

Entry #	Date	Title	Description	Type	WP	Task	Lead	Available	Link to publication	Additional Info
1	12/4/19	Kick-off meeting	SCARABEUS kick-off meeting	M	1	1.1	POLIMI	NA	Brussels	Brussels
2	21/4/20	Kelvion's Printed Circuit Heat Exchanger	Webinar regarding Kelvion's Printed Circuit Heat Exchanger including general communication about the SCARABEUS project	Spk	4		KEL	Yes	SCARABEUS part at 26 min and 15 s Available @ https://www.youtube.com/watch?v=1XnVQlKORX4	SCARABEUS part at 26 min and 15 s Available @ https://www.youtube.com/watch?v=1XnVQlKORX4
3	1/7/19	Supercritical CARbon dioxide/Alternative Fluids Blends for Efficiency Upgrade of Solar power plant	Italian National Infoday for the 2020 - SC3 Secure, Clean and Efficient Energy	Gen	7		UNIBS	Yes		Presentation by Paolo Iora Rome, Italy
4	24/7/19	Abengoa announces its participation in the SCARABEUS project through its blog	Publication in the company blog	Gen	7		ABE	Yes		General public communication action
5	2/8/19	Investigating the effect of using different CO2 blends as working fluids on the turbine design for a 100 MWe Power plant	7th International sCO2 Power Cycles Symposium	Con	3		CITY	No		Paper withdrawn due to conference rescheduling
6	2/8/19	An evaluation of sCO2-additives for properties modification used for power cycle applications based on process simulation	7th International sCO2 Power Cycles Symposium	Con	4		TUW	No		Paper withdrawn due to conference rescheduling
7	2/8/19	Updated Review of the Potential of Supercritical Carbon Dioxide Cycles for Concentrating Solar Power Applications	7th International sCO2 Power Cycles Symposium	Con	5		USE	No		Paper withdrawn due to conference rescheduling
8	2/8/19 23/2/22	Supercritical CO2 power cycle research by European Academia: SCARABEUS	7th International sCO2 Power Cycles Symposium	Spk	5		USE	On-request		Invited speaker. February 22th to 25th 2021 , San Antonio (TX)
9	14/8/19	Types of heat exchangers for sCO2 power cycles	Bachelor thesis; author: Alexandra Puchegger	Gen	6		TUW	Yes		Printed version available at Institute for Energy Systems and Thermodynamics
10	20/9/19	Supercritical CO2/Alternative Fluid Blends for Efficiency Upgrade of Solar Power Plant	Presentation at the 3rd European Supercritical CO2 Conference	Con	7		POLIMI	Yes	Link to paper: https://duepublico2.uni-due.de/receive/duepublico_mods_00048892 Link to presentation: https://sco2.eu/fileadmin/user_upload/presentations/2019/ID-141.pdf	Paris, 19th and 20th of September 2019
11	1/10/19	Writing successful proposals for the H2020 programme: SCARABEUS	Presentation at the Infoday for the 2020 - SC3 Secure, Clean and Efficient Energy	Gen	7		USE	No		Panel session. David Sánchez panelist Seville, Spain
12	1/10/19	Supercritical Carbon Dioxide / Alternative Fluid Blends for Efficiency Upgrade of Solar Power Plants	25th SolarPACES conference	Con	7		POLIMI	No		Poster session
13	8/10/19	Interview with Prof. Manzolini	Interview by Maurizio Melis for Smart City, broadcasted nationally by Radio 24	Gen	7		POLIMI	Yes		Podcast available for download
14	22/11/19	Charakterisierung der Wärmeübergangseigenschaften von superkritischem CO2	Bachelor thesis; author: Paul Schwarzmayr; title translated in English: 'characterisation of heat transfer of supercritical CO2'	Gen	6		TUW	Yes		Printed version (German language) available at Institute for Energy Systems and Thermodynamics; results will be shown in paper soon
15	27/11/19	Presentation of the project and synergies discussion with other EU projects	Attendance to the CSP workshop arranged by the EU commission	Gen	1		POLIMI	Yes		
16	4/12/19	Mean-line design of a supercritical CO2 micro axial turbine	Paper submitted to ASME Turbo Expo 2020	Con	3		CITY	On-request		Conference paper. Withdrawn and prepared for journal submission.
