

RESEARCH QUALITY | ASTRI Journal publications

Objective: to undertake highly innovative and internationally competitive research with a strategic focus on CST technologies that will lead to breakthroughs in the cost of solar energy

* = ASTRI collaborative organisations joint referred journal publications

ASTRI Ref	Research Area	Publication Type	Date	Authors	Publication Title + Full Citation	Links
J000	P22 PCM storage	Paper	May-2012	Liu, M., Saman, W., Bruno, F.	Review on storage materials and thermal performance enhancement techniques for high temperature phase change thermal storage systems, Renewable and Sustainable Energy Reviews 16 (2012) 2118– 2132	DOI: 10.1016/j.rser.2012.01.020
J001*	P31 sCO2 systems - Power blocks	Paper	Feb-2013	Singh, R., Miller, S.A., Rowlands, A.S., Jacobs, P.A.	Dynamic characteristics of a direct-heated supercritical carbon-dioxide Brayton cycle in a solar thermal power plant, Energy 50 (2013) 194-204	http://dx.doi.org/10.1016/j.energy.2012.11.029
J002*	P31 sCO2 systems - Power blocks	Paper	Apr-2013	Singh, R., Miller, S.A., Rowlands, A.S.	Effects of relative volume-ratios on dynamic performance of a direct-heated supercritical carbon-dioxide closed Brayton cycle in a solar-thermal power plant, Energy 55 (2013) 1025-1032	http://dx.doi.org/10.1016/j.energy.2013.03.049
J003	P31 sCO2 systems - Power blocks	Paper	2014	H.Gurgenci	Supercritical CO2 cycles offer experience curve opportunity to CST in remote area markets, Energy Procedia	http://dx.doi.org/10.1016/j.egypro.2014.03.125
J004	P11 Receiver Scoping	Paper	2014	J. Coventry and J. Pye	Heliostat cost reduction – where to now?, Energy Procedia	http://dx.doi.org/10.1016/j.egypro.2014.03.007
J005	P22 PCM storage	Paper	Mar-2015	Ming Liu, Martin Belusko, N.H. Steven Tay, Frank Bruno,	Impact of the heat transfer fluid in a flat plate phase change thermal storage unit for concentrated solar tower plants, Solar Energy, Volume 101, March 2014, Pages 220-231, ISSN 0038-092X	http://dx.doi.org/10.1016/j.solener.2013.12.030
J006	P31 sCO2 systems - Power blocks	Paper	May-2014	Suoying He, Zhiqiang Guan, Hal Gurgenci, Ingo Jahn, Yuanshen Lu, Abdullah M. Alkhedhair,	Influence of ambient conditions and water flow on the performance of pre-cooled natural draft dry cooling towers, Applied Thermal Engineering, Volume 66, Issues 1–2, May 2014, Pages 621-631, ISSN 1359-4311	http://dx.doi.org/10.1016/j.applthermaleng.2014.02.070
J007	P31 sCO2 systems - Power blocks	Paper	Nov-2014	Suoying He, Zhiqiang Guan, Hal Gurgenci, Kamel Hooman, Yuanshen Lu, Abdullah M. Alkhedhair,	Experimental study of film media used for evaporative pre-cooling of air, Energy Conversion and Management, Volume 87, November 2014, Pages 874-884, ISSN 0196-8904	http://dx.doi.org/10.1016/j.enconman.2014.07.084
J008	P31 sCO2 systems - Power blocks	Paper	Nov-2014	M.H. Sadafi, I. Jahn, A.B. Stilgoe, K. Hooman,	Theoretical and experimental studies on a solid containing water droplet, International Journal of	http://dx.doi.org/10.1016/j.ijheatmasstransfer.2014.06.064

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					Heat and Mass Transfer, Volume 78, November 2014, Pages 25-33, ISSN 0017-9310	
J009	P31 sCO ₂ systems - Power blocks	Paper	Sep-2014	Lu, Y.S., Gurgenci, H., Guan, Z., and He, S.,	The influence of windbreak wall orientation on the cooling performance of small natural draft dry cooling towers. International Journal of Heat and Mass Transfer, Volume 79, December 2014, Pages 1059–1069	http://dx.doi.org/10.1016/j.ijheatmasstransfer.2014.09.012
J010	P31 sCO ₂ systems - Power blocks	Paper	Jan-2015	Suoying He, Zhiqiang Guan, Hal Gurgenci, Kamel Hooman, Yuanshen Lu, Abdullah M. Alkhedhair,	Experimental study of the application of two trickle media for inlet air pre-cooling of natural draft dry cooling towers, Energy Conversion and Management, Volume 89, 1 January 2015, Pages 644-654, ISSN 0196-8904	http://dx.doi.org/10.1016/j.enconman.2014.10.031
J011	P31 sCO ₂ systems - Power blocks	Paper	Feb-2015	M.H. Sadafi, I. Jahn, A.B. Stilgoe, K. Hooman	A theoretical model with experimental verification for heat and mass transfer of saline water droplets, International Journal of Heat and Mass Transfer, Volume 81, February 2015, Pages 1-9, ISSN 0017-9310	http://dx.doi.org/10.1016/j.ijheatmasstransfer.2014.10.005
J012	P31 sCO ₂ systems - Power blocks	Paper	Apr-2015	Abdullah Alkhedhair, Zhiqiang Guan, Ingo Jahn, Hal Gurgenci, Suoying He.	Water Spray For Pre-Cooling Of Inlet Air For Natural Draft Dry Cooling Towers – Experimental Study. International Journal of Thermal Sciences	http://dx.doi.org/10.1016/j.ijthermalsci.2014.11.029
J013	P22 PCM storage	Paper	2015	Jacob, R. and F. Bruno	Review on shell materials used in the encapsulation of phase change materials for high temperature thermal energy storage., Renewable and Sustainable Energy Reviews 48(0): 79-87	http://dx.doi.org/10.1016/j.rser.2015.03.038
J014	P22 PCM storage	Paper	Aug-2015	Liu, M., J. C. Gomez, C. S. Turchi, N. H. S. Tay, W. Saman and F. Bruno	Determination of thermo-physical properties and stability testing of high-temperature phase-change materials for CSP applications." Solar Energy Materials and Solar Cells 139(0): 81-87	http://dx.doi.org/10.1016/j.solmat.2015.03.014
J015	P31 sCO ₂ systems - Power blocks	Paper	2015	Sadafi, M. H., I. Jahn and K. Hooman	Cooling performance of solid containing water for spray assisted dry cooling towers., Energy Conversion and Management 91(0): 158-167	http://dx.doi.org/10.1016/j.enconman.2014.12.005
J016	P41 Operations + Maintenance	Paper	Jun-2015	J. Toster and D.A.Lewis	Investigation of Roughness Periodicity on The Hydrophobic Properties of Surfaces., Aust J. Chem (special issue invited), 68, 1228-1232	http://dx.doi.org/10.1071/CH15310

