Tuesday, 8 October 2024

9:00 AM - 10:30 AM

Auditorium

Opening Session

Tuesday, 8 October 2024

11:00 AM - 12:30 PM

Auditorium

Global Update on CST Technology, Market and Commercial plants

CSP in China
Zhifeng Wang

Australian CST Market and Policy Update
Dominic Zaal

10MWe Fresnel solar power plant with energy storage - Sharing 6 Years of experience with the ELLO plant
Florent Lecat

Deep Learning for Heliostat Digital Twins or How to Extract Everything from Focal Spots
Max Pargmann

1:45 PM - 3:15 PM

Auditorium

Italian CST Scenario

Tuesday, 8 October 2024

3:45 PM - 5:15 PM

Auditorium

CST for Industrial Decarbonization

Concentrated solar thermal energy for the heat transition - experience from the field
Joachim Krueger

DAWN, world’s first industrial solar fuel plant
Gianluca AMBROSETTI

Exciting developments at GlassPoint on large-scale process heat
Rod Mac GREGOR

TES for Industrial decarbonisation: research- market gap
Esther ROJAS BRAVO

Tuesday, 8 October 2024

5:15 PM - 6:30 PM PS_ComInt **Poster Session Tuesday - CSP Integration & commercial projects**	5:15 PM - 6:30 PM PS_SolCol **Poster Session Tuesday - Solar Collector Systems**	5:15 PM - 6:30 PM PS_SolFuel **Poster Session Tuesday - Solar Fuels**	5:15 PM - 6:30 PM PS_TES **Poster Session Tuesday Thermal Energy Storage**
More Efficient Heliostat Fields for Solar Tower Plants: The HELIOSUN Project **JESUS BALLESTRIN**	Closed Loop Controls Testing: Small-Scale Experiment and Single Heliostat Testing **Withdrawn** **Kenneth Armijo**	Design of a natural gas steam reforming process for hydrogen production powered by a Solar Furnace **Carmine Cancro**	Characterization of the welding zone in stainless steels used in CSP plants under static corrosion conditions with molten salts **Mauricio Lague**
Study of Solar Thermal Energy Utilization in Indian Cement Plants **Manoj Kumar Soni**	Development of a self-powered and wirelessly operating heliostat **Antonio Scafuri**	Continuous solar H2O and CO2 gasification of agricultural waste biomass for green syngas production **Srirat CHUAYBOON**	High performance Mn/Fe/Al co-doped calcium-based material for solar energy storage **Yanzhi Li**
Innovative integration of desalination into an air-based CR-CSP plant with Compressed Air Storage **Patricia Palenzuela**	Numerical Study on the Effect of Solar Tower System Configuration on Energy Utilization Factor **Indranil Paul**	Simplified Thermal Analysis of a Concentrated Solar Water-Splitting Photocatalytic System **Anthony Pellicone**	Thermal stability investigation of molten salt mixtures for CSP applications **Francesco Rovense**
Digital Twin Analysis of Solar Parabolic Trough Collector Plant for Integration into Electrical Distribution Network **Cagdas Akarsu**	Development and Commissioning of the LAVEC Test Facility for Medium-Scale Line-Focus Solar Collectors Evaluation **Loreto Valenzuela**	Enhancement of solar to hydrogen-rich fuel production integrating parabolic trough collectors with partially rotatable tracking strategies **Lizhuang Dou**	Synthesis, characterization and evaluation of a coal fly ash-based ceramic as a high temperature TES material for use in packed-bed thermal storage system **REDA CHATTAHY**
An Update on the Cost Comparison of Chemical and Thermal Storage for Power Generation in Namibia **Arno Pfohl**	Hall effect focus control system for vacuum-membrane solar dish facets **Duncan McGee**	Advancements in Solar Fuel Production through Solar Photoreactor and Collector Integration **Sarah Meitz**	Thermal Energy Storage Behaviour of 3D Ceramic Supports Infiltrated with Molten Salts Under Concentrated Solar Radiation **Manuel Belmonte**
A Methodology for Optimizing Design and Operation of CSP Plants Participating in Balancing Markets **Ana Sanchez Sanz**	Design and Development of a winch actuated heliostat **Rorisang Lekholoane**	Continuous solar hydrogen and syngas production in membrane reactors **Nicole Carina Neumann**	Effect of impurities on molten nitrate salts and corrosion **Pyoungchung Kim**

Central Receiver-Based CSP Plants: Trends and Categorization **Matteo Chiesa**	Angular Extent of the Heliostat Field for Maximum Optical Performance in Solar Tower System **Indranil Paul**	Waste biomass fast pyrolysis in a drop-tube reactor using concentrated solar power (CIRCULAR FUELS EU PROJECT) **Sylvain Rodat**	Phase-change-materials: efficient energy storage utilization of high-temperature waste heat with salt- ceramic materials **Philipp Ganninger**
CST Ecosystem Sociotechnical Outlook: Insights from Quadruple Helix Actors of EU countries and Turkiye **Hande Eryılmaz**	Heliostat Tracking Influence on Wind Pattern within a Real-Scale Heliostat Field **Marc Röger**	Optimization of reactor operation for hydrogen production via thermochemical cycles **Raúl Peño Mateos**	Design of Furnace for Thermo-Mechanical Analysis Using Molten Salts. **Sergio Ardila**
Designing a Holistic CST Policy Framework for the European Green Deal: Challenges and Opportunities from Social Sciences and Humanities Aspects with a Gender Inclusive Agenda **Yelda Erden Topal**	Development of a new PVt/PCM system for heating and power **Tugba Gurler**	Reactive redox metal oxide beads for a moving-bed solar thermochemical water splitting reactor **Yukino Nakahara**	MnSiO3 surface-modified Mn-based composite oxide thermochemical energy storage materials **Yan Huang**
Hydrogen production through renewable energies in areas of high irradiation conditions **Roberto Leiva-Illanes**	Technical, environmental and economic advantages of integrating a novel SHIP system into the powder-based coating process of steel tubes **Hadi Tannous**	2-step thermochemical conversion of CO2 using Novel Nd1-xSrxMnO3 perovskite **Khalid Al-Ali**	Mn and Al co-modified CaO as thermochemical composites for efficient solar energy storage **Fengyuan Chai**
Review of the Operational Phase of the South African Concentrated Solar Power Projects **Prinavin Perumal**		A Modular and Hybrid Photocatalytic Reactor for Continuous Hydrogen Production **Konstantinos Kakosimos**	Thermodynamics and Pressure Drop of a Two-phase Packed Bed Thermal Energy Storage. **Ana Inés Fernández**
Influence of size of Heliostats on LCOE of Solar power plant **NARAYANAN VENKATAKRISHNAN**		Development of a concentrating optics system for a photoelectrochemical (PEC) hydrogen reactor **Arend Moelich**	A simplified numerical model to study the thermal behavior of a cascade LHTES system **Daniele Nicolini**
Small Scale Solar Power Plant for Rural Electrification in India **NARAYANAN VENKATAKRISHNAN**		Volumetric Absorption of Direct and Indirect Radiation in Porous Redox Structures for Solar Fuel Production **Stefan Brendelberger**	Development of rice husk composite ceramic sphere with enhanced radiation heat transfer for high temperature **Shenghao LIAO**
HelioHub: The Greek-Turkish Solar Excellence Hub **Hande Eryılmaz**		Analysis of the solar heating integration in a liquid metal reactor for hydrogen production **Elisa Alonso**	Lift of High Temperature Particle **Zhihong Liu**

		Project HySelect: demonstration of efficient water splitting via a solar hybrid thermochemical cycle with sulphur dioxide depolarized electrolysis **Dennis Thomey**	Innovative salt hydrate for solar thermal heat storage **Emanuela Mastronardo**
		High concentration optical system for solar fuel production via cerium oxide thermochemical cycle **Alejandro González Silvestre**	Numerical Simulation to Investigate Thermal Stratification in an Energy Storage System under no-flow Condition. **Kapil Kumar**
		The MUSIC project: multi-tower small-scale CSP plants based on sCO2 cycles to provide dispatchable electricity and H2 production **Dario Alfani**	Development of a Packed Bed Thermal Energy Storage Digital Model **Luke McLaughlin**
		Power Density Limitation in High-Flux Solar Reactor for Dry Methane Reforming **Emeric Désilet**	Mechanisms of Welding Process for High Temperature Thermal Energy Storage Tanks for CSP **Mauro Henriquez**
		(Ca,Ce)(Ti,Mn)O3 Perovskites for Thermochemical Water/CO2 Splitting **Ivan Ermanoski**	Design and Testing of a 100 kW Compact Counter Flow Fluidized Bed Heat Exchanger **Nathan Schroeder**
		Solar-thermal Synthesis of Lithium Iron Phosphate for Li-Ion Battery Cathodes **Andrea Ambrosini**	Novel Organic Hydrated Salt based Mortars for Solar Heat Storage **Emanuele Previti**
		High-Fidelity Radiative Transport Modeling of Indirectly Irradiated Receiver Reactors **Henrik Haussmann**	Development of high solar absorptance coatings for particle based CSP systems and their performance in isothermal and thermocyclic conditions **Christoph Grimme**
			The Potential of Rehydration/Encapsulation Technique for Inorganic Wastes as Thermal Energy Storage Materials **Yanio Milian**