17	24/12/19	Experimental and analytical procedure for the characterization of innovative working fluids for power plants applications	Applied Thermal Engineering	Jou PR	2	2.1	UNIBS	Yes	Link to repository: http://hdl.handle.net/11379/531838 Link to publisher: https://www.sciencedirect.com/science/article/pii/S1359431120329951	Gold Open Access
18	31/1/19	Überblick und Ergebnisse bestehender sCO2 Forschungsanlagen	Term paper; author: Philip Bukovcan	Gen	6		TUW	On-request		Title translated to English: 'Overview and results of existing sCO2 test rigs'
19	17/2/20	Wärmeübergangseigenschaften von superkritischem CO2	Term paper; author: Paul Schwarzmayr	Gen	6		TUW	On-request		More theoretical work of bachelor thesis
20	2/4/20	Blended sCO2 fluids could slash CSP costs, early data shows	Article in New Energy Update	Jou NPR	7		USE	Yes	Article published online in the New Energy Update journal. Link: https://analysis.newenergyupdate.com/csp-today/blended-sco2-fluids-could-slash-csp-costs-early-data-shows	Article published online in the New Energy Update journal. Link: https://analysis.newenergyupdate.com/csp-today/blended-sco2-fluids-could-slash-csp-costs-early-data-shows
21	22/4/20	Modelling and simulation of CSP systems	Workshop	Gen	5		USE	On-request		Workshop for MSc and PhD students interested in the topic. Delivered at USE during the 2nd Progress Meeting (CANCELLED due to COVID-19)
22	22/4/20	Role and challenges for CSP in the future energy landscape	Networking event	Gen	7		USE	On-request		Networking event jointly organised by SCARABEUS and SOCRATES. Co-located with the 2nd Progress Meeting at USE (April 21st 2020) (CANCELLED due to COVID-19)
23	29/4/20	CO2-based mixtures for transcritical cycle in CSP applications	Master Thesis dissertation	Gen	2		POLIMI	No		Master thesis dissertation
24	6/6/20	Thermodynamic models for CO2 based mixtures : application in transcritical cycles for concentrating solar power plants	Master Thesis dissertation	Gen	2		POLIMI	No		
25	1/7/20	Influence of CO2 based mixture transport properties on the design of heat exchangers	Master Thesis dissertation	Gen	2		UNIBS	On-request		
26	14/7/20	Corrosion behavior of metallic alloys used in sCO2 power cycles	Master Thesis dissertation	Gen	2		UNIBS	On-request		
27	22/7/20	Potential of Supercritical Carbon Dioxide Power Cycles to Reduce the Levelised Cost of Electricity of Contemporary Concentrated Solar Power Plants	Journal paper for Applied Sciences's special issue on sCO2 technologies	Jou PR	5	T5.1.1	USE	Yes	Link to repository: https://idus.us.es/handle/11441/102126 Link to publisher: https://www.mdpi.com/2076-3417/10/15/5049/htm	Open Access
28	23/7/20	Mean-line design of a supercritical CO2 micro-axial turbine	Journal paper for Applied Sciences's special issue on sCO2 technologies	Jou PR	3		CITY	Yes	Link to publisher: https://www.mdpi.com/2076-3417/10/15/5069/htm	Open Access
29	28/7/20	Assessment of the relative importance of boundary conditions on the performance of a cascade of axial compressor blades operating on ideal and non-ideal working fluids	Bachelor thesis	Gen	3 & 5		USE	Yes		In Spanish. Available upon request.
30	13/8/20	Thermal efficiency gains enabled by using supercritical CO2 mixtures in Concentrated Solar Power applications	Paper presented at the 4th European sCO2 Conference for Energy Systems	Con	5	T5.2	USE	Yes	Link to presentation: https://sco2.eu/fileadmin/user_upload/presentations/2021/Crespi-Thermal_efficiency_gains_enabled_by_using_supercritical_CO2_mixtures-141_c.pdf Link to paper: https://duepublico2.uni-due.de/receive/duepublico_mods_00073942	Paper selected for journal publication Energy. Joint activity by USE, POLIMI, UNIBS and LEAP
31	13/8/20	Binary interaction parameter uncertainty in the optimisation of a transcritical cycle: consequences on turbine design	Paper presented at the 4th European sCO2 Conference for Energy Systems	Con	3		CITY	No	Link to presentation: https://sco2.eu/fileadmin/user_upload/presentations/2021/Aqel-Binary_interaction_parameter_uncertainty_in_the_optimisation-126_c.pdf Link to paper: https://duepublico2.uni-due.de/receive/duepublico_mods_00073959	