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J017	P42 Solar Fuels	Paper	Apr-2015	Kueh, K., Nathan, G.J., Saw, W.	Storage capacities required for a solar thermal plant to avoid unscheduled reductions in output" Solar Energy, 118, 209–221	http://dx.doi.org/10.1016/j.solener.2015.04.040
J018	P12 Heliostat scoping	Paper	Nov-2015	J. Coventry, C. Andraka, J. Pye, M. Blanco, J. Fisher	A review of Sodium receiver technologies for central receiver solar power plants., Solar Energy, 122, 749–762	http://dx.doi.org/10.1016/j.solener.2015.09.023
J019	P11 Receiver Scoping	Paper	Oct-2015	V. Grigoriev, M. Blanco, C. Corsi	Fourier sampling of sun path for applications in solar energy., American Institute of Physics	http://dx.doi.org/10.1063/1.4949032
J020	P11 Receiver Scoping	Paper	2015	Emes, M. J., M. Arjomandi and G. J. Nathan	Effect of heliostat design wind speed on the levelised cost of electricity from concentrating solar thermal power tower plants., Solar Energy 115(0): 441-451	http://dx.doi.org/10.1016/j.solener.2015.02.047
J021	P42 Solar Fuels	Paper	Mar-2015	Guo, P., P. J. van Eyk, W. L. Saw, P. J. Ashman, G. J. Nathan and E. B. Stechel	Performance Assessment of Fischer–Tropsch Liquid Fuels Production by Solar Hybridized Dual Fluidized Bed Gasification of Lignite., Energy & Fuels	http://dx.doi.org/10.1021/acs.energyfuels.5b00007
J022	P31 sCO2 systems - Power blocks	Paper	2015	He, S., H. Gurgenci, Z. Guan, X. Huang and M. Lucas	A review of wetted media with potential application in the pre-cooling of natural draft dry cooling towers." Renewable and Sustainable Energy Reviews 44(0): 407-422	http://dx.doi.org/10.1016/j.rser.2014.12.037
J023	P31 sCO2 systems - Power blocks	Paper	2015	Lu, Y., Z. Guan, H. Gurgenci, K. Hooman, S. He and D. Bharathan	Experimental study of crosswind effects on the performance of small cylindrical natural draft dry cooling towers., Energy Conversion and Management 91(0): 238-248	http://dx.doi.org/10.1016/j.enconman.2014.12.018
J024	P42 Solar Fuels	Paper	May-2015	P. Guo, W. Saw, P. J. van Eyk, P. J. Ashman, G. J. Nathan and E. B. Stechel	Fischer–Tropsch liquid fuel production by co-gasification of coal and biomass in a solar hybridized dual fluidized bed gasifier., Energy Procedia	http://dx.doi.org/10.1016/j.egypro.2015.03.147
J025	P42 Solar Fuels	Paper	May-2015	W. Saw, A. Kaniyal, P. J. van Eyk, P. J. Ashman, G. J. Nathan and E. B. Stechel	Solar hybridized coal-to-liquids via gasification in Australia: techno-economic assessment., Energy Procedia	http://dx.doi.org/10.1016/j.egypro.2015.03.158
J026	P22 PCM storage	Paper	May-2015	Liu M., Tay N.H.S., Belusko M., Bruno F.,	Investigation of Cascaded Shell and Tube Latent Heat Storage Systems for Solar Tower Power Plants, Energy Procedia, 69, pp 913-924, 2015	http://dx.doi.org/10.1016/j.egypro.2015.03.175