			Hot Corrosion and Mechanical Performance of Aluminide Coated Austenitic Steels **Pauline Audigié**
			Thermochemical Heat Storage Using Calcium Manganese Perovskite oxide for Next-generation CSP: Improvement of Reactivity and Working Temperature **Yuta Yaginuma**
			On the heat effects of calcium manganites for thermochemical energy storage in CSP plants **Alexandra Bakratsa**
			Developing a model for quantifying the heat losses from a molten salt thermal energy storage system **Mu-een Khan**
			An economic assessment of concentrating solar power technologies coupled with Carnot batteries **Rubén Abbas**
			Initial Development of a Flexible Upcycled Waste Material based Sensible Thermal Energy Storage for hybrid PV-CSP **Silvia Trevisan**
			Numerical Performance Analysis of Olivine, Sintered Bauxite and Ceramic Particles in a Packed Bed Thermal Energy Storage for High-Temperature Applications **Onur Taylan**
			Evaluation of the electrochemical corrosion resistance on high entropy alloys in contact with high-stability molten salt storage materials **Angel G. Fernández**

			Temperature measurement in microwave assisted solar salt heating **Cristóbal Valverde**
			High-Temperature Thermochemical Heat Storage System for Industrial Applications **Jaimy Gebbeken**
			Comparative LCA of TES-based Steam Production Systems for the Industrial Sector **Tanima Sharma**
			Experimental evaluation of the thermal insulation of a high temperature packed bed thermal energy storage prototype **Antonio Avila-Marin**
			Therma 4910 vs 347H for Molten Salt Tanks: Phase Evolution during Long-Term Ageing and Mechanical Properties **Theodore Vassi**
			Progress and Prospects of TES for Central Receiver-Based CSP Plants **Matteo Chiesa**
			Heat transfer in packed beds of crushed rocks **Eduard Fourie**
			Modelling and simulation of an innovative thermochemical continuous reactor in a parabolic trough collector plant **Francisco Cabello**
			TES model for Hybrid Energy System Analysis **Frikkie Botha**

			Calcium lactate/PDMS-based composite foams for thermochemical solar energy storage **Emanuele Previti**
			Characterization of a novel coating process to darken sand particles **Leonel Mario Cerutti Cristaldo**
			Thermal cycling test for Phase Change Materials **Mounia Karim**
			Improve Thermal Performance of Triplex Tube Latent Heat Thermal Energy Storage Unit with Fins and Metal Wool **Hussein Alawai Ibrahim Al-Saaidi**
			Performance evaluation of FBRs for TCES based on the CaO/CaCO3 and MnAl2O4/MnAl2O4-δ systems **Maria Anna Murmura**
			Modular Solar Drying and Thermal Energy Storage System Configuration Assessment **Ian Wolde**
6:45 PM - 8:15 PM **Welcome Reception**			

Wednesday, 9 October 2024

8:30 AM - 10:15 AM Pinninfarina **Analysis and Simulation of CSP and Hybridized Systems**	8:30 AM - 10:15 AM RoomQ **CSP Integration, Markets**	8:30 AM - 10:15 AM Room G **Solar Industrial Process Heat and Thermal Desalination**	8:30 AM - 10:10 AM Auditorium **Thermal Energy Storage**
8:30 AM - 8:50 AM Generic assessment model of hybrid solar systems **Miguel Sainz Mañas**	8:30 AM - 8:50 AM CST4ALL - Support to the Activities of the Concentrated Solar Thermal Technology Area of the SET Plan **Yelda Erden Topal**	8:30 AM - 8:50 AM Techno-economic Evaluation of Modular Concentrated Solar Calcination Plant for Cement Production **Eric Jin**	8:30 AM - 8:50 AM Innovative Thermal Energy Storage Materials Based on Molten Salts Fully Encapsulated into 3D Printed Patterned Clay Architectures **Manuel Belmonte**
8:50 AM - 9:10 AM ASGARD: The Development & Application of a Novel Hybrid Solar System Mode **Luke McLaughlin**	8:50 AM - 9:10 AM Current progress of activities at EU-SOLARIS ERIC: The European Research Infrastructure Consortium for CSP Technologies **Diego Manuel Martinez Plaza**	8:50 AM - 9:10 AM Concentrated solar heat to reduce carbon emissions of industrial chemical processes: the case of crude oil distillation **Alessandro Galia**	8:50 AM - 9:10 AM Macrocapsules with cast internal fins for enhanced heat transfer in latent thermal energy storage units **Anna Dmitruk**
9:10 AM - 9:30 AM Design and Operation of hybrid CSP-PV-Wind plants operating on the Italian Day-Ahead electricity Market and on the Ancillary Services Market **Lorenzo Pilotti**	9:10 AM - 9:30 AM Reducing Curtailment: Monte Carlo Simulations for CSP dispatch scenarios in Chile. **Cristóbal Parrado**	9:10 AM - 9:30 AM Decarbonizing Industrial Heat - A Comparison of Embodied Carbon for PV and Enclosed Parabolic Trough Systems **Markus Balz**	9:10 AM - 9:30 AM Numerical analysis on the state of charge of an ultra-high temperature latent heat energy storage system **Myrto Zeneli**
9:30 AM - 9:50 AM Optimal Design of Hybrid Solar Power Systems: A Case Study in the Chinese Market **Axel Schweitzer**	9:30 AM - 9:50 AM Hybrid CSP-PV System for Sustainable Energy in a Chilean Mine: A Case Analysis **Frank Dinter**	9:30 AM - 9:50 AM First Solar Thermal Energy Planner (STEP 1) Overview: A new decision support tool for solar industrial process heat applications. **Jeffrey Gifford**	9:30 AM - 9:50 AM Hybridization through ohmic heating of a cascade PCM-TES for a CSP plant **Anton Lopez-Roman**
9:50 AM - 10:10 AM Techno-economic assessment of solar hybrid system with high-temperature heat pump for industrial heat generation **Mateo Sanclemente Lozano**	9:50 AM - 10:10 AM Designing and Testing of A High-Temperature Particle Lift for Concentrating Solar Power Applications **Shaker Alaqel**	9:50 AM - 10:10 AM Hybrid Concentrated Solar Thermal and Wind Resistive Heating Systems as Key for Competitive Low Emission Industrial Process Heat Generation **Marco Colombi**	9:50 AM - 10:10 AM Modelling and experimentation of a full-scale adsorption zeolite-water heat storage for medium temperature CST applications **Roberto Gabbrielli**

