

CURRICULUM VITAE

Surname, Name: Karellas, Sotirios
Date of Birth: 16.08.1977
Nationality: Greek
Family Status: Married / 2 Children
Tel, email: +30 210 7723863, -2810, sotokar@mail.ntua.gr



PRESENT POSITIONS

NATIONAL TECHNICAL UNIVERSITY OF ATHENS

Professor

[School of Mechanical Engineering](#), Thermal Engineering Section
Director of the Laboratory of Thermal Processes ([Video 1](#), [Video 2](#))
Member of the [Laboratory of Steam Boilers and Thermal Plants](#)
Member of the Research Committee of [NTUA](#)
Chair of the Research and Innovation of [EULIST](#)

Athens, Greece
August 2019 – Now

Institute for Smart, Sustainable and Resilient Infrastructure (NTUA)

Member of the [Institute](#)

Athens, Greece
November 2024 - Now

ENERGY COMPETENCE CENTER

Coordinator of the Steering Committee of the [Center](#)

Athens, Greece
September 2021 - Now

TECHNISCHE UNIVERSITÄT MÜNCHEN

Visiting Professor

TUM School of Engineering and Design, Lehrstuhl für Energiesysteme

Munich, Germany
September 2013 – Now

EDUCATION

NATIONAL TECHNICAL UNIVERSITY OF ATHENS

Post-Doctor research at the lab. of Steam Boilers & Thermal Plants
Research topics: Biomass and waste gasification and combustion, Gas-Tars analysis, Thermal power plants, Decentralized energy systems, CHP, Substitute Natural Gas, Hydrogen Energy, Organic Rankine Cycle

Athens, Greece
February 2006 – December 2010

TECHNISCHE UNIVERSITÄT MÜNCHEN

PhD Candidate- Scientific Assistant (Chair of Energy Systems)

Munich, Germany
March 2001 – November 2005

PhD Thesis: "Online analysis of the composition of biogenous gases and their effect on microturbine and fuel cell systems" (Grade: Magna Cum Laude).

NATIONAL TECHNICAL UNIVERSITY OF ATHENS

Mechanical Engineering studies

Athens, Greece

September 1996 – March 2001

Diploma Thesis: "Integration of an air-inlet cooling system in gas turbine power plants". (Grade 10/10)

Diploma degree: 8,66 / 10 (Highest graduated student of mech. eng. for 2001, Graduation in 9 semesters)

PROFESSIONAL EXPERIENCE

NATIONAL TECHNICAL UNIVERSITY OF ATHENS

Associate Professor

June 2015-August 2019

Assistant Professor

January 2011-June 2015

MEMBER OF THE COMBINED HEAT AND POWER (CHP) CERTIFICATION BODY OF NTUA

Certification of Combined Heat and Power plants: Aluminum de Grèce CoGen plant (334MWe+216MWth), Serres, Drama, Agritex, DESFA, LAMDA DOMI SA, Hellenic Fertilizers CHP plant, Motoroil Hellas, Wonderplant S.A. (8MWe), BRIGHT (Special Lighting S.A.(125 kWel)), Greenhouses Savvidis S.A.(1MWe)

2012 – now

THIRD PARTY AND CONSULTANT SERVICES – INDUSTRIAL ACTIVITIES

2007 – now

- Acceptance tests of Power plants: Atherinolakkos Plant Units III and IV (2x50MWe), Aluminum de Grèce CoGen plant (334MWe+216MWth), Ag. Nikolaos (445MWe), Korinthos Power (424MWe), Samsun Turkey CCPP (2x435MWe), Denizli Turkey CCPP (774MWe), Aliveri CCPP (416MWe), Upgrading of GT1 and GT2 of Aluminum de Grèce CoGen plant (2x124MWe), SAMRA Power Station add-on combined cycle Jordan (145 MWe), Toplarna Ljubljana Slovenia CHP (115MWe).
- Benchmark study, together with RWE, for the maintenance of the Units in Kardias Thermal Power Plant. Especially: Cleaning and repair works in the combustion chamber, armouring and maintenance of mills (2007)
- Technical services aiming at the performance of efficiency and environmental measurements of the Aghios Dimitrios power plant, of the Public Power Corporation of Greece - Industrial Research Project funded by TUV HELLAS S.A.. Scientific Responsible of the NTUA team acting as Third Party Team that installed the measuring chain and conducted the performance/acceptance tests for the NO_x refurbishment of Ag. Dimitrios lignite fired units III and IV (2016-21)
- Technical Services for environmental and energetic measurements at the Thermal Power Plant of Kosovo B - Industrial Research Project funded by Ambiente s.c. for the project EuropeAid/136613/DH/SER/XK. Leader of the team that undertook several tasks related to the evaluation of the current status of the Kosovo B Thermal Power Plant and the requirements for future refurbishments. Provision of seminars to the engineers and the technicians of the plant for pollution abatement and environmental performance of the thermal lignite power plant of Kosovo B. (2016-2017)
- Consultant services in large power plant producers including: Feasibility studies for the installation of thermal power plants, cogeneration plants or energy storage plants in Greece, (Mytilinaios S.A., Motoroil Hellas, Elvalhalcor), Feasibility study for the Long term prospects of CHP (VGB, 2016).
- Member of the team that published the EcoDesign Preparatory study on Steam Boilers for the European Commission (2014).

