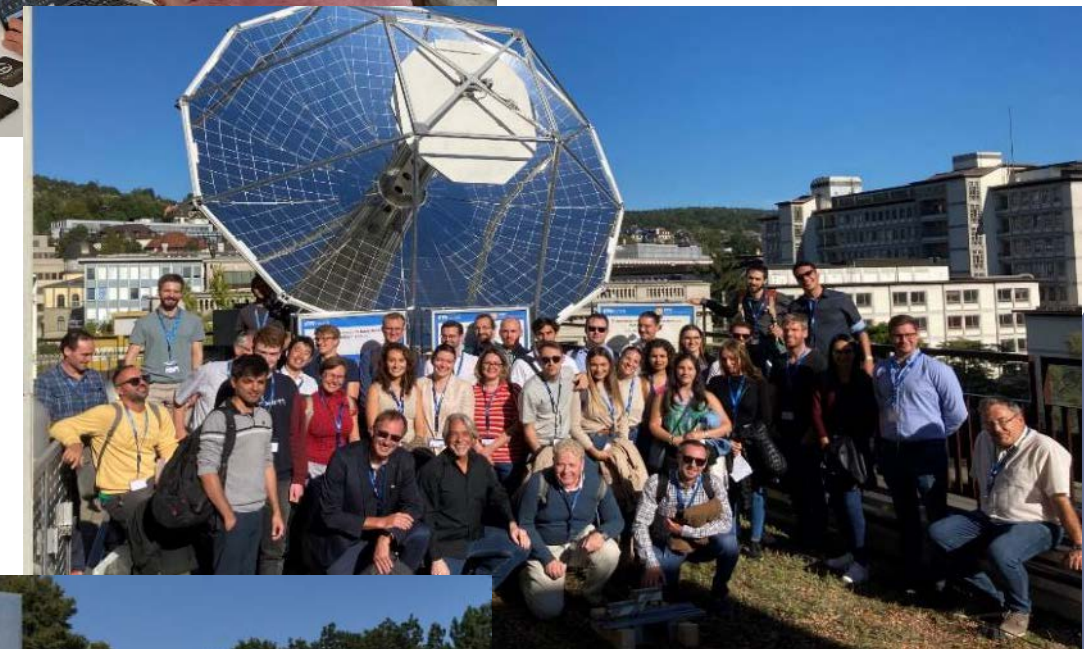
TrI

Trainings for Industry

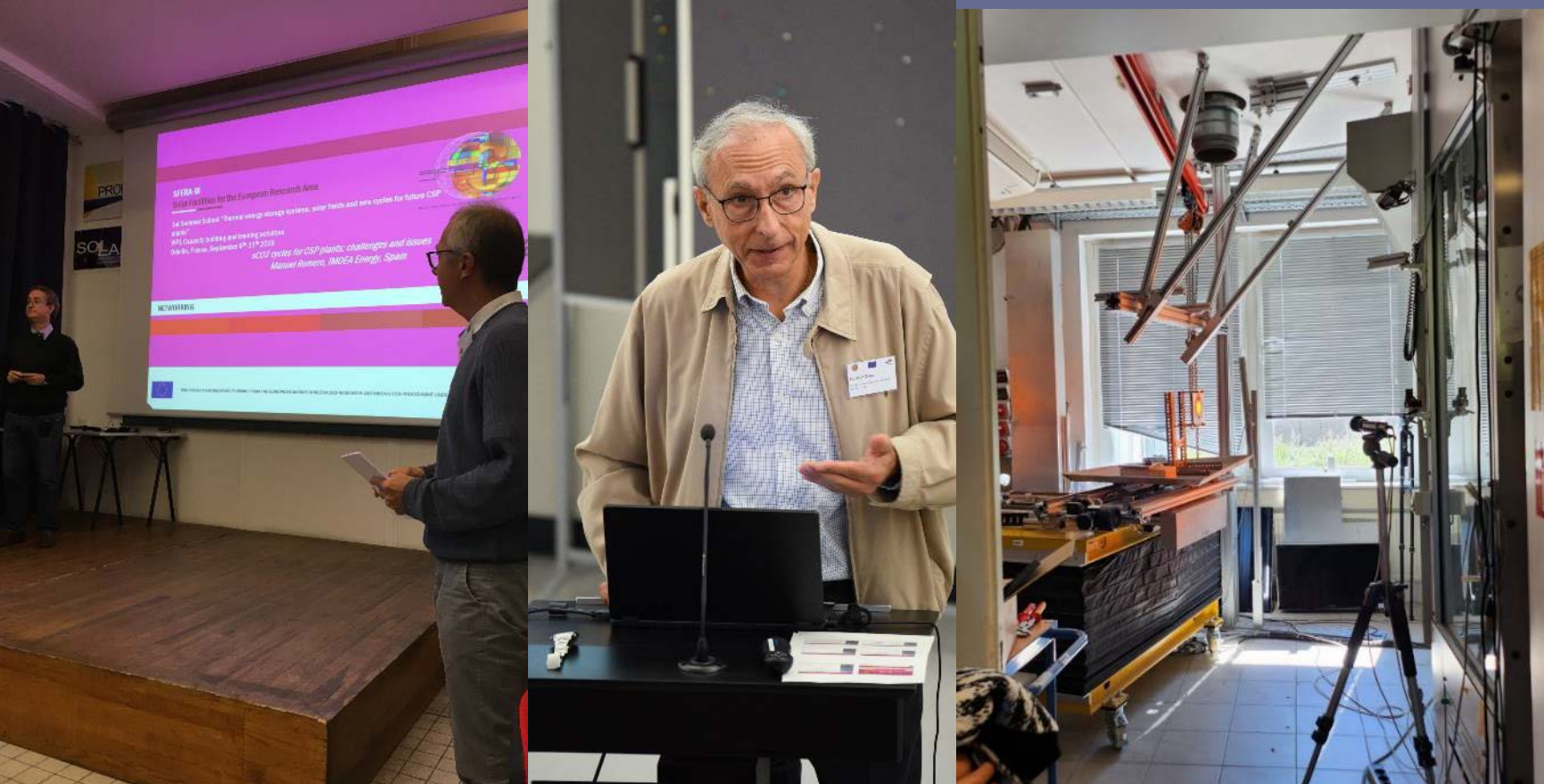
- 5 on-site trainings hosted by SFERA-III laboratories
- Topics decided at the start of the SFERA-III project
- Limited number of trained researchers/engineers from Industry (applications required)
- Both theory and hands-on activities, visits of facilities

Doctoral Colloquia

Location host dates	Number of PhD presentations	Total number of attendees
Odeillo, France host : CNRS <i>11-13/9/2019</i>	23	40
Almeria, Spain host : CIEMAT <i>7-9/10/2021</i>	35	44
Zürich, Switzerland host : ETH-Z <i>12-14/9/2022</i>	30	44
Cologne, Germany host : DLR <i>11-13/9/2023</i>	31	46



Topics of the Summer Schools



- **School 1 (2019, France)**

Thermal energy storage systems, solar fields and new cycles for future CSP plants

- **School 2 (2021, Spain)**

Solar Process Heat Applications and Water Solar Desalination

- **School 3 (2022, Switzerland)**

Solar Thermochemistry

- **School 4 (2023, Germany)**

Smart CSP: *How Smart Tools, Devices & Software can help improve the Design & Operation of CSP Technologies*

Summer Schools

Location host dates	Number of attendees (incl. number from private companies)	Number of countries
Odeillo, France host : CNRS <i>9-11/9/2019</i>	60(4)	10
Almeria, Spain host : CIEMAT <i>25-29/10/2021</i>	61(19)	7
Zürich, Switzerland host : ETH-Z <i>15-16/9/2022</i>	44(1)	7
Cologne, Germany host : DLR <i>14-15/9/2023</i>	73*(9)	23

** incl. 24 remote participants*



Topics of the trainings

- **Training 1 (2019, France)**

Central receivers and heliostat field

- **Training 2 (2022, Spain)**

Optimization of CST plant output by optical & thermal characterization and target-oriented O&M

- **Training 3 (2022, France)**

Testing the durability of solar materials and systems

- **Training 4 (2023, Italy)**

Use of molten salt as HTF and/or HSM in CST plants that employ linear focusing systems