Wednesday, 9 October 2024

10:45 AM - 12:45 PM RoomQ **Solar Collector Systems**	10:45 AM - 12:25 PM Room G **Advanced Materials, Manufacturing, and Components**	10:45 AM - 12:45 PM Auditorium **Thermal Energy Storage**	10:45 AM - 12:25 PM **Analysis and Simulation of CSP and Hybridized Systems**
10:45 AM - 11:05 AM An International Heliostat Consortium to Advance Next Generation CSP Technologies: the 2024 Progress Report **Guangdong Zhu**	10:45 AM - 11:05 AM Ageing of Alloy 625 Exposed Under Concentrated Wavelength-Filtered Solar Radiation for 300 hours **Noelia Estremera Pedriza**	10:45 AM - 11:05 AM Design Features and Material Selection Methodology of High-Temperature Particle-Based Thermal Energy Storage Bin **Hany Al-Ansary**	10:45 AM - 11:05 AM Real-Time PHIL Simulation of PV-CSP Plant Operation During Cloud Events **Michael Wagner**
11:05 AM - 11:25 AM Heliostat Consortium: Developing a Resource, Training, and Education Database **Rebecca Mitchell**	11:05 AM - 11:25 AM Solar ageing of advanced ceramic materials based on alumina and zirconia **Diego Martínez-Plaza**	11:05 AM - 11:25 AM Paths of Particle Thermal Energy Storage Integrated with Renewable Power and CSP **Zhiwen Ma**	11:05 AM - 11:25 AM Genetic algorithm optimization of a concentrating solar thermal plant with natural gas boiler backup for an industrial process **Valeria Russo**
11:25 AM - 11:45 AM Measurement of Wind loading on heliostats at the Crescent Dunes plant - an overview **Shashank Yellapantula**	11:25 AM - 11:45 AM Novel High-Temperature Boride Ceramic Solar Absorbers with Enhanced Photothermal Efficiency **Elisa Sani**	11:25 AM - 11:45 AM Design of Fluidized Bed Heat Exchangers for Particle-based CSP. A comparison of chemically inert and reactive particles **Gilles Flamant**	11:25 AM - 11:45 AM Sensitivity analysis of lifetime predictions for generation 3 particle-sCO2 heat exchangers **Christopher Bowen**
11:45 AM - 12:05 PM Dynamic Wind Loading of Heliostats **Andreas Pfahl**	11:45 AM - 12:05 PM Scalability Testing of Robotic-Deposited Coating on Commercial Receiver **Kaoru Tsuda**	11:45 AM - 12:05 PM Zigzag Flow Reactor for Extended Duration Thermochemical Energy Storage **Ivan Ermanoski**	11:45 AM - 12:05 PM Investigation of thermodynamic performances of particle/sCO2 fluidized bed heat exchanger integrated with sCO2 recompression Brayton cycle for concentrated solar power **Wenkai Cu**
12:05 PM - 12:25 PM Automated Heliostat Installation **Andreas Pfahl**	12:05 PM - 12:25 PM Optimization of 3D-Printed Hierarchically Ordered Structures exposed to Concentrated Solar Radiation **Sebastian Sas Brunser**	12:05 PM - 12:25 PM A top-down approach for designing a double layered radial-flow high-temperature packed bed TES **Konstantinos Apostolopoulos - Kalkavouras**	12:05 PM - 12:25 PM Comparative Techno-Economic Analysis of Molten Salt versus Particle-Based Hybrid PV-CSP Plants with Electric Heaters and sCO2 Power Blocks **Salvatore Guccione**

12:25 PM - 12:45 PM Heliostat Field Performance Testing Guideline - A Step Forward in the Measurement of Distributed Concentrator Systems **Marc Röger**		12:25 PM - 12:45 PM Indirect Single-Medium Thermocline Thermal Energy Storage with Electrical Resistances for Hybrid CSP-PV Solar Plants **Mattia Cagnoli**	

Wednesday, 9 October 2024

2:00 PM - 4:00 PM Pinninfarina **Analysis and Simulation of CSP and Hybridized Systems**	2:00 PM - 4:00 PM RoomQ **Solar Collector Systems**	2:00 PM - 4:00 PM Room G **Advanced Materials, Manufacturing, and Components**	2:00 PM - 4:00 PM Auditorium **Thermal Energy Storage**
2:00 PM - 2:20 PM Maintenance Optimization of Parabolic Trough Power Plants through a Lifetime Simulation Model Validated with Five-Years Operational Data **Sayra Andrea Gomez Garcia**	2:00 PM - 2:20 PM Digital Twin of Concentrated Solar Power Plants **Michel Izygon**	2:00 PM - 2:20 PM Diamond-based receivers for direct electricity and hydrogen production from concentrated sunlight **Alessandro Bellucci**	2:00 PM - 2:20 PM Molten chloride salt TES for next-generation CSP plants: R&D Progress in corrosion control and process upscaling **Wenjin Ding**
2:20 PM - 2:40 PM Comparative Techno-economic Analysis of Different Parabolic Trough CSP Plants for the Italian Market **Simona De Iuliis**	2:20 PM - 2:40 PM SunRing Heliostat: Mirror Array Optimization and Prototyping **Nathan Stegall**	2:20 PM - 2:40 PM Particle conveyance in a particle-driven CSP c oncept **Jan Baeyens**	2:20 PM - 2:40 PM Corrosion mechanisms of Fe- and Ni-based alloys in solar salt and mitigation strategies **Ceyhun Oskay**
2:40 PM - 3:00 PM Assessment of Self-Dispatch Strategy in a Concentrating Solar Power System: Impact Analysis on the Chilean Spot Electricity Market **Francisco Moraga**	2:40 PM - 3:00 PM Modeling Receiver Flux of Commercial Power Tower Concentrating Solar Power Plants Using Ray Tracing: Benchmark Cases for Validation and Comparison of Ray-Trace Tools **Rebecca Mitchell**	2:40 PM - 3:00 PM High Temperature Attrition Testing of Novel Coated Particles for Solar Tower Receivers **Ana Cleia González Alves**	2:40 PM - 3:00 PM PVD MAX-Phase Coatings for CSP applications **Katharina Beck**
3:00 PM - 3:20 PM Hedging risk in techno-economic assessment for CSP plants through synthesis of one-minute irradiance series **Armando Castillejo Cuberos**	3:00 PM - 3:20 PM HelioSliders: Novel Heliostat Field Design Approach based on Collision Analysis of Shadow Projections **Peter Schöttl**	3:00 PM - 3:20 PM Materials Development and Testing of Beam-Down Solar Tower Secondary Reflectors **Sophie Gledhill**	3:00 PM - 3:20 PM Enhancing the long-term solar absorptance of ceramic particles through spinel coatings by resonance acoustic mixer **Gözde Alkan**
3:20 PM - 3:40 PM Introducing FIVER: An Open-Source Tool to Simulate Heat Transfer in Participating Media and Arbitrary Geometries **Emiliano Casati**	3:20 PM - 3:40 PM Real-Time Optimization for Heliostats **Kenneth Armijo**	3:20 PM - 3:40 PM Standardization of Durability Tests and Life-time Estimation of Solar Reflectors **Florian Sutter**	3:20 PM - 3:40 PM Metallurgical slag as filler material for a molten-salt based thermocline storage concept **Nicole Knoblauch**

3:40 PM - 4:00 PM Optimization of Molten Salt-Based Hybrid PV-BESS-CSP Plants with Supercritical CO2 Cycles participating in Balancing Markets **Salvatore Guccione**	3:40 PM - 4:00 PM Materials Comparison for Reducing Heliostats Production Costs **Kenneth Armijo**	3:40 PM - 4:00 PM Design and Plasma Synthesis of Spectrally Selective Mirror Coatings for PV/CST Compact Hybridization **Amine MAHAMMOU**	3:40 PM - 4:00 PM Chemical interaction between sodium metal and molten nitrate salts **James Schneider**

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4:30 PM - 5:50 PM Pinninfarina **Analysis and Simulation of CSP and Hybridized Systems**	4:30 PM - 6:30 PM RoomQ **Solar Collector Systems**	4:30 PM - 6:50 PM Room G **Emerging Concepts**	4:30 PM - 6:30 PM Auditorium **Thermal Energy Storage**
4:30 PM - 4:50 PM Techno-economic analysis of a solar calciner for CO2 emissions reduction in the Chilean cement industry **Juan Sebastian Zuleta Marin**	4:30 PM - 4:50 PM A Non-Intrusive Optical Method: Field Test Campaign, Outdoor Test Facility and Commercial Readiness **Devon Kesseli**	4:30 PM - 4:50 PM Aplanatic secondary concentrators for solar towers **Håkon J. D. Johnsen**	4:30 PM - 4:50 PM Design and experimental testing of a radial packed bed for thermal energy storage using copper slags as the storage medium **Jose Cardemil**
4:50 PM - 5:10 PM Solar Parabolic Dishes for the Production of Solar Synthetic Fuels **Judit García-Ferrero**	4:50 PM - 5:10 PM Secondary Concentrator Design for Point Concentrating Systems **Thorsten Denk**	4:50 PM - 5:10 PM Hybrid Thermionic Concentrated Solar Generators **Daniele M. Trucchi**	4:50 PM - 5:10 PM Multi-criteria comparison of two different-nature fillers for high temperature sensible heat storage **Elisa Alonso**
5:10 PM - 5:30 PM A Comparative Analysis between Ceramic and Metallic Receiver Designs **Bipul Barua**	5:10 PM - 5:30 PM Validation of a novel fixed-focus parabolic trough collector for molten salt **Sonja Kallio**	5:10 PM - 5:30 PM Technical Analysis and Commercial Deployment of Modular Brayton Cycle CSP for 24x7 Electricity and Process Heat **Manuel Blanco**	5:10 PM - 5:30 PM Molten Salt Thermal Energy Storage with Refractory Bricks **Christian Odenthal**
5:30 PM - 5:50 PM System-level assessment of Green Hydrogen Production via SOEC-Solar Thermal Integration **Ignacio Arias**	5:30 PM - 5:50 PM A Combined High-Temperature Solar Receiver **Kai Wieghardt**	5:30 PM - 5:50 PM SHARP-sCO2: Solar Hybrid Air-sCO2 Power Plants - Development of Key Enabling Technologies **Rafael Guedez**	5:30 PM - 5:50 PM Industrial decarbonization objectives: experimental analysis of materials for thermal energy storage **Cristina Prieto**
		5:50 PM - 6:10 PM Storing Concentrating Solar Thermal Energy in Geological Thermal Energy Storage **Joshua McTigue**	5:50 PM - 6:10 PM Experimental Development of a Gas-Particle Trickle Flow Heat Exchanger and first Performance Analysis for Application in Concentrating Solar Tower Systems **Markus Reichart**