NATIONAL ENERGY STRATEGY CHAMBER (Ministry of development)

Athens, Greece

Energy consulting services

November 2007-May 2008

Economic and technical evaluation of the energy mix in Greece, Solving of problems concerning the electricity sector in Greece (CO₂ emissions, summer peaks etc.), Clean coal technologies

ALSTOM POWER BOILER GmbH

Stuttgart, Germany

Engineer in the fluidised bed firing systems department

July 2005 – January 2006

Responsible for the training and transfer of technology to Indian colleagues from the Alstom Power Indian Limited

HELLENIC SHIPYARDS

Skaramangas, Greece

Junior Engineer (Trainee)

July 1999 – August 1999

Design department for ship production, welding department of train production and restoration

DISTINCTIONS – AWARDS

- **“Valley of the Year 2024”** award for the project **TRIERES** from Clean Hydrogen Partnership. Participation as partner of the TRIERES consortium
- **“Project of the Year 2024”** award for the project **Hyflexpower** at Connecting Green Hydrogen MENA 2024, 23-25 April 2024 Dubai. Participation as partner of the Hyflexpower consortium
- **Prof. Gianfranco Angelino award** for the best poster at the 6th International seminar on ORC Power Systems, 11-13 October 2021 (ORC2021) **Economic model predictive control on a waste heat recovery micro – ORC**, E. Varvagiannis, I. Kalogeropoulos, T. Roumpedakis, P. Pallis, S. Karellas, H. Sarimveis
- **ASCE outstanding Reviewer 2013 in recognition of outstanding service as a reviewer for the Journal of Energy Engineering**, from American Society of Civil Engineers. March 2014
- **Young Energy Professional** scholarship from the State Government of Victoria Australia (for scientists under 35) at the second International Symposium on the Sustainable Use of Low Rank Coal in Melbourne. April 2012.
- Award **S.A. Routsis** for the **best scientific work from young scientist** at ECOS 2006 **An innovative biomass gasification process and its coupling with microturbines and fuel cell systems**, S. Karellas, J. Karl, E. Kakaras
- Award for the **Best Poster Presentation** in the Eighth Grove Fuel Cell Symposium, Elsevier, Poster title: **Integration of SOFC fuel cells systems in CHP-Systems with indirect gasification**, J. Karl, S. Karellas, D. Hein
- Scholarship of the **Alexander Onassis Foundation** for PhD studies in a foreign country (TU München)
- Numerous awards for outstanding performance during the studies at NTUA

E D U C A T I O N A L W O R K

<u>NATIONAL TECHNICAL UNIVERSITY OF ATHENS</u>	2006-now
<u>Undergraduate</u> : Heat Transfer, Thermal Energy Conversion in power plants, Energy Management, Decentralized Thermal Systems, Pollution Abatement Technology for Thermal Plants, Energy Storage, Environment and Development.	
<u>Postgraduate</u> : Thermal Power Plants and Cogeneration, Environmental Technology and Management, Energy Efficiency in Buildings. Postgraduate Programme: Energy Generation and Management.	
Energy and Environment, Clean Technologies, Postgraduate Programme: Environment and Development.	
<u>Technische Universität München (Visiting Professor)</u>	2013-now
<u>Postgraduate</u> : Renewable Energy Technology I – Energy from Biomass	
Renewable Energy Technology II – Solar Thermal Energy	
Master of Science in Power Engineering	
<u>Hellenic Open University (Member of the Academic Supervision Committee)</u>	2023-now
<u>Postgraduate</u> : Sustainable Interior Design of Buildings.	
<u>NATIONAL TECHNICAL UNIVERSITY OF ATHENS</u>	2011-2016
<u>Education of Energy Inspectors</u> : Combined Heat and Power production, Psychrometry, Refrigeration and air conditioning.	
<u>University of Western Macedonia</u>	2017-2019
<u>Postgraduate</u> : Coal technologies, Master programme: Energy Resources, Technologies and Management	
<u>Invited lecturer in international educational seminars-workshops</u>	2014-now
Aristotle University of Thessaloniki : Thermodynamics (Organic Rankine Cycle, Waste Heat Recovery). December 2024	
Participation as an Academic Expert at at the <u>GreenVOCnet</u> – Vocational Empowerment for a Green and Socially Just Transition. Subject areas: Hydrogen Technologies and Heat Pumps (2024-now)	
Universität Bayreuth : Thermodynamic fundamentals of energy, Power plant technology, Regenerative and distributed energy systems, Energy conversion from biomass. Bayreuth International Summer School 2014, -15, -16, -17, -18, -19 and -22, Bayreuth, Germany	
Silisean University of Technology : International Summer school for PhD students on methods and technologies for energy transition and climate protection, 5-9 July 2021, Gliwice, Poland	
Friedrich-Alexander Universität Erlangen- Nürnberg : Lecture title: Reversible ORC Prozesse für Carnot Batterien- Das EU-Projekt SolBloRev. Workshop: Carnot Batterien: Thermische Stromspeicher für Energiewende 16.09.2021, Erlangen, Germany	
Friedrich-Alexander Universität Erlangen- Nürnberg : Lecture title: Coal-to-SNG process simulation and economic evaluation. Workshop title: Methanisierung und Second Generation Fuels. 29.05.2012 – 30.05.2012 (1 st Workshop), 12.06.2014 – 13.06.2014 (2 nd Workshop) and 19.05.2016 – 20.05.2016 (3 rd Workshop), Nürnberg, Germany	
Univeristatea Tehnica GH. ASACHI : Lecture title: Heat Transfer in Organic Rankine Cycle Applications. Summer school title: Advances in Heat transfer enhancement: From Basic to Nano, 17.09.2012 – 22.09.2012, Iasi, Romania.	
<u>ALSTOM POWER BOILER Stuttgart, Germany</u>	July 2005 – January 2006
Responsible for the transfer of technology from ALSTOM Stuttgart to Indian engineers from APIL. Explanation of the functionality of the ALSTOM CFB boilers. Analysis of the ALSTOM standards concerning the design of CFB boilers	
<u>Supervisor of PhD, Diploma, Masters and Semester theses</u>	
Supervision of 13 PhD theses (NTUA) (7 finished, 6 ongoing)	January 2011-Now
(For a detailed list of the supervised PhD Theses, see Appendix, page 31)	
More than 120 Diploma theses (NTUA)	February 2007-Now
More than 80 Master theses (NTUA)	February 2007-Now
Academic Responsible of ERASMUS and international students	September 2013-August 2020
Co-supervision of 3 Diploma thesis and 12 semester theses (TUM)	March 2001 – June 2005
Supervisor of IAESTE students (TUM)	March 2001 – June 2005
<u>European Energy Manager (EUREM)</u>	Athens Greece
Lecturer in Refrigeration, Air Conditioning and Waste Heat recovery	February 2010 – Now
Organization: Greek-German Chamber of Commerce (16 hours per seminar)	
<u>Energy exploitation of biomass and waste in Germany</u>	Ptolemaida, Greece
Invited lecturer for the training seminar: The energy exploitation of wastes	December 2004
in other countries, organized by the Institute for Solid Fuels Technology and Applications (ISFTA) (18 teaching hours)	
<u>TU München (Assistant Lecturer):</u>	2001-2004
Methods of energy conversion, Combustion Laboratory, Energy production from Biomass, Numerical Methods in the power generation, Thermal power plants for electrical engineers	