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J027	P22 PCM storage	Paper	Oct-2015	Belusko M, Tay N.H.S., Liu M., Bruno F.,	Effective tube-in-tank PCM thermal storage for CSP applications, Part 1: Impact of tube configuration on discharging effectiveness, Solar Energy.	http://dx.doi.org/10.1016/j.solener.2015.09.042
J028	P22 PCM storage	Paper	Oct-2015	Belusko M, Tay N.H.S., Liu M., Bruno F.,	Effective tube-in-tank PCM thermal storage for CSP applications, Part 2: Parametric assessment and impact of latent fraction, Solar Energy	http://dx.doi.org/10.1016/j.solener.2015.09.034
J029	P					
J030	P01 OEM	Paper	Mar-2016	Meybodi M.A, Beath A.C.,	Impact of Cost Uncertainties and Solar Data Variations on the Economics of Central Receiver Solar Power Plants: An Australian Perspective, Renewable Energy 93 (2016) 510-524	http://dx.doi.org/10.1016/j.renene.2016.03.016
J031	P22 PCM storage	Paper	Apr-2016	Sun, Y., Liu, M., Bruno, F., Li, S. Jiang, Y.,	Eutectic Na ₂ CO ₃ -NaCl salt: A new phase change material for high temperature thermal storage (2016) Solar Energy Materials and Solar Cells, 152, pp. 155-160	http://dx.doi.org/10.1016/j.solmat.2016.04.002
J032*	P22 PCM storage	Paper	Sep-2015	Liu, M., Steven Tay, N.H., Bell, S., Belusko, M., Jacob, R., Will, G., Saman, W., Bruno, F.	Review on concentrating solar power plants and new developments in high temperature thermal energy storage technologies (2016) Renewable and Sustainable Energy Reviews, 53, pp. 1411-1432. Cited 1 time	http://dx.doi.org/10.1016/j.rser.2015.09.026
J033	P41 Operations + Maintenance	Paper	Jan-2016	Selene Pennetta, Francesco Anglani, John Barry and Shengzhe Yu.	A Case Study on Parameters Influencing Dust Accumulation on CSP Reflectors: Journal of Energy and Power Engineering 10 (2016) 73-81 David Publishing	http://dx.doi.org/10.17265/1934-8975/2016.02.001
J034*	P42 Solar Fuels	Paper	Mar-2016	Xiang Gao, Alejandro Vidal, Alicia Bayon, Roman Bader, Jim Hinkley, Wojciech Lipinski, Antonio Tricoli.	Efficient Ceria Nanostructures for Enhanced Solar Fuel Production via High-Temperature Thermochemical Redox Cycles (2016) Journal of Materials Chemistry A	http://dx.doi.org/10.1039/C6TA02187E
J035*	P42 Solar Fuels	Paper	2015	James T. Hinkley, Robbie K. McNaughton, John Pye, Woei Saw and Ellen B. Stechel.	The challenges and opportunities for integration of solar syngas production with liquid fuel synthesis: SolarPACES 2015, AIP Conf. Proc. 1734, 120003-1–120003-8	http://dx.doi.org/10.1063/1.4949205

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J036	P31 sCO2 systems - Power blocks	Paper	Jun- 2016	Abdullah Alkhedhair*, Ingo Jahn, Hal Gurgenci, Zhiqiang Guan, Suoying He.	Parametric study on spray cooling system for optimising nozzle design with pre-cooling application in natural draft dry cooling towers: International Journal of Thermal Sciences, Volume 104, June 2016, Pages 448-460	http://dx.doi.org/10.1016/j.ijthermalsci.2016.02.004
J037*	P31 sCO2 systems - Power blocks	Paper	Jul- 2016	Xiaoxiao Li, Zhiqiang Guan, Hal Gurgenci, Yuanshen Lu, Suoying He.	Simulation of the UQ Gatton natural draft dry cooling tower: Applied Thermal Engineering, Volume 105, 25 July 2016, Pages 1013-1020	http://dx.doi.org/10.1016/j.applthermaleng.2016.03.041
J038*	P31 sCO2 systems - Power blocks	Paper	Jul- 2016	Yuanshen Lu, Zhiqiang Guan, Hal Gurgenci, Abdullah Alkhedhair, Suoying He.	Experimental investigation into the positive effects of a tri-blade-like windbreak wall on small size natural draft dry cooling towers: Applied Thermal Engineering, Volume 105, 25 July 2016, Pages 1000-1012	http://dx.doi.org/10.1016/j.applthermaleng.2016.03.175
J039	P31 sCO2 systems - Power blocks	Paper	2016	Zhiqiang Guan, Hal Gurgenci and Z. Zou.	Design of Solar Enhanced Natural Draft Dry Cooling Tower for Solar Thermal Power Plants: Journal of the International Association for Shell and Spatial Structures (J. IASS), Volume 57 (1), 97-103	http://dx.doi.org/10.20898/j.iass.2016.187.763
J040*	P31 sCO2 systems - Power blocks	Paper	2015	Abdullah Alkhedhair, Ingo Jahn, Hal Gurgenci, Zhiqiang Guan, Suoying He, Yuanshen Lu.	Numerical simulation of water spray in natural draft dry cooling towers with a new nozzle representation approach: Applied Thermal Engineering, Volume 98, Pages 924-935	http://dx.doi.org/10.1016/j.applthermaleng.2015.10.118
J041	P31 sCO2 systems - Power blocks	Paper	2016	M.H. Sadafi., S. González Ruiz., M.R. Vetrano., I. Jahn., J. van Beeck., J.M. Buchlin., K. Hooman.	An investigation on spray cooling using saline water with experimental verification: Energy Conversion and Management, Volume 108 (2016), Pages 336-347	http://dx.doi.org/10.1016/j.enconman.2015.11.025
J042	P31 sCO2 systems - Power blocks	Paper	2016	Odabae, Mostafa, Sauret, Emilie and Hooman, Kamel.	CFD simulation of a supercritical carbon dioxide radial-inflow turbine, comparing the results of using real gas equation of state and real gas property file. Applied Mechanics and Materials, (2016) 846 85-90	http://dx.doi.org/10.4028/www.scientific.net/AMM.846.85
J043	P31 sCO2 systems - Power blocks	Paper	2016	Qin, K., Jahn, I., Jacobs, P.	Effect of operating conditions on the elasto-hydrodynamic performance of foil thrust bearings for supercritical CO2 cycles. Journal of	https://gasturbinespower.asmedigitalcollection.asme.org/article.aspx?articleid=2554119

