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Research Area	Publication Title + Authors + Full Citation + DOI
P1.1 Heliostats	A review of static and dynamic heliostat wind loads Matthew Emes, Azadeh Jafari, Andreas Pfahl, Joe Coventry, Maziar Arjomandi (2021) Solar Energy, Volume 225, 2021, Pages 60-82, ISSN 0038-092X. https://doi.org/10.1016/j.solener.2021.07.014
	Wire mesh fences for manipulation of turbulence energy spectrum Jafari, A., Emes, M., Cazzolato, B., Ghanadi, F. and Arjomandi, M. (2021) Experiments in Fluids, 62(2), 30. https://doi.org/10.1007/s00348-021-03133-7

Research Area	Publication Title + Authors + Full Citation + DOI
P1.2 Sodium Receiver	MDBA: An accurate and efficient method for aiming heliostats Shuang Wang, Charles-Alexis Asselineau, William R. Logie, John Pye, Joe Coventry (2021) Solar Energy, Volume 225, 2021, Pages 694-707, ISSN 0038-092X. https://doi.org/10.1016/j.solener.2021.07.059
	CSP Gen3: Liquid-Phase Pathway to SunShot Craig Turchi, Samuel Gage, Janna Martinek, Sameer Jape, Ken Armijo, Joe Coventry, John Pye, Charles-Alexis Asselineau, Felix Venn, William R. Logie, Armando Fontalvo, Shuang Wang, Robbie McNaughton, Daniel Potter, Theodore Steinberg, Geoffrey Will (2021) National Renewable Energy Laboratory, 2021. NREL/TP-5700-79323. https://doi.org/10.2172/1807668

Research Area	Publication Title + Authors + Full Citation + DOI
P1.4 Particle Receiver	Particle velocity measurement within a free-falling particle curtain using microscopic shadow velocimetry Shipu Han, Zhiwei Sun, Zhao Feng Tian, Timothy Lau, and Graham Nathan (2021) Opt. Express 29, 10923-10938 (2021) https://doi.org/10.1364/OE.421017

Research Area	Publication Title + Authors + Full Citation + DOI
P1.7 Particle Receiver	A new numerical method for determining heat transfer and packing distribution in particle heat exchangers for concentrated solar power S. Kuruneru, Y.C. Soo Too, J.-S. Kim (2021) Int. J. of Heat and Fluid Flow, 90, 108805. https://doi.org/10.1016/j.ijheatfluidflow.2021.108805
	Development of a staged particle heat exchanger for particle thermal energy storage system Y.C. Soo Too et al. (2021) Solar Energy, 220, 111-118. https://doi.org/10.1016/j.solener.2021.03.014
	A coupled CFD-DEM approach to model the in-trough mixing in a multi-stage solar particle receiver S. Kuruneru, J.-S. Kim, Y.C. Soo Too, D. Potter (2021) Energy Reports, Vol 7, No 2021, pp 5510-5526. https://doi.org/10.1016/j.egyr.2021.08.179
	A preliminary investigation of surface erosion rates in particle-based solar receivers Kuruneru, S.T.W., Kim, J.S. (2021) (extended abstract) APSRC 16-17 December, UNSW Sydney, Australia