LANGUAGE SKILLS (Mark 1 to 5 for competence)

<i>Language</i>	<i>Reading</i>	<i>Speaking</i>	<i>Writing</i>
Greek	5	5	5
English	5	5	5
German	5	5	5
French	5	5	5
Spanish	5	4	4
Russian	4	3	3
Italian	3	2	1

RESEARCH PROJECTS

Participation in more than fifty (50) research projects at the National Technical University of Athens:

[A] 26 European Research Projects funded by the **European Union** (the five of them being the coordinator)

[B] 1 European Project for European Universities Alliances funded by the **European Union** (Coordination of the research of the European University). Scientific responsible for NTUA.

[C] 4 Greek research projects funded by GSRT or the Ministry of Education

[D] 3 industrial research projects funded by **international companies**

[E] 7 industrial research projects funded by **Greek companies – operators**

[F] 5 Research projects funded by **Greek public bodies - Municipalities**

[G] 9 Research projects Participation as an expert-researcher

(For a detailed list of projects, see Appendix pages 7-10):

PUBLICATIONS

More than 300 publications in international journals and proceedings of national-international conferences. S. Karellas has **197 articles** at the Scopus database (www.scopus.com, date of Access 04.01.2025) with **6458 citations** and **h-index 43 (h-index = 42 if self citations are excluded)**. According to the Google Scholar S. Karellas has **220 articles** with **9262 citations** and **h-index 50** (date of access 21.12.2024):

[H] 7 Books

[I] 13 Chapters in books

[J] 131 publications in scientific journals

[K] 77 publications in proceedings of international conferences (Peer Reviewed Papers)

[L] 44 publications in proceedings of international conferences (Abstract Reviewed Papers)

(For a detailed list of publications, see Appendix pages 11-30)

NATIONAL REPRESENTATIVE AT THE EU

- Member of the **Greek delegation** to the Programme Committee “Secure Clean and Efficient Energy” under the Horizon2020, acting as **Expert (June 2014 – April 2019)** and as **National Representative (May 2019 – May 2021)**
- **Alternate National Representative of Greece** to the Coal and Steel Committee (COSCO) (**July 2014 – May 2019**)

GROUPS OF EXPERTS

- Member of the **European Hydrogen Sustainability and Circularity Panel (EHS&CP)**, of the Clean Hydrogen Partnership. Task Force Leader of: Hydrogen End uses (2024 – now).
- Member of the technical group: **TGK2 – Environmental, Technical and Economic Issues Related to Coal Treatment and Use** of the European Research Executive Agency (REA) (2023-2028 mandate).
- Member of the expert group of the **Energy-Platform** of the General Secretariat of Research and Technology (GSRT) in the framework of setting the Smart Specialisation strategy for Research and Innovation (2014-2020).
- Representative of NTUA at the General Assembly of the **Hellenic Foundation for Research & Innovation (HFRI, ΕΛΙΔΕΚ)** 2021-2024.
- Member of the Research Committee of the National Technical University of Athens