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					Engineering for Gas Turbines and Power, (2016) 139 4: 042505-1-042505-10	
J044*	P31 sCO2 systems - Power blocks	Paper	2016	Sadafi, M. H., Jahn, I., Hooman, K.	Nozzle arrangement effect on cooling performance of saline water spray cooling, Applied Thermal Engineering: Applied Thermal Engineering, Volume 105, 25 July 2016, Pages 1061–1066	http://dx.doi.org/10.1016/j.applthermaleng.2016.01.078
J045*	P31 sCO2 systems - Power blocks	Paper	2016	Zakariya, M. F., Jahn, I. H. J.	The influence of real gas effects on the performance of supercritical CO 2 dry gas seals: Tribology International, Volume 102, October 2016, Pages 333–347	http://dx.doi.org/10.1016/j.triboint.2016.05.038
J046*	P31 sCO2 systems - Power blocks	Paper	2016	Sadafi, M. H., Ruiz, S. G., Vetrano, M. R., Beeck, van J., Jahn, I., Buchlin, J. M., Hooman, K.	On the Influence of Low-power Laser Source on the Evaporation of Single Droplets: Experimental and Numerical Approaches, Journal of Applied Fluid Mechanics, (2016) Vol. 9, Special Issue 1, pp. 81-87	https://espace.library.uq.edu.au/view/UQ:390548/UQ390548_OA.pdf
J047*	P31 sCO2 systems - Power blocks	Paper	2016	Qin, K., Jahn, I. H., Gollan, R. J., Jacobs, P. A.	Development of a Computational Tool to Simulate Foil Bearings for Supercritical CO2 Cycles: Journal of Engineering for Gas Turbine and Power, 138 (9): 092503-1-092503-19	http://dx.doi.org/10.1115/1.4032740
J048*	P31 sCO2 systems - Power blocks	Paper	2016	Qin, Kan, Jahn, Ingo and Jacobs, Peter	Development of a fluid-structure model for gas-lubricated bump-type foil thrust bearings: Applied Mechanics and Materials, 846 169-175	http://dx.doi:10.4028/www.scientific.net/AMM.846.169
J049	P11 Receiver Scoping	Paper	2016	Joe Coventry, Maziar Arjomandi, John Barry, Manuel Blanco, Greg Burgess, Jonathan Campbell, Phil Connor, Matthew Emes, Philip Fairman, David Farrant, Farzin Ghanadi, Victor Grigoriev, Colin Hall, Paul Koltun, David Lewis, Scott Martin, Graham Nathan, John Pye, Ang Qiu, Wayne Stuart,	Development of the ASTRI heliostat, AIP Conf. Proc. 1734, 020005 (2016)	http://dx.doi.org/10.1063/1.4949029

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ASTRI Ref	Research Area	Publication Type	Date	Authors	Publication Title + Full Citation	Links
				Youhong Tang, Felix Venn and Jeremy Yu,		
J050	P12 Heliostat scoping	Paper	2015	Alfonso Chinnici, Maziar Arjomandi, Zhao Feng Tian, Zhao Lu, Graham Jerrold Nathan.	A Novel Solar Expanding-Vortex Particle Reactor: Influence of Vortex Structure on Particle Residence Times and Trajectories., Solar Energy - Volume 122, December 2015, Pages 58–75	http://dx.doi.org/10.1016/j.solener.2015.08.017
J051	P11 Receiver Scoping	Paper	2016	Alfonso Chinnici, Maziar Arjomandi, Zhao Feng Tian, Graham Jerrold Nathan.,	A Novel Solar Expanding-Vortex Particle Reactor: Experimental and Numerical Investigation of the Iso-thermal Flow Field and Particle Deposition., Solar Energy - Volume 133, August 2016, Pages 451–464	http://dx.doi.org/10.1016/j.solener.2016.04.006
J052	P11 Receiver Scoping	Paper	2016	Alfonso Chinnici, Yunpeng Xue, Timothy CW Lau, Maziar Arjomandi, Graham J Nathan.,	Experimental and numerical investigation of the flow characteristics within a Solar Expanding-Vortex Particle Receiver-Reactor., Solar Energy - Volume 141, 1 January 2017, Pages 25–37	http://dx.doi.org/10.1016/j.solener.2016.11.020
J053	P12 Heliostat scoping	Paper		Joe Coventry, et al.,	Development of ASTRI high-temperature solar receivers. AIP Conference Proceedings 1850, 030011 (2017);	https://doi.org/10.1063/1.4984354
J054*	P01 OEM	Paper	2017	Meybodi M., Santigosa LR., Beath AC.	A Study on the Impact of Time Resolution in Solar Data on the Performance CSP Plants, Renewable Energy, Volume 109, August 2017, Pages 551–563	https://doi.org/10.1016/j.renene.2017.03.024
J055	P01 OEM	Paper	2016	Hinkley JT., Hayward JA., Beath AC., Brinsmead TS., Meybodi MA., Lovegrove KM.	Current and Future Status of Concentrating Solar Power in Australia, J. Japan Institute of Energy, 95, 2016, 227-234	Hinkley_2016 (JJIE).pdf https://www.researchgate.net/profile/James_Jim_Hinkley/publication/299951654_Current_and_Future_Status_of_Concentrating_Solar_Power_in_Australia/links/5707267a08aefb22b0934bcb/Current-and-Future-Status-of-Concentrating-Solar-Power-in-Australia.pdf
J056*	P11 Receiver Scoping	Paper	2017	Pfahl A., Coventry J., Röger M., Wolfertstetter F., Vázquez-Arango JF., Gross F., Arjomandi M., Schwarzbözl P., Geiger M., Liedke P.	Progress in heliostat development, Solar Energy, Volume 152, August 2017, Pages 3-37	https://doi.org/10.1016/j.solener.2017.03.029