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Research Area	Publication Title + Authors + Full Citation + DOI
P2.1 High Temperature Thermal Energy Storage	Mathematical modelling of heat transmission in the temperature history apparatus by using inverse method to evaluate the latent heat of high temperature PCMs Omaraa, E., Farah, S., Alemu, A., Saman, W., Bruno, F., Liu, M. (2021) International Journal of Heat and Mass Transfer, vol. 167, article no. 120825, pp. 1-13. DOI: 10.1016/j.ijheatmasstransfer.2020.120825
	Review and characterisation of high-temperature phase change material candidates between 500 C and 700°C Liu, M., Omaraa, E.S., Qi, J., Haseli, P., Ibrahim, J., Sergeev, D., Müller, M., Bruno, F., Majewski, P., (2021) Renewable and Sustainable Energy Reviews, 150, art. no. 111528. DOI: 10.1016/j.rser.2021.111528
	A novel, low-cost and robust method for determining molten salt density at high temperatures Severino, J., Jacob, R., Belusko, M., Liu, M., Bruno, F., (2021) Journal of Energy Storage, 41, art. no. 102935.DOI: 10.1016/j.est.2021.102935
	Experimental phase diagram study of the binary KCl-Na_2CO_3 system Haseli, P, Jacob, R, Liu, M, Majewski, F, Christo & Bruno (2021) Thermochimica Acta, vol. 695, no. 178811, pp. 1–10. DOI: 10.1016/j.tca.2020.178811
	Techno-economic analysis on the design of sensible and latent heat thermal energy storage systems for concentrated solar power plants Liu, M., Jacob, R., Belusko, M., Riahi, S., Bruno, F. (2021) Renewable Energy, 178, pp. 443-455. DOI: 10.1016/j.renene.2021.06.069
	Design of sensible and latent heat thermal energy storage systems for concentrated solar power plants: Thermal performance analysis Liu, M., Riahi, S., Jacob, R., Belusko, M., Bruno, F. (2020) Renewable Energy, 151, pp. 1286-1297. DOI: 10.1016/j.renene.2019.11.115
	Assessment of exergy delivery of thermal energy storage systems for CSP plants: Cascade PCMs, graphite-PCMs and two-tank sensible heat storage systems Riahi, S., Liu, M., Jacob, R., Belusko, M., Bruno, F. (2020) Sustainable Energy Technologies and Assessments, 42, art. no. 100823. DOI: 10.1016/j.seta.2020.100823
	Corrosion interface formation in thermally cycled stainless steel 316 with high-temperature phase change material Yin, Y, Rumman, R, Chambers, BA, Liu, M, Jacob, R, Belusko, M, Bruno, F, Lewis, DA & Andersson, GG (2021) Solar Energy Materials and Solar Cells, vol. 225, article no. 111062, pp. 1-10. DOI: 10.1016/j.solmat.2021.111062
	Chemical degradation in thermally cycled stainless steel 316 with high-temperature phase change material Yin, Y, Rumman, R, Chambers, BA, Liu, M, Jacob, R, Bruno, F, Belusko, M, Lewis, DA & Andersson, GG (2021) Solar Energy Materials and Solar Cells, vol. 230, article no. 111216, pp. 1-14. DOI: 10.1016/j.solmat.2021.111216
	Investigation of the effect of thermal resistance on the performance of phase change materials Opolot, M., Zhao, C., Liu, M., Mancin, S., Bruno, F., Hooman, K. (2021) International Journal of Thermal Sciences, vol. 164, article no. 106852, pp. 1-13. DOI: 10.1016/j.ijthermalsci.2021.106852
	Phase change behaviour study of PCM tanks partially filled with graphite foam Zhao, C, Opolot, M, Liu, M, Bruno, F, Mancin, S & Hooman, K (2021) Applied Thermal Engineering, vol. 196, article no. 117313, pp. 1-15. DOI: 10.1016/j.applthermaleng.2021.117313
	Simulations of melting performance enhancement for a PCM embedded in metal periodic structures Zhao, C, Opolot, M, Liu, M, Bruno, F, Mancin, S, Flewell-Smith, R & Hooman, K

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Research Area	Publication Title + Authors + Full Citation + DOI
	(2021) International Journal of Heat and Mass Transfer, vol. 168, article no. 120853, pp. 1-14. DOI: 10.1016/j.ijheatmasstransfer.2020.120853

Research Area	Publication Title + Authors + Full Citation + DOI
P2.2 Heat Exchangers	Transient Thermo-mechanical analysis of a shell and tube latent heat thermal energy storage for CSP plants Riahi, S., Evans, M., Belusko, M., Flewell-Smith, R., Jacob, R., Bruno, F. (2021) Applied Thermal Engineering, 196, art. no. 117327. DOI 10.1016/j.applthermaleng.2021.117327
	Review and characterisation of high-temperature phase change material candidates between 500 C and 700°C Liu, M., Omaraa, E.S., Qi, J., Haseli, P., Ibrahim, J., Sergeev, D., Müller, M., Bruno, F., Majewski, P., (2021) Renewable and Sustainable Energy Reviews, 150, art. no. 111528. DOI 10.1016/j.rser.2021.111528
	A novel, low-cost and robust method for determining molten salt density at high temperatures Severino, J., Jacob, R., Belusko, M., Liu, M., Bruno, F., (2021) Journal of Energy Storage, 41, art. no. 102935.DOI 10.1016/j.est.2021.102935
	Experimental phase diagram study of the binary KCl-Na_2CO_3 system Haseli, P, Jacob, R, Liu, M, Majewski, F, Christo & Bruno (2021) Thermochimica Acta, vol. 695, no. 178811, pp. 1–10. DOI 10.1016/j.tca.2020.178811
	Hydrothermal Assessment of Different Configurations for a High Temperature sodium-sCO_2 Printed Circuit Heat Exchanger Riahi, S., Belusko, M., Lau, T., Flewell-Smith, R., Evans, M., Bruno, F. (2022) (Under Review), International Journal of Heat and Mass Transfer