		6:10 PM - 6:30 PM A novel solar-assisted iron ore beneficiation process for green steelmaking: a techno-economic and emission analysis **Alfonso Chinnici**	6:10 PM - 6:30 PM Thermal Wave Flow Meter for Molten Salts Flow Measurements **Jan Skarohlid**
		6:30 PM - 6:50 PM Toward the exploitation of plastic wastes as C-sources to produce molten salt-based micro- and nano- dispersed fluid as novel heat transfer media **Claudia Prestigiacomo**	

Wednesday, 9 October 2024

6:30 PM - 7:30 PM **Poster Session Wednesday - Advanced Materials**	6:30 PM - 7:30 PM **Poster Session Wednesday - Artificial Intelligence**	6:30 PM - 7:30 PM **Poster Session Wednesday _ Linear Systems**
Test and Theoretical Analysis on the Lubrication of Ball Joints **JUN DONG**	Applying Heliostat Calibration Techniques on the Largest Open Data Set for Solar Tower Plants **Max Pargmann**	Enhancing the thermal efficiency of longitudinally finned parabolic trough solar receivers **Vinod Kumar**
Freeze casted ZrB2/MoSi2 ceramics in extreme environments under solar concentrated fluxes **Ludovic Charpentier**	Condition monitoring of flexible connectors in parabolic trough collectors based on AI methods **Sonja Kallio**	CFD study of Novel Parabolic Trough Receiver Configuration with Liquid Sodium as HTF **Mounia Karim**
Solar coating for evacuated receiver tubes of micro-PTC plant **Claudia Diletto**	How to benefit from AI and advanced optimisation in your CSP design **Manuel Quero**	Experimental Heat Losses in Hydrogen-Doped Parabolic Trough Receivers **Loreto Valenzuela**
Spinel Composition Optimisation for Improving Absorptance of Solar Particle Receivers **Gema San Vicente**	SOLAR THERMAL CONCENTRATED TOWER: FROM GIOVANNI FRANCIA (1911-1980) TO BILL GROSS (1958) **Cesare Silvi**	Experimental investigation of Direct Steam Generation for horizontal or slightly tilted Solar Receivers **Israel AGUILERA-CORTES**
New Infrared Reflectors for High Temperature Application in Concentrated Solar Power **Antonio D'Angelo**		Demonstration of Salt Dilution at Évora Molten Salt Platform **Michael Wittmann**
Durable, transparent and superhydrophobic coating on glass solar reflectors with temperature controlled dual-scale roughness by self-formed raspberry nanoparticles **Brahim Nomeir**		Numerical Investigation of a New Absorber for PTC using Tube Bundle Cavity Concept **Hossein Ebadi**
Development and testing of composite facets with 1mm mirrors **Guangdong Zhu**		Assessment of the Impact of Evacuation Loss at Different Segments of a Parabolic Trough Collector **Mattia Cagnoli**
Performance of Slurry Aluminide and Thermally Sprayed Ni-Cr-rich Coatings for High-Temperature CO2 Corrosion Resistance **Pauline Audigié**		Isobaric Density of Heat Transfer Fluids **Christian Jung**

Influence of Laser Texturing on CSP Receiver Coating Durability **Ana Drinčić**		Performance Improvement of Parabolic Trough Collector with Thermal Oil-Based Metal-Oxide Nanofluids **Levent Güner**
Utilising Pulsed laser-induced Coating Post-treatment to Produce Nanoparticles and Enhance Energy Conversion Efficiency **Ivan Jerman**		
Selection of glass alternative materials for manufacturing heliostat reflective facets **Jean Schnaar-Campbell**		
Outdoor testing of AlN based self-cleaning solar mirror prototypes **Anna Castaldo**		
From self-cleaning to self-aware solar mirror skin **Anna Castaldo**		
Numerical investigations and high temperature experiments in the 1000 K SOLTEC-1 sodium facility **Alexandru Onea**		
Coral-Structured Hierarchical Coating on Corrugated Substrate with Solar Absorptance Exceeding 98.4% **Juan Felipe Torres**		
Is the US ready for the next wave of CSP plants? **Ryan Shininger**		
SolPOC: a Python package for modelling the optical coatings used in solar thermal energy systems **Audrey Soum-Glaude**		
Large-Scale Production of Heliostats **Andreas Pfahl**		
NEWS4CSP Project - New coatings approaches to protect metallic materials from heat transfer fluids **João P. Cardoso**		

Current Activated Reactive Ultrafast Joining (CARUJ) of Materials for CSP **Bipul Barua**		

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6:30 PM - 7:30 PM **Poster Session Wednesday - Solar Resource Assessment**	6:30 PM - 7:30 PM PS_PointFocus **Poster Session Wednesday - Point Focus Systems**	6:30 PM - 7:30 PM PS_ProcessHeat **Poster Session Wednesday - Process Heat & Thermal Desalination**
Validation of Solar Extinction Model at Plataforma Solar de Almería **Jesús Ballestrín**	Preliminary analysis of low-cost trough solar simulator **Marta Laporte-Azcué**	Modelling of a Beam-down linear Fresnel receiver for gypsum β-hemihydrate production **J.V. BRIONGOS**
Two Approaches in Post-Processing of Solar Irradiance from Weather and Research Forecasting Model over Italy **Giampaolo Caputo**	Understanding the physical processes in strongly anisothermal turbulent flows inside solar receivers **Léa Cherry**	Portland Cement Clinker Production Driven by Concentrated Solar Energy Directly **Yan Wang**
Analysis of the variation in regional direct solar irradiance resource according to bias in the separation model **Myeongchan Oh**	CFD Investigation of Particle Temperature in Fluidised Bed Solar Receivers **Mustafa Alqudah**	Solar Heat for Commodity Production: Mapping and Comparison with Fossil Fuel and PV **Gkiokchan Moumin**
Data Development of National Standard Reference for Renewable Energy - Model-Based Typical Meteorological Year in South Korea **Boyoung Kim**	Experimental and numerical study of the thermal behavior of clips in concentrated solar tower receivers **Marta Laporte-Azcué**	Evaluating the Potential of Solar Heat Production for the Food and Beverage Industry in Cyprus from 2024 to 2035 **Juan Pablo Santana**
University of Seville Meteorological Station. An open source of high quality meteorological data. **Miguel Larrañeta Gómez-Caminero**	Design and Testing of a Commercial Scale Falling Particle Curtain Receiver Platform **Nathan Schroeder**	Parabolic Trough Collector (PTC) System for Process Heating and Cooling for Industrial facilities **Ahmet Lokurlu**
	Thermal Analysis of a Novel 100 kWth Solar Receiver Prototype through Coupled Numerical Modeling **Akbar Laksana**	Design of an Air-Fed PTC Solar Field Integrated with a Rock Bed-Based Thermal Energy Storage System **Antonio Cristaudo**
	Study of thermomechanical stresses in oxidized Fe-Cr-Al alloy **Thiane Ndiaye**	Concentrating solar collectors for Industrial process heat: case study in Algeria **mohammed laissaoui**
	Advancing thermo-structural study of volumetric air receivers in concentrated solar power plants **Masoud Behzad**	Simulation and Sensitivity Analysis of a Solar Driven Trigeneration System with Thermal Energy Storage **Spiros Alexopoulos**