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J057	P11 Receiver Scoping	Paper	2017	Coventry J, Andraka C	Dish systems for CSP, Solar Energy, Volume 152, August 2017, Pages 140-170	https://doi.org/10.1016/j.solener.2017.02.056
J058	P21 High Temperature Storage	Paper	2017	Haseli, Jafarian, Nathan	High temperature solar thermochemical process for production of stored energy and oxygen based on CuO/Cu ₂ O redox reactions", Solar Energy, 2017, 153, pp 1-10	DOI:10.1016/j.solener.2017.05.025
J059	P21 High Temperature Storage	Paper	2017	Jafarian, Arjomandi, Nathan	Thermodynamic potential of molten copper oxide for high temperature solar energy storage and oxygen production, Applied Energy, 201, pp 69-83	DOI:10.1016/j.apenergy.2017.05.049
J060	P22 PCM storage	Paper	2016	Jacob R, Belusko M, Fernández A.I., Cabeza L.F., Saman W., Bruno F.,	Embodied Energy and Cost of High Temperature Thermal Energy Storage Systems for use with Concentrated Solar Power Plants, Applied Energy vol. 180, 15 pp. 586-597, 2016	https://doi.org/10.1016/j.apenergy.2016.08.027
J061	P22* PCM storage	Paper	2017	Soheila Riahi, Wasim Y. Saman, Frank Bruno, Martin Belusko, N.H.S. Tay,	Comparative study of melting and solidification processes in different configurations of shell and tube high temperature latent heat storage system, Solar Energy, Volume 150, 2017, pp 363-374	https://doi.org/10.1016/j.solener.2017.04.061
J062	P22* PCM storage	Paper	2017	Jiang, Y., Sun, Y., Bruno, F., Li, S.	Thermal stability of Na ₂ CO ₃ -Li ₂ CO ₃ as a high temperature phase change material for thermal energy storage, Thermochimica Acta, 2017, 650, pp. 88-94	https://doi.org/10.1016/j.tca.2017.01.002
J063	P22* PCM storage	Paper	2017	Raud, R., Jacob, R., Bruno, F., Will, G., Steinberg, T.A.	A critical review of eutectic salt property prediction for latent heat energy storage systems, Renewable and Sustainable Energy Reviews, 2017, 70, pp. 936-944	https://doi.org/10.1016/j.rser.2016.11.274
J064	P22 PCM storage	Paper	2017	Riahi, S., Saman, W.Y., Bruno, F., Belusko, M., Tay, N.H.S.	Impact of periodic flow reversal of heat transfer fluid on the melting and solidification processes in a latent heat shell and tube storage system, Applied Energy, 2017, 191, pp. 276-286	https://doi.org/10.1016/j.apenergy.2017.01.091
J065	P22 PCM storage	Paper	2017	Sarvghad, M., Chenu, T., Will, G.	Comparative interaction of cold-worked versus annealed inconel 601 with molten carbonate salt at 450 °C, Corrosion Science, 2017, 116, pp. 88-97	DOI:10.1016/j.corsci.2017.01.004