INTERNATIONAL SCIENTIFIC COMMITTEES

- Member of the **Editorial Board** of **Renewable Energy** (CiteScore: 18,4 Impact Factor: 9,0), Elsevier, **Associate Editor: Biomass and Solar Thermal** (since 2015), Subject Editor: Solar Thermal and Solid Biomass (2014 - 2015)
- Member of the **Editorial Board** of **Renewable and Sustainable Energy Reviews** (CiteScore: 31,2 Impact Factor: 16,3), Elsevier, **Associate editor: Thermal Processes (including biomass, gasification, waste heat recovery), Life Cycle Analysis (LCA), Life Cycle Cost (LCC) analysis, Carbon Capture and storage-utilization (CCS, CCU)** (since 2017), Associate editor: Energy Economics and Financing (2015-2017), Associate editor: Bioenergy and Hydrogen Energy (2013-2015)
- Member of the **International Editorial Board** (since 2014) and **Guest Editor** of the Special Issues “ORC2019” and “ECOS 2024” of **Energy – The International Journal** (CiteScore: 15,3 Impact Factor 9,0), Elsevier (since 2014)
- **Guest Editor** of the Special issues “ORC 2021”, “ECOS 2023”, and “ECOS 2024” **Applied Thermal Engineering, Elsevier** (CiteScore: 11,3 Impact Factor 6,1)
- **Guest Editor** of the Special issue “ECOS 2024”, Energy Conversion and Management, Elsevier (CiteScore: 19,0 Impact Factor 9,9)
- Member of the **Editorial Board** of the **International Journal on Heat and Mass Transfer - Theory and Applications** (IREHEAT), Praise Worthy Prize (2013-2016)
- Member of the **Editorial Board** of the **ISRN Renewable Energy Journal**, Hindawi Publishing Corporation (2012-2014)
- **Guest Editor** of the special issue “Nanofluids for saving energy”, of the **American Journal of Energy Engineering**, Science Publishing Group (2014-2015)
- **Guest Editor** of the special issue “Novel Analytical and Numerical Methods in Heat Transfer Enhancement and Thermal Management”, of the **Journal of applied Mathematics**, Hindawi (2015)
- Member of the **scientific committee** of the international conferences [ECOS 2022](#), [ECOS 2021](#), [ECOS 2020](#), [ECOS 2019](#), [ECOS 2018](#), [ECOS 2017](#), [ECOS 2016](#), [ECOS 2015](#), [ECOS 2013](#) (Track Director: System Integration, simulation and optimization), [ECOS 2012](#) (Track Director: Fluid Dynamics – Power plants components) and [ECOS 2008](#) Int. Conferences on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems
- **Chair of [ECOS 2023](#)**, 36th International Conference on Efficiency, cost, optimization, simulation and environmental impact of energy systems, Las Palmas de Gran Canaria Spain, June 25-30, 2023, Las Palmas de Gran Canaria, Spain
- **Chair of [ECOS 2024](#)**, 37th International Conference on Efficiency, cost, optimization, simulation and environmental impact of energy systems, Rhodes, Greece, June 30 – July 5, 2024, Rhodes, Greece
- **Chair of [ECOS 2025](#)**, 38th International Conference on Efficiency, cost, optimization, simulation and environmental impact of energy systems, Paris, France, June 29 – July 4, 2025, Paris, France
- Member of the **scientific committee** of the international conferences: **25th, 22nd, 21st and 20th European Biomass Conference and Exhibitions** Setting the course for a biobased economy. Stockholmmässan Stockholm, Sweden 12-15 June 2017, CCH-Congress Center Hamburg, Germany 23-26 June 2014, Bella Center, Copenhagen, Denmark, 3-7 June 2013 (EU BC&E 2013) and Milano Convention Center, Milan Italy, 18-22 June 2012 (EU BC&E 2012)
- Chairman of the international conferences: [ORC 2023](#) (Review Chair), [ORC 2021](#) (Review Chair) and [ORC 2019](#) (Chairman), **International Seminar on ORC Power Systems.**
- Member of the **scientific committee** of the international conferences: **ORC 2017, ORC 2015, ORC 2013, ORC 2011 International Seminar on ORC Power Systems.**
- **Member of the Board** of the Knowledge Center for Organic Rankine Cycle, [KCORC](#) (2010-2024)
- Member of the **scientific committee** of the **15th International Conference on Environmental Science And Technology** 31st August - 2nd September 2017, Rhodes, Greece
- Member of the **honorary committee** of the The 7th World hydrogen technology convention – Czech Hydrogen days 20179 - 12 July 2017
- Panel Leader at the panel 4 Technology, products and systems of the **Industrial Efficiency 2016, organized by the European Council for an Energy Efficient Economy 12–14 September die Kalkscheune, Berlin**
- Reviewer of 41 international **journals** and one **scientific book**

COMMITTEES OF FUNDING BODIES

- **Member of the Review Committees of European Funding bodies:** Clean Hydrogen Partnership, Horizon 2020 (EASME), European Innovation Council Pathfinder, Research Fund for Coal and Steel
- **Member of the Review Committees of National/International Funding bodies:** Latvian Science Council (LV), Research foundation Flanders FWO (BE), Freiburg Inst. For Adv. Studies (FRIAS) and Univ. of Freiburg (DE), National Center of Science and Technology Evaluation (Kazakstan), VQR (IT), Israel's Ministry of Science, Technology and Space (Israel), Rannis – Icelandic Research Fund (IS), Competitive Research Grant (CRG), King Abdullah University of Science and Technology (KAUST) (Saudi Arabia), International Graduate School of Science and Engineering, TU München (DE), Technology foundation STW (NL), Chilean National Science and Technology Commission (Chile), Kuwait Foundation for the Advancement of Sciences (Kuwait), Fundação para a Ciência e Tecnologia (PT), Hellenic foundation for research and innovation (HFRI, ΕΛΙΔΕΚ) (EL), Center for Renewable Energy Systems CRES (EL), General Secretary for Research and Technology GSRT (EL)

INTERNATIONAL EXAMINATION COMMITTEES

- Member of the **examination committee** of the phd thesis of Mr. Andreas Schuster entitled: "Nutzung von Niedertemperaturwärme mit Organic-Rankine-Cycle-Anlagen kleiner Leistung", July 2011 **TU München**
- Member of the **examination committee** of the phd thesis of Mrs Daniela Gewalt entitled: "Waste heat recovery of stationary internal combustion engines for power generation", July 2013 **TU München**
- Member of the **examination committee** of the phd thesis of Mr. Markus Preissingner entitled: "Thermoökonomische Bewertung des Organic Rankine Cycles bei der Stromerzeugung aus industrieller Abwärme", September 2014, **University of Bayreuth**
- Member of the **examination committee** of the phd thesis of Mr. Anish Mody entitled: "Numerical Evaluation of the Kalina Cycle for concentrating solar Power Plants", December 2015, **Technical University of Denmark, DTU**
- Member of the **examination committee** of inquiry in the doctoral thesis of Mr. Kevin Sartor entitled: "Développement d'un outil de simulation et d'analyse technico-économique et environnementale d'un réseau de chaleur", October 2018, **Université de Liège**
- Member of the **examination committee** of the phd thesis of Mrs. Matthildi Apostolou entitled: "Méthodologie pour la conception optimisée des réseaux de chaleur et de froid urbains intégrés", November 2018, **École doctorale Sciences des métiers de l'ingénieur, École nationale supérieure des mines de Paris**
- Member of the **examination committee** of the phd thesis of Mr Dominik Klaus Meinel entitled: "Méthodologie pour la conception optimisée des réseaux de chaleur et de froid urbains intégrés", February 2020, **TU München**
- Member of the **examination committee** of the phd thesis of Mr Wolfgang Raphael Huster entitled: "Hybrid Mechanistic Data-driven Modelling for the Deterministic Global Optimization of Organic Rankine Cycles", September 2020, **RWTH Aachen**
- Member of the **examination committee** of the phd thesis of Mr. Fabian Dawo entitled: "**The Partially Evaporated Organic Rankine Cycles**", January 2024 **TU München**
- Member of the **examination committee** of the phd thesis of Mr. Osama Aljolani entitled: "Thermoökonomische und ökologische Bewertung eines Klimatisierungskonzepts auf Basis des Arbeitsmediums CO₂", June 2024, **University of Bayreuth**
- Member of the **examination committee** of the phd thesis of Mr. Wassim Jouni entitled: "Flexible Thermodynamic Steam Production Architecture", November 2024, **École doctorale Sciences des métiers de l'ingénieur, École nationale supérieure des mines de Paris**
- Member of the Habilitation committee (Gutachter) of Dr.-Ing. Ahmet Lokurlu, "Einsatz von Mittel- und Hochtemperatur-Solarthermie kombiniert mit Geothermie für industrielle Anwendungen und Gebäudekühlung, sowie Langzeitspeicherung", November 2022, Universität Duisburg-Essen.