- **Training 5 (2023, Germany)**

Process heat application for CST technologies: system integration, design and performance assessment

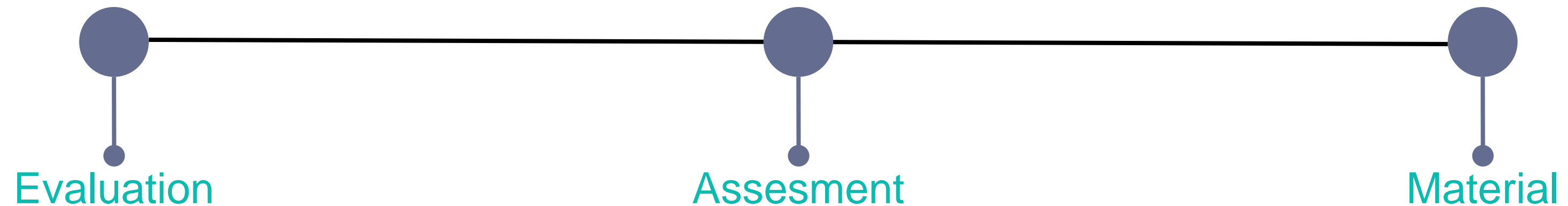


Trainings for industry

Location (host) <i>dates</i>	Number of attendees /applications received	Number of countries
Odeillo, France Org : CNRS (+FRA) <i>9-12/07/2019</i>	13/22	8
Almeria, Spain Org : DLR(+CIEMAT) <i>25-29/04/2022</i>	15/51	8
Cadarache, France Org : CEA(+DLR) <i>8-10/06/2022</i>	8/15	5
Casaccia, Italy Org : ENEA(+DLR) <i>7-11/11/2022</i>	17/22	4
Freiburg, Germany Org : FRA <i>6-10/11/2023</i>	17/45	8



Outcomes



Anonymous questionnaire filled by the participants at the end of each event.

- The overall appreciation was always very good to excellent
- The technical visits of facilities were particularly appreciated (DCS, SSc and Tri)
- The panel discussion on SHIP (SSc 3) was very much appreciated
- Some people would have liked to have more practical exercises (trainings) or more time for presentations (Schools) and discussions (DCs)

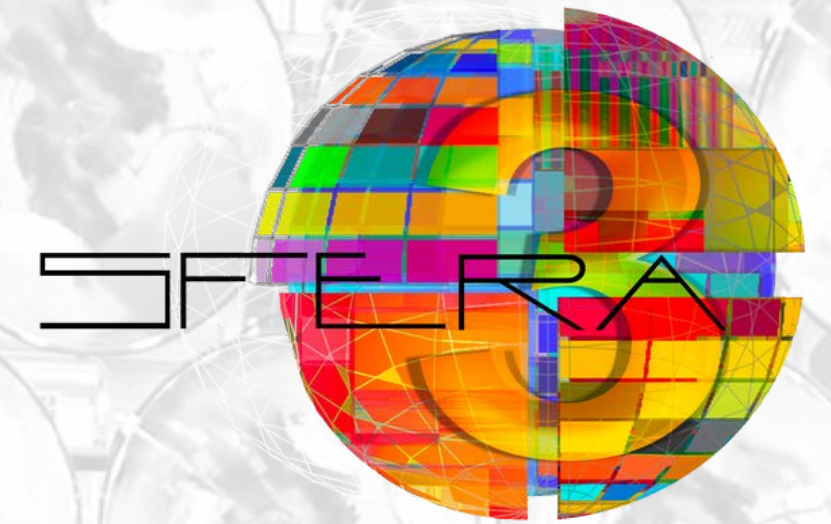
- On-site Trainings were attractive for industry.
- Both onsite Trainings and Schools attracted participants from several countries out of SFERA (and even out of Europe)
- PhD students and supervisors enjoyed the DCs and some of the members (from the SolLab Alliance) decided to continue organizing them annually after the end of the SFERA project.

Non-confidential presentations at the Summer Schools and at Trainings for Industries are available on the project website (as well as the books of abstracts for the DCs) :

<https://sfera3.sollab.eu>



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Thank You

For Your Attention

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