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J066	P22 PCM storage	Paper	2017	Sarvghad, M., Bell, S., Raud, R., Steinberg, T.A., Will, G.	Stress assisted oxidative failure of Inconel 601 for thermal energy storage, Solar Energy Materials and Solar Cells, 2017, 159, pp. 510-517	https://doi.org/10.1016/j.solmat.2016.10.008
J067	P31 sCO2 systems - Power blocks	Paper	2016	X. Li, L. Xia, H. Gurgenci, Z. Guan,	Performance enhancement for the natural draft dry cooling tower under crosswind condition by optimizing the water distribution, Int. J. Heat Mass Transfer, 107 (2017) 271-280	http://dx.doi.org/10.1016/j.ijheatmasstransfer.2016.11.046
J068	P31 sCO2 systems - Power blocks	Paper	2017	Xiaoxiao Li*, Sam Duniam, Hal Gurgenci, Zhiqiang Guan, Anand Veeraragavan	Full Scale Experimental Study of a Small Natural Draft Dry Cooling Tower for Concentrating Solar Thermal Power Plant, Applied Energy, Volume 193, Pages 1-550 (1 May 2017)	https://doi.org/10.1016/j.apenergy.2017.02.032
J069	P31 sCO2 systems - Power blocks	Research-article		J Qi, T Reddell, K Qin, K Hooman, IHJ Jahn	Supercritical CO2 Radial Turbine Design Performance as a Function of Turbine Size Parameters, Journal of Turbomachinery, Volume 139, Issue 8. Paper No: TURBO-16-1191	DOI: 10.1115/1.4035920
J070	P31 sCO2 systems - Power blocks	Paper	2016	K Qin, IH Jahn, PA Jacobs	Effect of Operating Conditions on the Elastohydrodynamic Performance of Foil Thrust Bearings for Supercritical CO2 Cycles, J. Eng. Gas Turbines Power 139(4), 042505 (Nov 08, 2016) (10 pages). Paper No: GTP-16-1349	DOI: 10.1115/1.4034723
J071*	P42 Solar Fuels	Paper		Jason Alvino, Trystan Bennet, Rantej Kler, Rohan Hudson, Julien Aupoil, Thomas Nann, Vladimir Golovko, Gunther Anderson, Greg Metha,	Apparatus for the Investigation of High-Temperature, High-Pressure Gas-Phase Heterogeneous Catalytic and Photo-Catalytic Materials, Reviews of scientific instrumentation	http://dx.doi.org/10.1063/1.4982350
J072	P42 Solar Fuels	Paper		Guo, Peijun, Saw, Woei, van Eyk, Philip, Stechel, Ellen, Ashman, Peter, Nathan, Graham	System optimization for Fischer-Tropsch liquid fuels production via solar hybridized dual fluidized bed gasification of solid fuels, Energy Fuels, 2017, 31 (2), pp 2033–2043	DOI: 10.1021/acs.energyfuels.6b01755
J073	P42 Solar Fuels	Paper	2017	Guo, Peijun, Saw, Woei, van Eyk, Philip, Stechel, Ellen, de Nys, Rocky, Ashman, Peter, Nathan, Graham	Gasification reactivity and physiochemical properties of the chars from raw and torrefied wood, grape marc and macroalgae, Energy Fuels, 2017, 31 (2), pp 2046–2059	DOI: 10.1021/acs.energyfuels.6b02215

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ASTRI Ref	Research Area	Publication Type	Date	Authors	Publication Title + Full Citation	Links
J074*	P01 OEM	Paper		Mehdi Aghaei Meybodi, Andrew Beath, Stephen Gwynn-Jones, Anand Veeraragavan, Hal Gurgenci, and Kamel Hooman,	Techno-economic Analysis of Supercritical Carbon Dioxide Power Blocks, AIP Conference Proceedings 1850, 060001 (1-8), SolarPACES, Abu Dhabi, UAE, 11–14 October	https://doi.org/10.1063/1.4984409
J075	P11 Receiver Scoping	Paper	2017	Emes, Arjomandi, Ghanadi, Kelso,	Effect of turbulence characteristics in the atmospheric surface layer on the peak wind loads on heliostats in stow position, Solar Energy, Volume 157, 15 November 2017, Pages 284-297	https://doi.org/10.1016/j.solener.2017.08.031
J076	P11 Receiver Scoping	Paper	2017	Lee, Jafarian, Ghanadi, Arjomandi	An investigation into the effect of aspect ratio on the heat loss from a solar cavity receiver, Solar Energy, Volume 149, June 2017, Pages 20-31	https://doi.org/10.1016/j.solener.2017.03.089
J077*	P21 High Temperature Storage	Paper	2017	Bayon Sandoval, Alicia; Liu, Ming (Cherry); Bruno, Frank; Hinkley, Jim	Investigation of lithium sulphate for high temperature thermal energy storage, SolarPACES, Abu Dhabi, UAE, 11–14 October 2016, AIP Conference Proceedings. 080005-1 080005-8, AIP Conference Proceedings 1850 (1), 080005, 2017	https://doi.org/10.1063/1.4984426
J078	P21 High Temperature Storage	Paper	2017	de la Calle Alonso, Alberto; Bayon Sandoval, Alicia	Annual Performance of a Solar-Thermochemical Hydrogen Production Plant Based on CeO ₂ Redox Cycle. Linköping Electronic Conference Proceedings; 2017. 857-866.	https://doi.org/10.3384/ecp17132857
J079*	P21 High Temperature Storage	Paper	2017	A. Bayon, R. Badr, M. Jafarian, L. Fedunik-Hofman, Y. Sun, J. Hinkley, S. Miller, W. Lipinski	Techno-economic assessment of solid-gas thermochemical energy storage systems for solar thermal power applications, Energy, Volume 149, 15 April 2018, Pages 473-484	https://doi.org/10.1016/j.energy.2017.11.084
J080	P21 High Temperature Storage	Paper	2017	M. Silakhori, M. Jafarian, M. Arjomandi, G.J. Nathan,	Comparing the thermodynamic potential of alternative liquid metal oxides for the storage of solar thermal energy, Solar Energy, Volume 157, 15 November 2017, Pages 251-258	https://doi.org/10.1016/j.solener.2017.08.039
J081	P22 PCM storage	Paper	2017	M Liu, S Bell, M Segarra, NHS Tay, G Will, W Saman, F Bruno,	A eutectic salt high temperature phase change material: Thermal stability and corrosion of SS316 with respect to thermal cycling, Materials and Solar Cells, Volume 170, October 2017, Pages 1-7	https://doi.org/10.1016/j.solmat.2017.05.047