	Development of a small punch test to evaluate liquid metal embrittlement susceptibility of 316L Stainless Steel in liquid sodium **Gaurav Vithalani**	Steam Production Process from Salt Water and Concentrated Solar Energy **Samuel JOST**
	Upscaling and testing of Air-based Rotary Solar Thermal Receivers for Concentrated Solar Power Applications **Pok-Wang Kwan**	Evaluation of a control-oriented model used to optimize the heat production of a parabolic trough solar plant **Eliott Girard**
	Efficiency Calculation and Experience from the Measurement Campaign of a Molten Salt Central Receiver **Reiner Buck**	Dynamic simulations of the SHIP200 system for the production of heat at 200°C and cold at -20°C **Valéry Vuillerme**
	3D-Printed solar cavity receiver for heating pressurized air - A preliminary evaluation **Ahmed Muhammad Azmeer**	A numerical analysis of localized heating on parallel flow direct contact membrane distillation **K. Ravi Kumar**
	Evolution of the Attachment of Large, Dome-Shaped Quartz Windows for Solar Receivers **Thorsten Denk**	Analysis of Energy, Economic, and Environmental Impacts of Various Solar Collectors Integrated with Adsorption Cooling Systems under Composite Climatic Zone in India **Shubha Deep Paul**
	CFD Study for a Sodium Receiver Designed for Additive Manufacturing **Joachim Fuchs**	Evaluation of Drying Characteristics of Orthodox Fermented Tea Particle Using Solar Dish Collector **SHANTANU KUMAR**
	Numerical prediction of the initial heating of granular material treatment using a solar rotary kiln **Elisa Alonso**	Cost-competitiveness of solar+storage systems for industrial process heat decarbonization in the US **Jeffrey Gifford**
	Active thermal insulation: a possible solution to reduce thermal inertia of cavity receivers **Simone A. Zavattoni**	Analyzing the Impact of Latent Thermal Storage on the Performance of a Solar Heat System in Two Industrial Processes **Mercedes Ibarra**
	Preliminary assessment of corrugated eccentric bayonet receivers for SPT plants **Rafael Pérez-Álvarez**	Dynamic Model Validation of a Novel Rotatory Fresnel Collector **Magdalena Barnetche**
	Opacity Measurement of Particle Curtain of Obstructed Flow Particle Heating Receivers **Rageh Saeed**	Assessment of Small-Scale Parabolic Trough Collectors for Integration in Industrial Process Heat **Francesco Rovense**

	Numerical Modelling and Empirical Validation of Thermal Efficiency in Periodic Lattice Configurations for Concentrated Solar Applications **Aidan McConnehey**	Atmospheric Water Generation (AWG) Systems Powered by Continuous Renewable Energy **Batool Khalaf**
		Precalciner Geometry Optimization Considering a H2O and CO2 Heat Transfer Fluid for Cement Production **Nathan Schroeder**
		Solar thermochemical heat transformers for industrial heating applications **Marco Ballatore**
		Estimation of industrial heat balance based on actual plant data: a case study for cement plant **Ian Wolde**
		Experimental Design for a Concentrating Solar Per- and Poly- fluoroalkyl Substances (PFAS) Abatement System **Jeremy Sment**
		Design and Testing of a High Temperature H2O/CO2 Reactor for Calcium Carbonate Calcination **Nathan Schroeder**
		A Techno-Economic Comparison of CSP and Conventional Cooking Technologies in West Africa **Mounia Karim**
		Numerical Modelling of a Solar Thermochemical Heat Transformer for Industrial Heating Applications **Ramin Roushenas**
		Optimizing Solar Thermal and Electrical Output through a Hybrid Fresnel Lens and TEG System **Abdullah Alrwili**
7:30 PM - 10:15 PM **Gala Dinner**		

Thursday, 10 October 2024

8:30 AM - 10:15 AM Pinninfarina **Analysis and Simulation of CSP and Hybridized Systems**	8:30 AM - 10:15 AM Room G **Measurement Systems, Devices, and Procedures**	8:30 AM - 10:30 AM RoomQ **Solar Resource Assessment**	8:30 AM - 10:10 AM Auditorium **Thermal Energy Storage**
8:30 AM - 8:50 AM A Methodology for Design and Optimization of a PCM Thermal Energy Storage Cascade for Hybrid PV-CSP Plants with sCO2 Cycles **Salvatore Guccione**	8:30 AM - 8:50 AM Parabolic-trough collector cleanliness factor considering concentrator and receiver-tube soiling **Elena Carra**	8:30 AM - 8:50 AM The CAMS service evolution with focus on solar resources and solar forecasting for concentrating solar technologies **Marion Schroedter-Homscheidt**	8:30 AM - 8:50 AM Experimental and Computational Validation of a Novel Particle Flow Control Valve for CSP Systems **Sheharyar Malik**
8:50 AM - 9:10 AM Hybrid CSP-TES-PV-Battery System Modeling Intercomparison and Case Study **Salvatore Guccione**	8:50 AM - 9:10 AM Drone-Based Quantification of Soiling Losses for Parabolic-Trough Collector Plants **Rone Yousif**	8:50 AM - 9:10 AM Best Practices Handbook for Solar Resource Data: Overview of the Fourth Edition **Stefan Wilbert**	8:50 AM - 9:10 AM Evaluation of Alternative Base Materials for Mitigation of Stress Relaxation Cracking in Thermal Energy Storage Tanks **Timothy Pickle**
9:10 AM - 9:30 AM Operation of CSP and hybrid PV-CSP plants including high and low temperature PTES **Antonio Rovira**	9:10 AM - 9:30 AM Comparison of the soiling effect among heliostats, parabolic-trough collectors and fixed reflectors **Elena Carra**	9:10 AM - 9:30 AM Comparison of Operational Yield Assessments to Pre-Construction Energy Yield Assessments for CSP Plants **Liz Mubari**	9:10 AM - 9:30 AM Hybridized Thermal Energy Storage Pilot Plant **Rafael Pérez Santana**
9:30 AM - 9:50 AM Water and carbon footprint for two condensing configurations for a solar thermal power plant **María Asunción Palmero González**	9:30 AM - 9:50 AM Innovative Autonomous Soiling Sensor for Optical Surfaces **Johannes Wette**	9:30 AM - 9:50 AM Integration of a Physics-Based DNI Model to Enhance the National Solar Radiation Database (NSRDB) **Yu Xie**	9:30 AM - 9:50 AM A Lab-Scale Experimental Device to Study the Microwave Heating of Solar Salt for Thermal Energy Storage Applications **Mattia Cagnoli**
9:50 AM - 10:10 AM Hydrogen production by means of small-scale multi-tower CSP plants based on sCO2 power cycles and Solid Oxide Electrolysers **Simone Girelli**	9:50 AM - 10:10 AM Improved Colour Image Processing for Heliostat Soiling Estimation **Charles-Alexis Asselineau**	9:50 AM - 10:10 AM Aerosol Influence on Concentrating Solar Systems: Experience at Plataforma Solar de Almería **JESUS BALLESTRIN**	9:50 AM - 10:10 AM Increasing the collaboration on Thermal Energy Storage Systems in SolarPACES TCP **Esther Rojas**

		10:10 AM - 10:30 AM Optimization of Hybrid Renewable Energy System Incorporating Heliostats with Thermal Energy Storage, PV and Battery Storage for Enhanced Energy Flexibility and Reliability **Maklewa Agoundedemba**	

Thursday, 10 October 2024

10:45 AM - 12:45 PM Pinninfarina **Point Focus Systems**	10:45 AM - 12:45 PM Room G **Measurement Systems, Devices, and Procedures**	10:45 AM - 12:45 PM RoomQ **Solar Fuels and Chemical Commodities**	10:45 AM - 12:45 PM Auditorium **Thermal Energy Storage**
10:45 AM - 11:05 AM Design, Construction Progress, and Cold Commissioning of the Gen 3 Particle Pilot Plant (G3P3) **Jeremy Sment**	10:45 AM - 11:05 AM Improvements in Optical Surface Measurement Using Reflected Computer Vision Targets **Devon Kesseli**	10:45 AM - 11:05 AM Hydrogen Production Through Thermochemical Cycles: Results and Improvements of the Hydrosol-Beyond Facility **Alfonso Vidal**	10:45 AM - 11:05 AM Improving the solar absorption of limestone particles in calcium looping processes for thermochemical energy storage in fluidized beds **Francesca Di Lauro**
11:05 AM - 11:25 AM Ground Testing of the Generation 3 Particle Pilot Plant Falling Particle Receiver **Nathan Schroeder**	11:05 AM - 11:25 AM Advanced Drone-based Alignment Measurements for Parabolic Trough Collectors **David Helten**	11:05 AM - 11:25 AM Thermochemical hydrogen production using beam-down solar concentrator and fluidized bed reactor **Mike Collins**	11:05 AM - 11:25 AM Continuous Reactor for Effective Heat Harvesting from Thermochemical Energy Storage Media **Juve Ortiz-Ulloa**
11:25 AM - 11:45 AM Modular Particle Curtain Generating Valves for Commercial Fallin Particle Receivers **Nathan Schroeder**	11:25 AM - 11:45 AM Fast Optical Receiver Surface Characterization - Application on Cylindrical Solar Tower Receivers **Gregor Bern**	11:25 AM - 11:45 AM Solar Thermochemical Hydrogen Production using Nonstoichiometric Oxides; Modeling the Oxidation Step **Francesco Orsini**	11:25 AM - 11:45 AM Numerical Simulation of Redox Oxides-Based Thermochemical Energy Storage Reactors for Concentrated Solar Power (CSP) Generation **Zhen Cao**
11:45 AM - 12:05 PM Commissioning and first operation experience of the HEHTRES CentRec® receiver and the solar high temperature particle test facility **Luka Lackovic**	11:45 AM - 12:05 PM 3D-shape Measurement of Parabolic-Trough Panels: Outlook of SFERA-III Round Robin Results **Marco Montecchi**	11:45 AM - 12:05 PM H2 production by the solar HyS cycle: process analysis of the HySelect demo-plant **Michela Lanchi**	11:45 AM - 12:05 PM Reducing Thermal Loads in Tanks by Controlling Salt Flow Through Sparger Design **Bruce Leslie**
12:05 PM - 12:25 PM Techno-Economic Optimization of Falling Particle Receivers for Solar Tower Plants **Filip Sobic**	12:05 PM - 12:25 PM Simplified Set-up for Near-Specular Solar Reflectance Measurement **Marco Montecchi**	12:05 PM - 12:25 PM CST-assisted Solid Oxide Electrolyzer for managing renewable electricity and green H2 production **José González-Aguilar**	12:05 PM - 12:25 PM Microwave-assisted dynamic systems for solar salt heating: design optimisation through numerical simulation **Cristóbal Valverde**
12:25 PM - 12:45 PM Impacts of Particle Flows on Heat Transfer and Flow Stability in Finned Fluidized Beds **Keaton Brewster**	12:25 PM - 12:45 PM Solar Near-Specular Reflectance Measurement of Alternative Reflector Materials **Johannes Wette**	12:25 PM - 12:45 PM Thermo-electrochemical Syngas and Hydrogen **Ivan Ermanoski**	12:25 PM - 12:45 PM Design and set up of a high-temperature lead (Pb) loop for component testing **Klarissa Niedermeier**