Research Area	Publication Title + Authors + Full Citation + DOI
P2.3 Storage Technology Options	Packed bed thermal energy storage with sodium as the heat transfer fluid Joe Coventry, Juan Torres, Zebedee Kee, Mehdi Vahabzadeh Bozorg, Mahdiar Taheri, Ahmad Mojir1, John Pye, Stuart Bell, Geoffrey Will, Ted Steinberg (2021) (extended abstract) APSRC 16-17 December, UNSW Sydney, Australia

Research Area	Publication Title + Authors + Full Citation + DOI
P3.4 Power Block	Design a cooling pillow to support a high-speed supercritical CO2 turbine shaft Md. Uddin, Halim Gurgenci, ZhiqiangGuan, AlexKlimenko, JunLi, JishunLi. (2021) Applied Thermal Engineering, Elsevier, Volume 196, 2021, 117345.
	Numerical study of melting performance enhancement for PCM in an annular enclosure with internal-external fins and metal foams C.R. Zhao, M. Opolot, M. Liu, F. Bruno, S. Mancin, K. Hooman. (2020) International Journal of Heat and Mass Transfer, 2020, 150: 119348.
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Research Area	Publication Title + Authors + Full Citation + DOI
	Phase change behaviour study of PCM tanks partially filled with graphite foam C.R. Zhao, M. Opolot, M. Liu, F. Bruno, S. Mancin, K. Hooman. (2021) Applied Thermal Engineering, 2021, 196: 117313.
	Review of Analytical Studies of Melting Rate Enhancement with Fin and/or Foam Inserts C.R. Zhao, M. Opolot, M. Liu, J. Wang, F. Bruno, S. Mancin, K. Hooman. (2021) Applied Thermal Engineering, 2022: 118154.

Research Area	Publication Title + Authors + Full Citation + DOI
P4.1 HyS Cycle	Integration assessment of the hybrid sulphur cycle with a copper production plant Ahmad Seyfaee, Mehdi Jafarian, Gkiokchan Moumin, , Claudio Corgnale, Christian Sattler Graham J.Nathan (2021) Energy Conversion and Management, Volume 249, page: 114832 DOI: https://doi.org/10.1016/j.enconman.2021.114832

Research Area	Publication Title + Authors + Full Citation + DOI
P4.2 Commercial Application of STEM Technologies	Identifying Pathways to Commercial Application of Beam-Down Solar Particle Technology in Mining and Off-Grid Applications in Australia Chinnici et al. (2021) (extended abstract) APSRC 16-17 December, UNSW Sydney, Australia
	Liquid fuel production via supercritical water gasification of algae: a role for solar heat integration?, 2021 MB Venkataraman, A Rahbari, P van Eyk, AW Weimer, W Lipiński, J Pye (2021) Sustainable Energy & Fuels 6 (doi:10.1039/D1SE01615F)
	Methanol fuel production from solar-assisted supercritical water gasification of algae: A techno-economic annual optimisation, 2021 A Rahbari, A Shirazi, J Pye (2021) Sustainable Energy & Fuels 5 (doi:10.1039/D1SE00394A), 4913-4931

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P4.3 Photocatalysis	Au101-rGO nanocomposite: immobilization of phosphine-protected gold nanoclusters on reduced graphene oxide without aggregation Mousavi et al. (2021) Nanoscale Advances (2021); doi: 10.1039/D0NA00927J
	Investigation of the Diffusion of Cr2O3 into Different Phases of TiO2 upon Annealing Alotabi et al. (2021) ACS Applied Energy Materials (2021); doi.org/10.1021/acsaem.0c02270
	Sub-monolayer Au₉ Cluster Formation via Pulsed Nozzle Cluster Deposition Daughtry et al, (2020) Nanoscale Advances (2020); https://doi.org/10.1039/D0NA00566E
	Gas phase Photocatalytic Water Splitting of Moisture in Ambient Air: Toward Reagent-Free Hydrogen Production Shearer et al., J.