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J082*	P22 PCM storage	Paper	2017	R Raud, ME Cholette, S Riahi, F Bruno, W Saman, G Will, TA Steinberg,	Design optimization method for tube and fin latent heat thermal energy storage systems, Energy 134, 585-594, 2017	https://doi.org/10.1016/j.energy.2017.06.013
J083	P22 PCM storage	Paper		S Riahi, WY Saman, F Bruno, NHS Tay,	Numerical Study Of Melting Process Of A High-temperature Phase Change Material Including Natural Convection And Turbulence, International Journal of Computational Methods and Experimental Measurements, Volume 5 (2017), Issue 5, p9	DOI: 10.2495/CMEM-V5-N5-723-732
J084*	P22 PCM storage	Paper	2017	NHS Tay, M Liu, M Belusko, F Bruno,	Review on transportable phase change material in thermal energy storage systems, Renewable and Sustainable Energy Reviews, Volume 75, August 2017, Pages 264-277	https://doi.org/10.1016/j.rser.2016.10.069
J085	P22 PCM storage	Paper	2017	M. Sarvghad, G. Will, T.A. Steinberg,	Corrosion of steel alloys in molten NaCl + Na ₂ SO ₄ at 700 °C for thermal energy storage, Solar Energy Materials and Solar Cells, 179 (2018) 207-216	https://doi.org/10.1016/j.solmat.2017.11.017
J086*	P22 PCM storage	Paper	2016	Jiang, Y; Sun, Y; Liu, M; Bruno, F; Li, S,	Eutectic Na ₂ CO ₃ -NaCl salt: A new phase change material for high temperature thermal storage, Solar Energy Materials & Solar Cells, Volume 152 (2016) 155-160	https://doi.org/10.1016/j.solmat.2016.04.002
J087*	P22 PCM storage	Paper	2017	Jiang, Y; Sun, Y; Jacob, RD; Bruno, F; Li, S,	Novel Na ₂ SO ₄ -NaCl-ceramic composites as high temperature phase change materials for solar thermal power plants (Part I), Solar Energy Materials & Solar Cells, Volume 178 (2018) 155-160	https://doi.org/10.1016/j.solmat.2017.12.034
J088	P22 PCM storage	Paper	2017	S Almsater, A Alemu, W Saman, F Bruno,	Development and experimental validation of a CFD model for PCM in a vertical triplex tube heat exchanger, Applied Thermal Engineering, Volume 116, April 2017, Pages 344	https://doi.org/10.1016/j.applthermaleng.2017.01.104
J089	P22 PCM storage	Paper	2017	M. Sarvghad, T.A. Steinberg, G. Will,	Corrosion of steel alloys in eutectic NaCl+Na ₂ CO ₃ at 700 °C and Li ₂ CO ₃ + K ₂ CO ₃ + Na ₂ CO ₃ at 450 °C for thermal energy storage, Solar Energy Materials and Solar Cells, 170 (2017) 48-59	https://doi.org/10.1016/j.solmat.2017.05.063
J090*	P22 PCM storage	Paper	2015	M Belusko, NHS Tay, M Liu, F Bruno,	Effective tube-in-tank PCM thermal storage for CSP applications, Part 2: Parametric assessment	https://doi.org/10.1016/j.solener.2015.09.034

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					and impact of latent fraction, Solar Energy, Volume 139, 1 December 2016, Pages 744-756	
J091*	P22 PCM storage	Paper	2016	R Jacob, M Belusko, Al Fernández, LF Cabeza, W Saman, F Bruno	Embodied energy and cost of high temperature thermal energy storage systems for use with concentrated solar power plants., Applied Energy, Volume 180, 15 October 2016, Pages 586-597	https://doi.org/10.1016/j.apenergy.2016.08.027
J092	P22 PCM storage	Paper	2015	M Belusko, NHS Tay, M Liu, F Bruno,	Effective tube-in-tank PCM thermal storage for CSP applications, Part 1: Impact of tube configuration on discharging effectiveness, Solar Energy, Volume 139, 1 December 2016, Pages 733-743	https://doi.org/10.1016/j.solener.2015.09.042
J093	P31 sCO2 systems - Power blocks	Paper	2017	Duniam, S., et al.,	Comparison of direct and indirect natural draft dry cooling tower cooling of the sCO2 Brayton cycle for concentrated solar power plants, Applied Thermal Engineering, Volume 130, 5 February 2018, Pages 1070-1080	https://doi.org/10.1016/j.applthermaleng.2017.10.169
J094	P31 sCO2 systems - Power blocks	Paper	2017	Qin, K., R.J. Gollan, and I.H. Jahn,	Application of a wall function to simulate turbulent flows in foil bearings at high rotational speeds, Tribology International, Volume 115, November 2017, Pages 546-556	https://doi.org/10.1016/j.triboint.2017.06.018
J095	P31 sCO2 systems - Power blocks	Paper	2017	Qi, J.H., et al.,	Supercritical CO2 Radial Turbine Design Performance as a Function of Turbine Size Parameters, Journal of Turbomachinery-Transactions of the Asme J. Turbomach 139(8), 081008 (Mar 28, 2017) (11 pages)	DOI: 10.1115/1.4035920
J096	P31 sCO2 systems - Power blocks	Paper	2018	Wang, Jianyong, Guan, Zhiqiang, Gurgenci, Hal, Hooman, Kamel, Veeraragavan, Anand and Kang, Xin.	Computational investigations of heat transfer to supercritical CO2 in a large horizontal tube. Energy Conversion and Management, Volume 157, 1 February 2018, Pages 536-548	https://doi.org/10.1016/j.enconman.2017.12.046
J097	P31 sCO2 systems - Power blocks	Paper	2017	Sun, Yubiao , Guan, Zhiqiang and Hooman, Kamel,	A review on the performance evaluation of natural draft dry cooling towers and possible improvements via inlet air spray cooling. Renewable and Sustainable Energy Reviews, Volume 79, November 2017, Pages 618-637	https://doi.org/10.1016/j.rser.2017.05.151