MEMBERSHIP OF PROFESSIONAL BODIES

- Member of the Technical Chamber of Greece
- Member of the Onassis Foundation Fellows
- Member of the "Verein Deutscher Ingenieure - Gesellschaft Energietechnik (VDI-GET) "
- President of the Greek PhD candidates association of TU München Greeks@TUM (2003-2005)
- Member of ASHRAE (American Society of Heating, Refrigerating and Air Conditioning Engineers)

PERSONAL INFORMATION

- **Music: Piano** (Degree from the Music School of NTUA, 1998), **Accordeon** (Degree and distinction from the National Music School, Chalandri, 2001), **Eufonio** (Distinction as member of the Philharmonic Orchestra of the Municipality of Chalandri-Greece, 1999), **Traditional Music Instruments** (Tzouras, Baglamas)
- Other activities: **Sports** (Mountain Bike, Medium Distance Running, Volleyball, Basketball, Ski), **Literature, Chess**
- Military service: Sargent of the Engineering Body of the Greek Army (2006 – 2007)

APPENDIX

LIST OF PROJECTS

[A] European Research Projects funded by the EU

[A1] CO2freeSNG2.0: Advanced Substitute Natural Gas from Coal with Internal Sequestration of CO₂, (July 2013 – June 2016) www.co2freesng20.eu/index.shtml

Funding: EU - Program. Research Fund For Coal and Steel (RFCS) 2012

NTUA Budget (EU Contribution): €242.877,00

[A2] EXP-HEAT: Energy recovery in new and retrofitted heat pumps using a dedicated expander concept (December 2013 - May 2017), www.expheat.eu Funding: EU - Program. FP7, Research for the benefit of SMEs Coordinator: National Technical University (S. Karellas) NTUA Budget (EU Contribution): €414.880,00

[A3] CO2-GLASS: CO₂ reduction in the ETS glass industry by means of waste heat utilization (Dec. 2013 – Dec. 2018) Funding: EU - Program. CIP-SILC 2013 Coordinator: National Technical University (S. Karellas) NTUA Budget (EU Contribution): €117.035,70

[A4] BIOFFICIENCY: Highly-efficient biomass CHP plants by handling ash-related problems (Nov. 2016 – Oct. 2019) www.bioefficiency.eu Call: H2020-LCE-2016-2017 (Competitive Low-Carbon Energy), Topic: LCE-07-2016-2017, NTUA Budget: €277.000,00, Total Budget: €4.603.760,00

[A5] ZEOSOL: Integrated solar heating and cooling unit based on a novel zeolite chiller and heat pump (June 2017 - February 2020), www.zeosol.eu Funding: EU - Program. H2020-FTIPilot-2016-1, Fast Track to Innovation Pilot Coordinator: National Technical University (S. Karellas) NTUA Budget: €493.875,00, Total Budget: €2.751.875,00

[A6] HYBUILD: Innovative compact HYbrid electrical/thermal storage systems for low energy BUILDings (October 2017 - September 2021), www.hybuild.eu Call: H2020-EEB-2016-2017 (Call for Energy Efficient Buildings), Topic: EEB-06-2017, NTUA Budget: €288.750,00, Total Budget: € 5.995.840,00

[A7] BIOCONCO2: BIotechnological processes based on microbial platforms for the CONversion of CO₂ from iron-steel industry into commodities for chemicals and plastics (November 2017 – October 2021), www.biocon-co2.eu/ Call: LCE-07-2016-2017 (Call for Nanotechnologies, advanced materials, biotechnology and production), Topic: BIOTEC-05-2017, NTUA Budget: €413.825, Total Budget: €6.999.886,25

[A8] M-Benefits: Valuing and Communicating Multiple Benefits of Energy-Efficiency Measures (June 2018 - May 2021) www.mbenefits.eu, Call: H2020-EE-2016-2017, Topic: EE-15-2017 NTUA Budget: €81.258,75, Total Budget: €1.868.490,00

[A9] SWSHeating: Development and Validation of an Innovative Solar Compact Selective-Water-Sorbent-Based Heating System (June 2018 – November 2023), www.swsheating.eu Coordinator: National Technical University (S. Karellas) NTUA Budget: €710.625,00, Total Budget: € 5.236.488,75

[A10] SolBio-Rev: Solar Biomass Reversible energy system for covering a large share of energy needs in buildings (May 2019 – April 2024), <http://www.solbiorev.eu/> Call: H2020-Lc –SC3-2018-2019-2020, Topic: LC –SC3-RES-4-2018 Coordinator: National Technical University (S. Karellas) NTUA Budget: €844.250,00, Total Budget: €4.790.536,25