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Research Area	Publication Title + Authors + Full Citation + DOI
	(2020) Photochem A (2020); doi.org/10.1016/j.jphotochem.2020.112757
	Activation of Water-Splitting Photocatalysts by Loading with Ultrafine Rh–Cr Mixed-Oxide Co-catalyst Nanoparticles Kurashige et al, (2020) Angewandte Chemie (2020). https://doi.org/10.1002/anie.201916681
	Cr_2O_3 Layer Inhibits Agglomeration of Phosphine-Protected Au_9 Clusters on TiO_2 Films Alotabi et al., (2021) Journal of Chemical Physics (2021); doi.org/10.1063/5.0059912
	Simple and High-Yield Preparation of Carbon-Black-Supported ~1-nm Platinum Nanoclusters with Superior Oxygen Reduction Reactivity Kawawaki et al., (2021) Nanoscale (2021); doi.org/10.1039/D1NR04202E
	Creation of High-Performance Heterogeneous Photocatalysts by Controlling Ligand Desorption and Particle Size of Gold Nanocluster Kawawaki et al., (2021) Angewandte Chemie (2021); doi.org/10.1002/anie.202104911
	The interaction of size-selected Ru3 clusters with RF-deposited TiO2: probing Ru-CO binding sites with CO-Temperature Programmed Desorption Howard-Fabretto et al., (2021) Nanoscale Advances (2021); doi: 10.1039/D1NA00181G
	Ultrafast Energy Transfer and Relaxation Dynamics of the Atomically-Precise Au9 Cluster Madridejos et al., (2021) Journal of Physical Chemistry (2021); doi.org/10.1021/acs.jpcc.0c08838
	Investigation of the Diffusion of Cr2O3 into Different Phases of TiO2 upon Annealing Alotabi et al., (2021) ACS Applied Energy Materials (2021); doi.org/10.1021/acsaem.0c02270
	Sub-monolayer Au9 Cluster Formation via Pulsed Nozzle Cluster Deposition Daughtry et al., (2021) Nanoscale Advances (2020); https://doi.org/10.1039/D0NA00566E
	Gas phase Photocatalytic Water Splitting of Moisture in Ambient Air: Toward Reagent-Free Hydrogen Production Shearer et al., (2021) J. Photochem A (2020); doi.org/10.1016/j.jphotochem.2020.112757
	Activation of Water-Splitting Photocatalysts by Loading with Ultrafine Rh–Cr Mixed-Oxide Co-catalyst Nanoparticles Kurashige et al., (2021) Angewandte Chemie (2020). https://doi.org/10.1002/anie.201916681

Research Area	Publication Title + Authors + Full Citation + DOI
P4.4 SDFB	Interactions of Olivine and Silica Sand with Potassium- or Silicon-Rich Agricultural Residues under Combustion, Steam Gasification, and CO_2 Gasification Li, G., Nathan, G. J., Kuba, M., Ashman, P. J., & Saw, W. L.

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Research Area	Publication Title + Authors + Full Citation + DOI
P4.5 Decarbonisation of Steelmaking	Solar-thermal beneficiation of iron ore: System-level dynamic simulation and techno-economic optimization A Rahbari, A Fontalvo and J Pye (2022) (under review with Applied Thermal Engineering)
	Solar-thermal sintering of iron ore: System-level dynamic simulation and techno-economic optimization A Rahbari, M Zheng, C Corsi, G Gunawan Gan and J Pye (2022) (awaiting submission)