Thursday, 10 October 2024

2:00 PM - 4:00 PM Room G **Analysis and Simulation of CSP and Hybridized Systems**	2:00 PM - 4:00 PM RoomQ **Solar Fuels and Chemical Commodities**	2:00 PM - 4:00 PM Auditorium **Thermal Energy Storage**	2:00 PM - 4:00 PM **Point Focus Systems**
2:00 PM - 2:20 PM Integrated combination of concentrating solar thermal technologies and photovoltaics - the bifacial PV-Mirror **Moritz Ruhwedel**	2:00 PM - 2:20 PM Thermal and Mechanical Modeling of an Uncooled Indirectly Irradiated SiC Thermochemical H2 Reactor **Remo Schäppi**	2:00 PM - 2:20 PM Assessing the variability of specific heat capacity on PBTES performance: probabilistic and thermal modelling **José Miguel Cardemil**	2:00 PM - 2:20 PM MW-Scale Demonstration of Fluidized Particles as Heat Transfer and Heat Storage Medium **Alex Le Gal**
2:20 PM - 2:40 PM LCOE Reduction by Use of Concentrating PV to Convert Spillage in Solar Particle Receivers **Reiner Buck**	2:20 PM - 2:40 PM Techno-economic analysis of a liquid metal thermo-electrochemical water splitting cycle **Alberto de la Calle**	2:20 PM - 2:40 PM Structural Materials for a liquid metal High Temperature Thermal Energy Storage **Alfons Weisenburger**	2:20 PM - 2:40 PM A Scalable Light-Trapping Enclosed Receiver for Gen3 Particle CSP and Thermochemical Processes **Zhiwen Ma**
2:40 PM - 3:00 PM Multi-flow particle receiver model for system optimization **Ahmed Mohamed**	2:40 PM - 3:00 PM Technoeconomic analysis of a solar thermochemical fuel production process using a packed-bed redox reactor **Alon Lidor**	2:40 PM - 3:00 PM High Temperature Thermochemical Storage: Lab-Scale Experimental Set-Ups. **annarita spadoni**	2:40 PM - 3:00 PM Experimental Investigation of the Influence of Micro-Cavities on the Effective Solar Absorptance of Particulate Material Curtains **Rageh Saeed**
3:00 PM - 3:20 PM Techno-economic Analysis on Optimum Size of A Heliostat for High Temperature Applications **Kenneth Armijo**	3:00 PM - 3:20 PM Electrically assisted thermochemical reduction of CeO2 **Alicia Bayon**	3:00 PM - 3:20 PM Development and Demonstration of a Bubbling Fluidized Bed Particle-Supercritical Carbon Dioxide Plate-Fin Heat Exchanger with Particle-Side Fin **Jesse Fosheim**	3:00 PM - 3:20 PM Inverse Heat Transfer Analysis for Estimating Temperature and Heat Flux in Solar Tower Receivers **Vahid Safari**
3:20 PM - 3:40 PM Characterisation of the wind convection losses in plain and ribbed tubes of solar central receivers via tube-resolved CFD simulations **Jose Martin Martinez**	3:20 PM - 3:40 PM Thermodynamic limits of redox-based thermochemical processes **Alon Lidor**	3:20 PM - 3:40 PM The Integration of sCO2 Turbomachinery into the G3P3 CSP Test Facility **Luke McLaughlin**	3:20 PM - 3:40 PM CFD analysis of an open volumetric air receiver and comparison with a 300 kWth solar receiver tests **Antonio Avila-Marin**

3:40 PM - 4:00 PM Modeling Thermochemical Energy Storage in a Solar Power Tower plant: Dynamic simulation **Alberto de la Calle**	3:40 PM - 4:00 PM Dry Redox Reforming: Bridging Pathways for Solar Fuel Production **Mario Zuber**	3:40 PM - 4:00 PM JCA Eni ENEA Project: CSP & Thermal Storage **Raffaele Liberatore**	3:40 PM - 4:00 PM Heat Transfer Analysis of a SiC Monolith as Solar Receiver with Lab and Simulation Data **Konstantinos Kakosimos**

Thursday, 10 October 2024

4:30 PM - 6:30 PM Pinninfarina **Point Focus Systems**	4:30 PM - 6:30 PM Room G **Receivers - Linear Systems**	4:30 PM - 7:10 PM RoomQ **Solar Fuels and Chemical Commodities**	4:30 PM - 6:30 PM Auditorium **Solar Industrial Process Heat and Thermal Desalination**
4:30 PM - 4:50 PM Passive shielding of high flux in concentrating solar applications **Joe Coventry**	4:30 PM - 4:50 PM Solubility of Gases in Heat Transfer Fluids **Christian Jung**	4:30 PM - 4:50 PM Solar-driven Biomass Pyrolysis for Negative-Emission Biofuels Production **Marco Binotti**	4:30 PM - 4:50 PM Developments in Solar Heat Applications **Dirk Krüger**
4:50 PM - 5:10 PM Convective Losses from Rotating Cavity Receivers **Onur Polat**	4:50 PM - 5:10 PM Improving Performance of Hydrogen Extraction at Nevada Solar One **David Helten**	4:50 PM - 5:10 PM Continuous Solar Iron Oxide Reduction with Agricultural Bio- Waste for Green Iron and Sustainable Syngas Production **Srirat CHUAYBOON**	4:50 PM - 5:10 PM Evaluation of Flow Patterns for Direct Steam Generation **Navina Konz**
5:10 PM - 5:30 PM On the accuracy and computational load of fast 1D models for solar receiver parametric studies **Carmine Sabia**	5:10 PM - 5:30 PM Experimental study of freezing and melting dynamics of molten salts in evacuated and non-evacuated receiver tubes **Valeria Russo**	5:10 PM - 5:30 PM Integrating solar-driven biomass gasification and PV-electrolysis for sustainable fuel production **Yu Xin**	5:10 PM - 5:30 PM Co-generation of steam and hot water: Effective integration of solar collectors in a brewery **Puneet saini**
5:30 PM - 5:50 PM Advanced microchannel radial receivers for the economic feasibility of solar thermal power plants **David D'Souza**	5:30 PM - 5:50 PM Results of the SFERA III Round Robin for Heat Loss Testing on Parabolic Trough Solar Receivers **Benedikt Kölsch**	5:30 PM - 5:50 PM Solar Heated Ethane Dehydrogenation to Produce Ethylene **H. Evan Bush**	5:30 PM - 5:50 PM Solar Steam with Thermal Energy Storage for Renewable Fuel Production **Philip Gleckman**
5:50 PM - 6:10 PM Spillage Recovery Devices for High Temperature Air-based Solar Thermal Receivers **Augustin Wambersie**	5:50 PM - 6:10 PM Numerical investigation of two-phase flow in DSG solar receivers: An Euler-Euler modelling approach **Israel AGUILERA-CORTES**	5:50 PM - 6:10 PM Calcination/Carbonation of Calcarenite in a Solar Fluidized Bed Autothermal Reactor **Stefano Padula**	5:50 PM - 6:10 PM Power-to-Heat Thermal Energy Storage for Hybrid CST: Magaldi Solid Particles Fluidized-Bed System **Fulvio Bassetti**
6:10 PM - 6:30 PM Geometrical parameters comparison in wire mesh absorbers for solar tower technology **Antonio Avila-Marin**	6:10 PM - 6:30 PM Experimental investigation of a carbon-based direct absorption parabolic trough solar collector **Miguel Sainz Mañas**	6:10 PM - 6:30 PM Integration of Direct Air Capture and Solar Methanol Production: Economic and Environmental Analysis **Enric Prats-Salvado**	6:10 PM - 6:30 PM Development of Sulfur Thermal Energy Storage for Solar Industrial Process Heat **Parker Wells**