[A11] HYFLEXPower: Hydrogen as a FLEXible energy storage for a fully renewable European POWER system. (May 2020 – April 2024), <https://www.hyflexpower.eu/> Call: H2020-LC-SC3-2019-NZE-RES-CC, Topic: LC-SC3-NZE-4-2019 NTUA Budget: €255.250,00, Total Budget: € 15.252.168,70

[A12] REGEN-BY-2: Next Renewable multi-GENeration technology enabled by TWO-phase fluids machines. (September 2020 – February 2025), <https://www.regen-by-2.eu/> Call: H2020-LC-SC3-2019-RES-TwoStages, Topic: LC-SC3-RES-1-2019-2020, NTUA Budget: €423.250,00, Total Budget: € 5.419.327,50

[A13] ReDREAM: Real consumer engagement through a new user-centric ecosystem Development for End-users' Assets in a Multi-market scenario. (October 2020 – September 2024) <https://redream-energy-network.eu/> Call: H2020-LC-SC3-2020-EC-ES-SCC Topics: LC-SC3-EC-3-2020 – Consumer engagement and demand response NTUA Budget: €321.625,00, Total Budget: €7.204.492,5

[A14] RESPONSE: integRatEd Solutions for Positive eNergy and reSilient citiEs (November 2020 - October 2024) <https://h2020response.eu/>, NTUA Budget: € 136.000,00, Total Budget: € 23.475.257,25

[A15] Retradables, LIFE3R: Circular economy ecosystem to Recover, Recycle and Re-use F-gases contributing to the depletion of greenhouse gases (July 2020 - June 2023) <https://retradeables.com/> NTUA Budget (EU Contribution): € 283.005,00, Total Budget: € 2.893.704,00

[A16] ENGIMMONIA: Sustainable technologies for future long distance shipping towards complete decarbonisation. (May 2021 – April 2025), Call: H2020-MG-2018-2019-2020, Topic: LC-MG-1-13-2020 NTUA Budget: €514.500,00, Total Budget: € 9.500.000,00

[A17] GreenDEALCO2: Green Deployment of E-fuels and Liquids based on CO₂ for closed and end-of-life coal-related assets (July 2021 – June 2023), Call: RFCS2020 Call of the research fund for Coal and Steel – 2020
NTUA Budget: €319.870,00 (EU Contribution €191.922,00), Total Budget: € 2.559.809,70

[A18] FRONTSH1P: A FRONTrunner approach Transition to a circular & resilient future: deployment of systemic solutions with the support of local clusters and the development of regional community-based innovation schemes (October 2021 – September 2025), Call: H2020-LC-GD-2020 (Building a low-carbon, climate resilient future: Research and innovation in support of the European Green Deal), Topic: LC-GD-3-2-2020
NTUA Budget: €752.875,00, Total Budget: €18.968.452,50, Scientific Responsibilities: Prof. I. Paspaliaris, Prof. S. Karellas

[A19] Innovative and smart maintenance in solar energy systems (ERASMUS+)
(Feb. 2021 – Dec. 2022), Total Budget: € 34.368,00

[A20] ZHENIT: Zero waste Heat vessel towards relevant ENergy savings also thanks to IT technologies (June 2022 – November 2025), Horizon Europe, Call: HORIZON-CL5-2021-D5-01, Topic: HORIZON-CL5-2021-D5-01-10, NTUA Budget: €656.500,00, Total Budget: €4.383.488,25

[A21] DECAGONE: DEmonstrator of industrial CARbon-free power Generation from Orc-based waste-heat-to-Energy systems (June 2022 – May 2026), Horizon Europe, Call: HORIZON-CL5-2021-D4-01, Topic: HORIZON-CL5-2021-D4-01-05, NTUA Budget: €429.875,00, Total Budget: €18.313.657,50

[A22] TRIERES: Towards the development of a hydrogen valley demonstrating applications in an integrated ecosystem in Greece (July 2023 – April 2028), Horizon Europe, Call: HORIZON-JTI-CLEANH2-2022-2, Topic: HORIZON-JTI-CLEANH2-2022-06-02, NTUA Budget: €478.500,00, Total Budget: €10.258.842,00

[A23] CarbonNeutralLNG: Truly Carbon Neutral electricity enhanced Synthesis of Liquefied Natural Gas (LNG) from biomass (November 2022 – October 2025), Horizon Europe, Call: HORIZON-CL5-2021-D3-03, Topic: HORIZON-CL5-2021-D3-03-03, NTUA Budget: €304.500,00, Total Budget: €3.306.160,00

[A24] HICON: Highly Efficient Reactor for Conversion of CO₂ and H₂O to Carbon Neutral Fuels and Chemicals. (Nov. 2023 – Oct. 2026), Call: HORIZON-EIC-2023-PATHFINDEROPEN-01, Topic: HORIZON-EIC-2023-PATHFINDEROPEN-01-01 NTUA Budget: €447.500,00, Total Budget: € 2.983.000,00

[A25] HYCOFLEX: Hydrogen as a FLEXible energy storage for a fully renewable European POWER system. (Febr. 2024 – Oct. 2026), Call: H2020-LC-SC3-2019-NZE-RES-CC, Topic: LC-SC3-NZE-4-2019 NTUA Budget: €255.250,00, Total Budget: € 7.073.275,00

[A26] FlexGeo: Pathing the Way for Flexible Geothermal Energy Systems with Reversible ORC Systems, Advanced Control and Novel System Designs (June 2024 – May 2028), Call: HORIZON-CL5-2023-D3-02, Topic: HORIZON-CL5-2023-D3-02-06 NTUA Budget: €497.137,50, Total Budget: €5.662.113,75

[B] European project funded by the EU regarding the European University Alliance EULIST

[B1] EULIST: European Universities Linking Society and Technology, (November 2023 – October 2027), Call: ERASMUS-EDU-2023-EUR-UNIV, Topic: ERASMUS-EDU-2023-EUR-UNIV-02 NTUA Budget: € 1.647.512,00, Total Budget: € 14.370.932,00

[C] Greek Research Projects (National Strategic Reference Framework (NSRF) funding)

[C1] BioTRIC: Detailed Investigation and Optimization of Operation and Design of a Hybrid Biosystems Tri-production using a Supercritical Cycle Organic Rankine.