Research Area	Publication Title + Authors + Full Citation + DOI
P5.3 Advanced Materials	An innovative empirical method for the accurate identification of the eutectic point of binary salts for Solar Thermal Energy Storage Ong, T.C., Wickham, E., Will, G., Steinberg, T.A., (2021) Materials Today Communications, Nov. 2020. doi/10.1016/j.mtcomm.2020.101864.
	An Improved Technique for Molten Salt Corrosion Sample Preparation Lippiatt, K., Bell, S., Cheng-Ong, T., East, C., McAuley, D., Will, G., and Steinberg, T., (2021) Solar Energy Materials and Solar Cells, Vol. 226, July 2021, doi.org/10.1016/j.solmat.2021.111057
	Chemical Degradation in Thermally Cycled Stainless Steel 316 with High-Temperature Phase Change Material Yanting Yin, Raihan Rumman, Benjamin A. Chambers, Ming Liu, Rhys Jacob, Frank Bruno, Martin Belusko, David A. Lewis, and Gunther G. Andersson (2021) Solar Energy Materials and Solar Cells 2021, 230. DOI: 10.1016/j.solmat.2021.111216
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	Corrosion Interface Formation in Thermally Cycled Stainless Steel 316 with High-Temperature Phase Change Material. Yanting Yin, Raihan Rumman, Benjamin A. Chambers, Ming Liu, Rhys Jacob, Frank Bruno, Martin Belusko, David A. Lewis, and Gunther G. Andersson (2021) Solar Energy Materials and Solar Cells 2021, 225. DOI: 10.1016/j.solmat.2021.111062
	Identifying structural integrity issues for molten salt phase change material thermal storage systems from corrosion behaviour V. Gray, K. Lippiatt, S. Bell, S. Maher, M. Sarvghad, T. Ong, G. Will and T. Steinberg (2020) AIP Conf. Proc., vol. 2303, no. 1, p. 020003, Dec. 2020, doi: 10.1063/5.0028680.
	Review of the solubility, monitoring, and purification of impurities in molten salts for energy storage in concentrated solar power plants T.C. Ong, M. Sarvghad, K. Lippiatt, L. Griggs, H. Ryan, G. Will, and T.A. Steinberg, (2020) Renew. Sustain. Energy Rev., vol. 131, p. 110006, Oct. 2020, doi: 10.1016/j.rser.2020.110006.

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P5.4 O + M	Sectorial reflectance-based cleaning policy of heliostats for Solar Tower power plants Truong-Ba H, Cholette ME, Picotti G, Steinberg TA, Manzolini G. (2021) Renew Energy, 2020;166:176–89. https://doi.org/https://doi.org/10.1016/j.renene.2020.11.129.
	Object-Oriented Modelling of an External Receiver for Solar Tower Application: Dynamic Simulation and Impact of Soiling G. Picotti et al., (2020) Conference paper published in AIP proceedings (SolarPACES 2019):, doi: 10.1063/5.0028515
	Evaluation of reflectance measurement techniques for artificially soiled solar reflectors: Experimental campaign and model assessment Picotti, G., Simonetti, R., Schmidt, T., Cholette, M.E., Heimsath, A., Ernst, S.J., Manzolini, G., 2021. (2021) Sol. Energy Mater. Sol. Cells 231, 111321. https://doi.org/10.1016/j.solmat.2021.111321
	Optimization of cleaning strategies for heliostat fields in solar tower plants G. Picotti, L. Moretti, M.E. Cholette, M. Binotti, R. Simonetti, E. Martelli, T.A. Steinberg, G. Manzolini (2020) Sol. Energy, vol. 204, pp. 501–514, Jul. 2020, doi: 10.1016/j.solener.2020.04.032.

Research Area	Publication Title + Authors + Full Citation + DOI
P6.1 System Modelling	System modelling and optimisation of a particle-based CSP system P Gunawan, Y Wang, J Pye (2021) Technical Report, Solar Thermal Group, Australian National University.
	MDBA: An accurate and efficient method for aiming heliostats S Wang, CA Asselineau, WR Logie, J Pye, J Coventry (2021) Solar Energy 225 (doi:10.1016/j.solener.2021.07.059), 694-707
	CSP Gen3: Liquid-Phase Pathway to SunShot Craig Turchi, Samuel Gage, Janna Martinek, Sameer Jape, Ken Armijo, Joe Coventry, John Pye, Charles-Alexis Asselineau, Felix Venn, Logie. William, Armando Fontalvo, Shuang Wang, Robbie McNaughton, Daniel Potter, Theodore Steinberg, Geoffrey Will (2021) https://www.osti.gov/servlets/purl/1807668
	Molten Salt vs. Liquid Sodium Receiver Selection Using the Analytic Hierarchy Process CS Turchi, C Libby, J Pye, J Coventry (2021) National Renewable Energy Lab.(NREL), Golden, CO (United States)

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P6.2 Opportunity Assessment	Identification and techno-economic assessment of potential enhancement of existing biomass power generators with concentrated solar thermal input Andrew Beath, Mehdi Aghaei Meybodi. (2021) Journal of Renewable and Sustainable Energy 13, 053702 (2021); https://doi.org/10.1063/5.0057669