		6:30 PM - 6:50 PM Thermodynamic analysis and first experimental study of solar vacuum pyrolysis of lunar regolith for oxygen production **Jack Robinot**	
		6:50 PM - 7:10 PM Efficient Oxygen Exchange and Performance of Fe-Substituted Cobalt-Based Perovskites for Solar Thermochemical CO2 Splitting **Liuqing Yang**	

Thursday, 10 October 2024

6:30 PM - 7:30 PM **Poster Session Thursday - Analysis and Simulation**	6:30 PM - 7:30 PM **Poster Session Thursday - Emerging Concepts**	6:30 PM - 7:30 PM **Poster Session Thursday - Measurement Systems**
Simulation of a hybrid Concentrated Solar and biomass-fuelled trigeneration system for residential applications **Luca Cioccolanti**	Innovative Integration of Compressed Air Energy Storage (CAES) with High-Temperature Concentrated Solar Power (CSP): A Comprehensive Use-Case Study in Spain **Rubén Garayoa**	Characterization of thermophysical properties of molten salts used in CSP plants using the dT-history method. **Grover Viracochea**
Optical design and analysis of a solar crucible **Daniela Fontani**	Glass Fresnel Lenses for Concentrating Solar Power **Luigi Fornari**	Evaluation of small torsion angles in parabolic trough collectors **Elena Carra**
GIS-Based Multi-Criteria Decision Analysis of Site Selection for CSP Plants in Chile **Francisco Moraga**	Mobile Heliostats in Swarms **Luis F. González-Portillo**	Characterization of the Mirrors' Reflectance of a Linear Fresnel Solar Collector **Jorge Payá**
Cellular automaton model for corrosion prediction in thermal storage systems with molten salts in CSP plants **Juan Reinoso-Burrows**	Design of an Improved Electric Particle Heater for CSP Applications **Luke McLaughlin**	SOFAST 2.0: Open-Source Deflectometry for CSP **Randy Brost**
Linear Fresnel Ray Tracing Analysis: Southern Italy Plant Optimization through FresnelSim Software **Samuele Memme**	Freeform optics: a high power beamdown tertiary optics for the largest solar furnace on Earth **Emmanuel Guillot**	Hybrid Deflectometry **Randy Brost**
Design, Simulation and Sensitivity Analysis of the National Solar Thermal Research Demonstration facility in Gwalpahari **Spiros Alexopoulos**		High-Resolution Flux Measurement for High-Flux Solar Simulators **Richard Felsberger**
Design and Optimisation of a Modular PV-CSP Hybrid Plant **Benjamin Gardiner**		Scaled Up Particle Mass Flow Measurement Design for Particle-Based CSP Using Slotted Flow Bin **Hendrik Frederik Laubscher**
Numerical investigation of Triply Periodic Minimal Surfaces for high-temperature solar receivers **Hossein Ebadi**		Challenges and approaches in flux measurement and simulation for high-flux solar simulators **Dmitrij Laaber**

A Novel Indoor Approach of Artificial Soiling Deposition: Achieving Desired Soil Density, Uniformity **Mounia Karim**		Optical Fiber as Solar Radiation Collector for Radiometric Measurements **Manuel Jerez**
Investigation on the Injection of Exhaust Air into Cavity Receivers **Aidan McConnehey**		Flowability and Attrition Characterization in Generation 3 Particle CSP Media **H. Evan Bush**
Correction Factors for Modeling Start-up Behavior of Process Heat Plants **Magdalena Barnetche**		Enhanced On-Site Characterization of Heliostat Surface via Direct Calculation of Reflected Beam's Normal Vectors **Kontxi Isabel Aginaga Etxamendi**
Coupled optimization of solar field and receiver geometry and thermal/hydraulic design **Tom Todtenhaupt**		Opto-electronic sensor for HTF early leak detection based on infrared absorption **Marcelino Sánchez**
CFD study on a breadboard receiver with insert structure and sodium as heat transfer medium **Michael Böttcher**		Review of Alternative Soiling Assessment Techniques **Charles-Alexis Asselineau**
Design and Optimization of a Molten Salt Electrical Heater for Hybridization-CSP Plants Applications **Hussein Alawai Ibrahim Al-Saaidi**		Torque in the Rotation Axis of a Parabolic Trough Solar Collector due to Wind Loads **Loreto Valenzuela**
Model Coupling Tool using Functional Mock-Up Interface for an Optimal Design of CSP-PV Hybrid Plants **Ruben Garayoa**		Data Acquisition for Condition Monitoring of Flexible Pipe Connectors in the Solar Field **Sonja Kallio**
Hybridization of Concentrated Solar Power with Wind and PV to Meet the Self-Consumption Requirements **José A. López-Álvarez**		Digital Interferometry Measurement of Thermal Conductivity of Solar Absorber Coatings **Juan Felipe Torres**
Towards the development of a simplified mathematical approach for modelling the thermo-hydraulic behaviour of a volumetric solar absorber according to a topological optimization process **Augustin de la Vauvre**		Soiling measurement characterisation system over a PV solar field in the southern Spain **Joaquín Alonso-Montesinos**
Evaluation of Optimal Solutions for a Hybrid CSP-PV System with an Electric Heater in Series: A TOPSIS Analysis Considering Cost Uncertainties **Rafael Fornés**		Optical and tracking quality of the ATH146 Heliostat driven by computational optimization algorithm **Antonio Ávila**

Application of Molten Salt Electrical Heaters to Increase the Flexibility of CSP Plants' Power Block **Eylül Gedik**		Gen3 CST Heat Flux Measurements: The Characterization of a High Heat Flux Gardon Gauge **Luke McLaughlin**
Multi-tower solar field hybridizing concentrating photovoltaic cells and thermal receiver **Alicia Crespo**		Measuring, Tracking, and Reporting Reflectance Metrics for Solar Mirrors **Devon Kesseli**
Design Data for Alloy 282 High Temperature Concentrating Solar Power Components **Bipul Barua**		
System Advisor Model (SAM) Improvements for Emerging Solar Thermal Applications **Ty Neises**		
A Parametric Analysis of the Low Pressure Level on the sCO2-Based Power Block of a CSP for Integrating a Low Temperature PTES **Antonio J. Subires**		
Valorisation of Agri-Food Waste using Concentrated Solar Energy and Thermal Energy Storage: A SolarHub Approach **Charikleia A. Poravou**		

Thursday, 10 October 2024

6:30 PM - 7:30 PM **Poster Session Thursday - Operations and Maintenance**	6:30 PM - 7:30 PM **Poster Session Thursday - Power Cycles**
Design and Operation Alternatives to Improve Reliability of Molten Salt Thermal Energy Storage Tanks for Central Receiver Concentrating Solar Power Plants **Julian Osorio**	Numerical platform for the selection of zeotropic mixtures for Rankine cycles **Rodrigo Barraza**
Controller Tests for Molten Salt Parabolic Trough Systems with Loop-Wise Control Valves **Tim Kotzab**	Experimental assessment of combined cooling systems for water consumption reduction **Aránzazu Fernández-García**
Design and Testing of a Fluidized Bed Trim Heater **Nathan Schroeder**	Supercritical Carbon Dioxide Power Cycle Designs for Particle Concentrating Solar Power **Ty Neises**
Developing the Guideline for Testing of Flexible Pipe Connectors **Eckhard Luepfert**	Dynamic Simulation of CSP Plants' Power Block **Eylül Gedik**
Performance Assessment of an Industrial Scale Molten Salts Electric Heater **Silvia Trevisan**	Impact of site-related solar resource and ambient temperature conditions on optimizing particle-based CSP plant using supercritical CO2 Brayton cycle **José González-Aguilar**
Operation and Lessons Learned from the Flexible and Modular Molten Salts based Heatcube® **Silvia Trevisan**	
Falling Particle Receiver Mass Flow Control for Dynamic Disturbance Rejection **Nathan Schroeder**	
Erosion Effect in the Degradation of Coated and Uncoated Glass Solar Mirrors Highlighted by Coupled Accelerated Erosion/Aging Tests **Sanae Naamane**	
Site-specific Cost Forecasting for Mirror-washing Operations at Concentrating Solar Thermal Plants **Giovanni Picotti**	
Experimental Analysis of Thermal Stress from Cloud Transients on Molten Salt Receiver Tubes **Walter Gaggioli**	
Analysis of solar molten salt parabolic plant operations during the commissioning period **Walter Gaggioli Gaggioli**	