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J098	P31 sCO2 systems - Power blocks	Paper	2017	Li, Xiaoxiao, Gurgenci, Hal, Guan, Zhiqiang, Wang, Xurong and Duniam, Sam	Measurements of crosswind influence on a natural draft dry cooling tower for a solar thermal power plant. Applied Energy, Volume 206, 15 November 2017, Pages 1169-1183	https://doi.org/10.1016/j.apenergy.2017.10.038
J099	P31 sCO2 systems - Power blocks	Paper	2017	Sun, Yubiao, Guan, Zhiqiang, Gurgenci, Hal, Li, Xiaoxiao and Hooman, Kamel	A study on multi-nozzle arrangement for spray cooling system in natural draft dry cooling tower. Applied Thermal Engineering, Volume 124, September 2017, Pages 795-814	https://doi.org/10.1016/j.applthermaleng.2017.05.157
J100*	P31 sCO2 systems - Power blocks	Paper	2016	Post, Alex; Beath, Andrew; Sauret, Emilie; Persky, Rodney,	Evaluation of Power Block Arrangements for 100MW Scale Concentrated Solar Thermal Power Generation Using Top-Down Design, AIP Publishing; 2017. 1-8, SolarPACES 2016; 11-14 October 2016; Abu Dhabi, UAE	https://doi.org/10.1063/1.4984382
J101	P42 Solar Fuels	Paper	2017	Woei Saw, Peijun Guo, Philip van Eyk, Graham Nathan.	Approaches to accommodate resource variability in the modelling of solar driven gasification processes for liquid fuels synthesis. Solar Energy, Volume 156, 1 November 2017, Pages 101-112	https://doi.org/10.1016/j.solener.2017.05.085
J102->	Not yet captured in a milestone report					
J1xx	P11 Receiver Scoping	Paper	2017	Alfonso Chinnici, Yunpeng Xue, Timothy Lau, Maziar Arjomandi, Graham Nathan.	Experimental and numerical investigation of the flow characteristics within a Solar Expanding-Vortex Particle Receiver-Reactor, Solar Energy, Volume 141, 25-37 (2017)	https://doi.org/10.1016/j.solener.2016.11.020
J1xx	P11 Receiver Scoping	Paper	2018	Emes, Ghanadi, Arjomandi, Kelso,	Investigation of peak wind loads on tandem heliostats in stow position, Solar Energy, Volume 121, 15 June 2018, Pages 548-558	https://doi.org/10.1016/j.renene.2018.01.080
J1xx	P22 PCM storage	Paper	2018	Soheila Riahi, Wasim Y Saman, Frank Bruno, Martin Belusko, N.H.S. Tay,	Performance comparison of latent heat storage systems comprising plate fins with different shell and tube configurations., Applied Energy, Volume 212, February 2018, Pages 1095-1106	https://doi.org/10.1016/j.apenergy.2017.12.109
J1xx	P41 Operations + Maintenance	Paper	2017	Ba, H. T., Cholette, M. E., Wang, R., Borghesani, P., Ma, L., & Steinberg, T. A.	Optimal condition-based cleaning of solar power collectors. Solar Energy, 157, 762-777	https://doi.org/10.1016/j.solener.2017.08.076

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J1xx	P41 Operations + Maintenance	Paper	2017	M. Sarvghad, G. Will, T.A. Steinberg,	Corrosion of Inconel 601 in molten salts for thermal energy storage, Solar Energy Materials and Solar Cells, 172 (2017) 220-229	https://doi.org/10.1016/j.solmat.2017.07.036
J1xx	P41 Operations + Maintenance	Paper	2018	Picotti, G., Borghesani, P., Cholette, M. E., & Manzolini, G.	Soiling of solar collectors–Modelling approaches for airborne dust and its interactions with surfaces. Renewable and Sustainable Energy Reviews, 81(P2), 2343-2357	https://doi.org/10.1016/j.rser.2017.06.043
J1xx	P43 Materials	Paper	2018	M. Sarvghad, S.D. Maher, D. Collard, M. Tassan, G. Will, T.A. Steinberg,	Materials compatibility for the next generation of Concentrated Solar Power plants, Energy Storage Materials, (2018)	https://doi.org/10.1016/j.ensm.2018.02.023