32	1/9/20	SCARABEUS project page on Quantis website	Dissemination through website	Gen	5		QUA	Yes	Available on company's website	Available on company's website

33	25/9/20	Preliminary investigation of the influence of equations of state on the performance of CO ₂ + C6F6 as innovative working fluid in transcritical cycles	Journal paper published in Energy	Jou PR	2		UNIBS	Yes	Link to paper: https://www.sciencedirect.com/science/article/pii/S0360544221020636	Gold Open Access
34	1/10/20	Adoption of CO ₂ blended with C6F6 as working fluid in CSP plants	Paper presented at SolarPACES 2020	Con	2 & 5		POLIMI	No	Link to publication not available yet	Oral presentation at SolarPACES 2020 (online), September 28 - October 2 Joint activity by POLIMI, UNIBS and USE
35	3/10/20	Sensitivity of transcritical cycle and turbine design to dopant fraction in CO ₂ -based working fluids	Journal paper for Applied Thermal Engineering's special issue on sCO ₂ technologies	Jou PR	3		CITY	Yes	Link to publisher: https://www.sciencedirect.com/science/article/pii/S1359431121002489	Gold Open Access
36	7/10/20	Supercritical CO ₂ blends for Concentrated Solar Power plants: H2020 SCARABEUS project	Live webinar: Supercritical CO ₂ cycles - Theory and applications	Spk	5		ABE	Yes		Invited speaker to live webinar sponsored by KTH Energy Platform, October 7 2020
37	25/11/20	Introducing SCARABEUS: objectives and current results	1st Webinar series SCARABEUS	Gen	7		POLIMI	On-request		
38	2/12/20	Introduction to power plant modelling and simulation	1st Webinar series SCARABEUS	Gen	5		USE	On-request		
39	9/12/20	Modelling and simulation of solar fields	1st Webinar series SCARABEUS	Gen	5		ABE	On-request		
40	16/12/20	Modelling and simulation of fluid properties	1st Webinar series SCARABEUS	Gen	2		UNIBS	On-request		
41	20/12/20	Innovative CO ₂ based fluids used in transcritical power cycle for CSP applications	Master Thesis dissertation	Gen	2		POLIMI	No		
42	13/1/21	Role of Thermal Energy Storage systems in CSP	1st Webinar series SCARABEUS	Gen	2		POLIMI	On-request		
43	20/1/21	Design and simulation of turbomachinery	1st Webinar series SCARABEUS	Gen	3		CITY	On-request		
44	27/1/21	Design and simulation of high temperature Thermal Energy Storage systems	1st Webinar series SCARABEUS	Gen	5		TUW	On-request		
45	3/2/21	Life Cycle Analysis of Concentrated Solar Power plants	1st Webinar series SCARABEUS	Gen	5		QUA	On-request		
46	26/2/21	Natural Capital Valuation of Concentrated Solar Power plants	1st Webinar series SCARABEUS	Gen	5		POLIMI	On-request		Webinar delivered by POLIMI-LEAP
47	16/3/21	Influence of Working Fluid Composition on the Optimum Characteristics of Blended Supercritical Carbon Dioxide Cycles	Paper presented at ASME Turbo Expo 2021	Con	5	T5.1.2	USE	Yes	Link to publisher: https://asmedigitalcollection.asme.org/GT/proceedings/GT2021/85048/V010T30A030/1120316	Gold Open Access
48	16/3/21	Comparison of CFD Predictions of Supercritical Carbon Dioxide Axial Flow Turbines Using a Number of Turbulence Models	Paper presented at ASME Turbo Expo 2021	Con	3		CITY	Yes	Link to publisher: https://asmedigitalcollection.asme.org/GT/proceedings/GT2021/85048/V010T30A010/1120301	Gold Open Access
49	15/4/21	Dynamische Simulation und Analyse des Wärmeübergangs eines Kohlenstoffdioxid Kreisprozesses	MSc thesis	Gen	6		TUW	Yes	https://repositum.tuwien.at/handle/20.500.12708/17365	In German
50	28/8/21	Thermal efficiency gains enabled by using CO ₂ mixtures in supercritical power cycles	Energy	Jou PR	5	T5.2	USE	Yes	https://www.sciencedirect.com/science/article/pii/S0360544221021472?via%3DIuh	Gold Open Access Joint publication by USE, UNIBS and POLIMI
51	3/9/21	Potential and challenges of the utilization of CO ₂ -mixtures in supercritical power cycles of Concentrated Solar Power plants	Paper submitted to the 7th International Supercritical Power Cycles Symposium	Con	5	T5.1.2	USE	Yes		Gold Open Access Abstract accepted
52	3/9/21	Thermodynamic assessment and optimisation of supercritical and transcritical power cycles operating on CO ₂ mixtures	Paper submitted to the 7th International Supercritical Power Cycles Symposium	Con	5	T5.1.2	USE	Yes		Gold Open Access Abstract accepted