Funding: GSRT – ARISTEIA II (Feb. 2014 - July 2015)

NTUA Budget: € 250.000,00

[C2] SunClim: Integrated Solar Heating and Cooling System.

Funding: GSRT (Aug. 2018 - Jun. 2022), Partners: Cosmosolar ΕΠΕ (Coordinator), Prime Laser Technologies ABEE, AUTH, NTUA Budget: € 190.887,00, Total Budget: €896.832,16

[C3] Tes4Trig: Thermal Energy Storage for On-demand Solar Trigenation

Funding: GSRT, CSP ERANET, Partners NCSR “DEMOKRITOS”, Solar & other Energy Systems Laboratory (EL) (DE), Solar-Institut Jülich of the Aachen University of Applied Sciences (DE), CADE Soluciones de Ingeniería, S.L. (ES), Protarget AG (DE) MES ENERGY SA (EL)

NTUA Budget: € 117.000,00, Total Budget: €1.005.906,00

[C4] BioUP (Sustainable Biomethane Upgrading Processes)

Funding: Ministry of Education, Clusters of Research Excellence (CREs)

NTUA Budget: € 440.747,66, Total Budget: € 1.800.000,00

[D] Industrial Projects (Funded by International companies)

[D1] Marine ORC- Design and construction of ORC for marine applications

Funding: Det Norske Veritas AS (DNV) (Norway) (May 2013 - February 2015), Total Budget: € 92.250,00 (€75.000,00 + €17.250,00 VAT)

[D2] P2GCOs: Support of HPE on Power-to-Gas activities

Funding: Hitachi Power Europe GmbH (Germany) (January 2014 - February 2015), Total Budget: € 51.660,00 (€42.000,00 + €9.660,00 VAT).

[D3] Technical services for environmental and energetic measurements at the thermal power of KOSOVO B

Funding: Ambiente S.C. (April 2016 - December 2018), Total Budget: € 89.900,00 (€72.500,00 + €17.400,00 VAT)

[E] Research Projects (Funded by Greek companies or entities)

[E1] Techno-economic study of best energy performance requirements of buildings

Funding: Various bodies (March 2015 - December 2016), Total Budget: € 50.000,00

[E2] Technological and economic analysis power scenarios in Greece

Funded: EVIKEN (May 2015 - July 2015), Total Budget: € 7.380,00 (€6.000,00 + €1.380,00 VAT)

[E3] Waste heat recovery in natural gas compression stations of the pipeline TAP

Funding: TransAdriaticPipelineAG Greece (June 2015-July 2015), Total Budget: €12.915,00(€10.500,00 +€2.415,00VAT)

[E4] Carrying out and evaluation combined cycle units performance test

Funding: METKA SA (May 2013 to October 2013), Total Budget: € 7.380,00 (€6.000,00 + €1.380,00 VAT)

[E5] Evaluation of the effect of dry additives (Limestone) in boiler efficiency level and the reduction of SO₂ emissions of SES Amyntaion

Funding: PPC (July 2011 - July 2012), Total Budget: € 54.070,80 (€43.960,00 + €10.110,80 VAT)

[E6] Technical service and use of technical equipment for energy and environmental measurements in Agios Dimitrios Steam Power Plant of PPC

Funding: TÜV HELLAS A.E. (March 2016 - December 2021), Total Budget: € 123.000,00 (€100.000,00 + €23.000,00 VAT)

[E7] Plan for the replacement of the use of lignite in Western Macedonia and Megalopoli

Funding: GRANT THORNTON (September 2020 - March 2021), Total Budget: €18.600,00 (€15.000,00 + €3.600,00 VAT)

[F] Research programmes (Funded by Greek public bodies)

[F1] Consulting for CHP unit at the municipal Swimming center of Marathon

Funding: Municipality of Marathon (January 2012 - April 2013), Total Budget: € 6.765,00 (€5.500,00 + €1.265,00 VAT)

[F2] Consulting services for Energy Recovery from Municipal Waste (Phase 1)

Funding: Municipality of Vari-Voula-Vouliagmeni (July 2016 - May 2017), Total Budget: € 24.552,00 (€19.800,00 + €4.752,00 VAT)

[F3] Consulting services for Energy Recovery from Municipal Waste (Phase 2)

Funding: Municipality of Vari-Voula-Vouliagmeni (February 2018 - June 2019), Total Budget: € 29.884,00 (€24.100,00 + €5.784,00 VAT)

[F4] Consulting services for Energy Efficiency in buildings within the framework of the EU Project PRODESA

Funding: Municipality of Vari-Voula-Vouliagmeni (March 2018 - June 2018), Total Budget: € 60.000,00 (€48.387,10 + €11.612,90 VAT)

[F5] Techno-economic study of minimum energy requirements of buildings and building elements. Definition of reference nearly zero energy buildings

Funding: CRES (January 2017 - January 2018), Total Budget: € 69.440,00 (€56.000,00 + €13.440,00 VAT).

[G] Participation in research programs of other scientific responsables

[G1] Development of a small-scale low-temperature supercritical organic Rankine cycle with optimized scroll expander and evaporator, Funding: GSRT - COOPERATION II (April 2013 - July 2015),

Scientific Responsible: Prof. K. Giannakoglou

[G2] Investigation of the penetration margins of all RES technologies in the non-interconnected islands

Funding: DEDDHE SA. (October 2013 – October 2014).