How to minimize the scratches produced by brush cleaning trucks on the solar reflectors **Aránzazu Fernández-García**	
Geometric Characterization of Flexible Film Mirrors Parabolic Trough Collectors by 3D Scanning and Receiver Tube Image Analysis **Jonas Rafael Gazoli**	
Transient Design Methods in Advanced Solar Thermal System **Kurt Drewes**	
Operation and Control of a Small-Scale Skip-Hoist Particle Lift Suitable for Particle-Based Concentrated Solar Power Systems **Hany Al-Ansary**	
Exergy-based Cross Over Salt Tank Protection **Fabio Aste**	
Erosion Effect in the Degradation of Coated and Uncoated Glass Solar Mirrors Highlighted by Coupled Accelerated Erosion/Aging Tests **Sanae Naamane**	

Friday, 11 October 2024

8:30 AM - 10:15 AM RoomQ **Advanced Materials, Manufacturing, and Components**	8:30 AM - 10:15 AM Auditorium **CSP Integration, Markets**	8:30 AM - 10:15 AM Room G **Measurement Systems, Devices, and Procedures**	8:30 AM - 10:15 AM Pinninfarina **Operations and Maintenance 1**
8:30 AM - 8:50 AM Enhancement of compressive strength of perovskite foams used for thermochemical energy storage **Mathias Pein**	8:30 AM - 8:50 AM Decarbonizing the Western U.S. Grid with CSP: An update on the findings of the CalCSP Study **Hank Price**	8:30 AM - 8:50 AM Test Device Development for Evaluating Mechanical Performance of Ball Joints in Parabolic Trough Solar Collector **Chuncheng Zang**	8:30 AM - 8:50 AM Salt Tank Testbed: a Test Site Designed to Replicate Floor Buckles Observed in Commercial TES Tanks **Luca Imponenti**
8:50 AM - 9:10 AM Performance Evaluation of Molten Nitrate Salt Components at 620°C: Insights from Commissioning and Experimental Trials **Freerk Klasing**	8:50 AM - 9:10 AM Analysis of Ground Screws for Low-Cost Heliostat Installations **Kristina Ji**	8:50 AM - 9:10 AM Validation of an Advanced Heliostat Characterization System with Short-Focal Heliostats for High-Temperature Processes **Marina Sevilla**	8:50 AM - 9:10 AM Advanced Molten Halide Salt Valves Operation Demonstration **Kenneth Armijo**
9:10 AM - 9:30 AM ENEA Progress in the Development of Solar Coatings for Receiver Tubes at High Temperature **Salvatore Esposito**	9:10 AM - 9:30 AM Designing an Integrated CSP-SOE System for Hydrogen Production **Abdullah Ayed Alrwili**	9:10 AM - 9:30 AM Acceptance of a solar field made of small-size PTC applying to standard ISO 24194 **Fabienne Spain)**	9:10 AM - 9:30 AM Molten Salt Electric Heaters: Lessons Learned from DLR's TESIS Facility and Intensive Prototype Tests **Marco Prenzel**
9:30 AM - 9:50 AM Application of the small punch test techniques to the investigation of the mechanical behaviour of candidate materials for particle/s-CO2 heat exchangers **REBECA HERNANDEZ PASCUAL**	9:30 AM - 9:50 AM Demonstration of a Proof-of-Concept Integrated Skip Hoist-Thermal Energy Storage System **Hany Al-Ansary**	9:30 AM - 9:50 AM OpenCSP: Collaborative Code and Data For CSP **Randy Brost**	9:30 AM - 9:50 AM Advancements in Failure Analysis Techniques for Concentrated Solar Power (CSP) Systems **Sanae Naamane**
	9:50 AM - 10:10 AM From Global to Local: Learning from Worldwide CSP Successes to Drive Chile’s Solar Power Industry Forward **Carlos Felbol**	9:50 AM - 10:10 AM Real-TImE 3DT: Real-time Image Enhanced Data-Driven Digital Twin **Sergio Díaz Alonso**	9:50 AM - 10:10 AM Best Practice for Rankine Cycle Components of Concentrated Solar Power Plants **Steven Kung**

Friday, 11 October 2024

10:45 AM - 12:45 PM RoomQ **Artificial Intelligence**	10:45 AM - 12:45 PM Auditorium **Solar Industrial Process Heat and Thermal Desalination**	10:45 AM - 12:45 PM Room G **Power Cycles**	10:45 AM - 12:45 PM Pinninfarina **Operations and Maintenance 2**
10:45 AM - 11:05 AM AI-based Generative Geometrical Design of Concentrated Solar Thermal Tower Receivers **Jorge Moreno García-Moreno**	10:45 AM - 11:05 AM Customising Linear Fresnel receivers to industrial processes **María José Montes**	10:45 AM - 11:05 AM Experimental research of the world's first 200kW sCO2-CSP plant **Feng Hu**	10:45 AM - 11:05 AM A Rollout Cleaning Schedule Heuristic for Solar Fields **Cody B. Anderson**
11:05 AM - 11:25 AM Scalable Digital Twin of Solar Tower Power Plants using AI-enhanced Differentiable Raytracing **Marlene Busch**	11:05 AM - 11:25 AM Techno-economic Comparison Between the Parabolic Trough Collector and a Novel Rotatory Fresnel Collector **Magdalena Barnetche**	11:05 AM - 11:25 AM Optimizing CO2-mixture based power cycles for CSP applications: A multi-objective approach **Balkan Mutlu**	11:05 AM - 11:25 AM A Novel Concentrating Solar Weathering Apparatus for Experimental Validation of Multi-Modal Degradation Models **Devon Kesseli**
11:25 AM - 11:45 AM A Detailed Solar Field Model for a Parabolic Trough Plant Training Simulator **Michael Wagner**	11:25 AM - 11:45 AM Installation and start-up of two modular rotary collectors for SHIP: first experimental results **Ruben Abbas**	11:25 AM - 11:45 AM Preliminary design of S-CO2 turbomachinery and its influence on the performance of an integrated solar combined cycle **Eva Arenas**	11:25 AM - 11:45 AM Reflectance Losses Assessment and Characterization for an Operating Solar Power Plant in Australia **Giovanni Picotti**
11:45 AM - 12:05 PM Data-driven Heliostat Models for Flux Prediction in Solar Tower Plants **Mathias Kuhl**	11:45 AM - 12:05 PM Innovative ZLD desalination process for minerals recovery using solar and geothermal energy **Kristofer Poirier**	11:45 AM - 12:05 PM Modeling and energetic analysis of a supercritical carbon dioxide sCO2 recompression-organic Rankine cycle integrated to a central tower receiver. **Jesus Alberto Moctezuma Hernandez**	11:45 AM - 12:05 PM Results from the 5G communication network at the Solar Tower Jülich **Peter Schwarzbözl**
12:05 PM - 12:25 PM Inverse Deep Learning Raytracing **Jan Lewen**	12:05 PM - 12:25 PM Road-map of Standardization for Concentrating Solar plants in Industrial Processes **Fabienne Sallaberry**	12:05 PM - 12:25 PM Comparison of Shell and Tube Heat Exchangers for CO2 and CO2+SiCl4 mixtures transcritical cycles **Vladimir Naumov**	12:05 PM - 12:25 PM Abrasion Testing Methodologies for CSP Particles **Gema San Vicente**

12:25 PM - 12:45 PM Efficient Optimization of Solar Receiver via Numerical Simulation and Artificial Intelligence **Wei Shuai**		12:25 PM - 12:45 PM Effect of compressor inlet flow distortion on solar gas turbine performance **Matthew Meas**	12:25 PM - 12:45 PM Testing to Ensure the Best Performance of a Highly Air-stable Multi-layer Absorber **Gema San Vicente**

Friday, 11 October 2024

2:00 PM - 3:30 PM

Closing Session

Farewell 2024
Luca Turchetti

Announcement 2025
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