53	15/9/21	Investigation of CO ₂ mixtures to overcome the limits of sCO ₂ cycles	Paper presented at ATI 2021	Con	2		POLIMI	Yes		Oral presentation at ATI 2021 (online), September 15-17 Joint activity by POLIMI & UNIBS
54	17/9/21	Adoption of CO ₂ -SO ₂ mixtures as working fluid in a transcritical Recompression cycle	Paper submitted to Energy	Jou PR	5	T5.1.2	USE	Yes		Gold Open Access
55	31/9/21	Adoption of CO ₂ Mixtures as Working Fluid for CSP Cycles with Linear Collectors and Molten Salts as HTF	Paper presented at SolarPACES 2021	Con	2		POLIMI	Yes		Oral presentation at SolarPACES 2021 (online), September 27 - October 1 Joint activity by POLIMI & UNIBS
56	31/9/21	CO ₂ mixtures for CSP plant: techno-economic analysis of the overall system (Ongoing)	Master Thesis dissertation	Gen	2		POLIMI	No		Thesis ongoing
57	31/9/21	CO ₂ mixtures for CSP plant: techno-economic analysis of the overall system (Ongoing)	Master Thesis dissertation	Gen	2		POLIMI	No		Thesis ongoing
58	11/10/21	The Potential of Supercritical Cycles Based on CO ₂ Mixtures in Concentrated Solar Power Plants: an Exergy-Based Analysis	Paper presented to the 6th International Seminar on ORC Power Systems	Con	5	T5.1.2	USE	Yes		
59	11/10/21	SCARABEUS presented at the European Corner of the 6th International Seminar on ORC power Systems	Exploitation activity: interaction with stakeholders at the conference	Exp	7	T7.3	ABE	Yes	https://www.scarabeusproject.eu/diseminations/	The event was restricted to attendees but the materials (docs and video clips) have been made available on the project website.
60	30/10/21	Life Cycle Assessment of Innovative Concentrated Solar Power Plants Using Supercritical Carbon Dioxide Mixtures	ASME Turbo Expo 2022	Con	5	T5.4	USE	Yes		The paper will be made Open Access when presented at the conference (paper already accepted) Joint activity by USE, QUANTIS, ABENGOA, BAKER-HUGHES
61	30/10/21	Integrated Aerodynamic and Structural Blade Shape Optimisation of Axial Turbines Operating With Supercritical Carbon Dioxide Blended With Dopants	ASME Turbo Expo 2022	Con	3		CITY	Yes		The paper will be made Open Access when presented at the conference (paper already accepted) Joint activity by CITY, BAKER HUGHES
62	3/11/21	SCARABEUS project and its impact	Presentation of project in mandatory course for first-year students	Gen	6		TUW	No		for mechanical engineering and mechanical engineering- management students
63	22/2/22	Potential and Challenges of the Utilization of CO ₂ -Mixtures in Supercritical Power Cycles of Concentrated Solar Power Plants	7th International sCO ₂ Power Cycles Symposium	Con	5		USE	Yes	http://www.sco2symposium.com	
64	24/2/22	Thermodynamic Assessment and Optimisation of Supercritical and Transcritical Power Cycles Operating on CO ₂ Mixtures by Means of Artificial Neural Networks	7th International sCO ₂ Power Cycles Symposium	Con	5		USE	Yes	http://www.sco2symposium.com	
65	13/6/22	Research and Innovation in Supercritical CO ₂ development in Europe	ASME Turbo Expo 2022	Spk	7		USE	No		Panel Session at ASME Turbo Expo. David Sánchez will represent the SCARABEUS consortium at the conference, alongside other EU projects
66	27/3/22	Preliminary investigation on the adoption of CO ₂ -SO ₂ working mixtures in a transcritical Recompression cycle	Applied Thermal Engineering	Jou PR	5		USE	Yes	https://www.sciencedirect.com/science/article/pii/S1359431122003404	
67	8/4/22	Webinar series	Joint dissemination activity	Gen	7		USE	Yes		Joint dissemination activity (EU funded projects) organized by the European Turbine Network [ongoing]
68	8/4/22	sCO ₂ test rig and SCARABEUS concept	Presentation and Site Visit for Women's Network of Faculty	Gen	6		TUW	No		
69	13/6/22	Design of an air-cooled condenser for CO ₂ -based mixtures: model development, validation and heat exchange gain with internal microfins	ASME Turbo Expo 2022	Con	4		TUW	Yes		The paper will be made Open Access when presented at the conference (paper already accepted) Joint activity by TU Wien, Polimi, Kelvion, Brescia
70	13/4/22	Experimental characterisation of CO ₂ + C6F6 mixture: thermal stability and vapour liquid equilibrium test for its application in transcritical power cycle	Applied Thermal Engineering	Jou PR	2	T2.2-2.3	UNIBS	Yes		Under publication (paper is already accepted). Gold open-access publication.