Scientific Responsible: Prof. S. Papathanasiou

[G3] Preparatory studies for three Product Groups in the Ecodesign Working Plan 2012-2014, Lot7: Steam Boilers

Financing: European Union (June 2013 - September 2014), Scientific Responsible: Prof. I. Psarras

[G4] WASSERMOD, Financing: GSRT – Greek-German Cooperation (June 2018 - July 2021),

Scientific Responsible: Assoc. Prof. G. Papadopoulos

[G5] PLURAL: Plug-and-use renovation with adaptable lightweight systems

(October 2020 – September 2024), Call: H2020-NMBP-ST-IND-2020-singlestage, Topic: LC-EEB-04-2020 - Industrialisation of building envelope kits for the renovation market (IA)

NTUA Budget: €1.026.812,50 , Total Budget: €7.973.817,70

Scientific Responsible: Prof. M. Founti

[G6] HEPHAESTUS: Heavy and Extractive industry wastes PHAsing out through ESG Tailings Upcycling Synergy (June 2022 – November 2026), Horizon Europe

NTUA Budget: €1.623.125,00

Scientific Responsible: Prof. D. Pantias

[G7] NAVGREEN: Green shipping of zero carbon footprint

(21.07.2023 – 14.09.2025), ΕΛΛΑΔΑ 2.0-TAMEIO ANAKAMΨΗΣ ΚΑΙ ΑΝΘΕΚΤΙΚΟΤΗΤΑΣ, ΓΓΕΚ)

Budget: €649.233,52.

Scientific Responsible: Prof. D. Lyridis

[G8] PUSH-CCC: Pushing the limits of large-scale energy storage: Optimized Combined Cycle CAES

(October 2023 – September 2027), NTUA Budget: €255.587,50, Total Budget: €3.426.308,75.

Scientific Responsible: Assist. Prof. K. Braimakis

[G9] GreeNest: NEST InGrained ecosystem foR zEro EmissioN buildings

(January 2024 – December 2027), Call: HORIZON-CL5-2023-D4-01, Topic: HORIZON-CL5-2023-D4-01-01

NTUA Budget: €701.312,50 , Total Budget: €6.548.762,50.

Scientific Responsible: Prof. M. Founti

LIST OF PUBLICATIONS

[H] BOOKS

[H1] Online analysis of the composition of biogenous gases and their effect on microturbine and fuel cell systems (PhD Thesis)

S. Karellas

VDI Verlag, Reihe 6 Energietechnik, Nr. 537, ISBN 3-18-353706-0

[H2] Pollution Abatement Technology for thermal plants (In Greek)

E. Kakaras, S. Karellas

Tsotras 2013, ISBN 978-618-5066-00-0

[H3] Decentralized thermal systems (In Greek)

E. Kakaras, S. Karellas

Tsotras 2015, ISBN: 978-618-5066-25-3

[H4] Solar Cooling Applications

S. Karellas, T. C. Roumpedakis, N. Tzouganatos, K. Braimakis

Taylor and Francis 2018, ISBN 9781138060173, Series: Energy Systems

[H5] Heat Transfer (From Physics to Mechanical Engineering) (In Greek)

S. Karellas, E. Kakaras, T. C. Roumpedakis

Tsotras 2022, ISBN 975-618-5495-98-5

[H6] Power-to-X (Energy Storage Technologies) (under preparation)

S. Karellas, E. Kakaras, K. Braimakis

Tsotras 2025, ISBN 978-618-217-096-0

[H7] Energy management and energy efficiency (In Greek) (under preparation)

S. Karellas, P. Pallis

Tsotras 2025, ISBN 978-618-217-089-2

[I] CHAPTERS IN BOOKS

[I1] Heat transfer in Organic Rankine Cycle Applications S. Karellas, A.-D. Leontaritis, G. Panousis
Chapter 10 pp. 339-386, in Advances in Industrial Heat Transfer. Editor: Alina-Adriana Minea, Taylor and Francis, CRC press 2012, ISBN 978-1-4398-9907-6

[I2] Renewable and Conventional electricity generation systems: technologies and diversity of energy systems
G. Kosmadakis, S. Karellas, E. Kakaras. Chapter 1 in Renewable Energy Governance. Complexities and Challenges. Series: Lecture Notes in Energy, 57 Editors: Dr. E. Michalena and Dr. J. Hills. Springer 2013, ISBN 978-1-4471-5594-2

[I3] Hydrogen production from biomass gasification. S. Karellas
Chapter 4 in Hydrogen production from renewable resources. Biofuels and biorefineries 5
Editors: Zhen Fang, Richard L. Smith Jr., Xinhua Qi, Springer 2015, ISBN 978-94-017-7329-4

[I4] EU Emissions Trading Scheme Application in Bulgaria, Greece and Romania from 2008 to 2012
C.-S. Chatzilau, D. Giannakopoulos, S. Karellas, E. Kakaras
Chapter 4 in Carbon Management, Technologies and Trends in Mediterranean Ecosystems, Editors: Sabit Erşahin, Selim Kapur, Erhan Akça, Ayten Namli, Hakkı Emrah Erdoğan, Springer 2017, ISBN 978-3-319-45034-6

[I5] Comparison of environmentally friendly working fluids for Organic Rankine power cycles
K. Braimakis, T. C. Roumpedakis, A.-D. Leontaritis, S. Karellas
Chapter 13 in Advances in Heat Transfer Fluids: from Numerical to Experimental Techniques, Taylor and Francis, CRC Press 2017, ISBN 9781498751858

[I6] Hydrogen production and storage
T. Roumpedakis, P. Vlavakis, K. Braimakis, D. Grimekis, S. Karellas
Chapter 6 in Advances in Renewable Energy Engineering: Solar, Wind, Biomass, Hydrogen and Geothermal Energy Systems. Recent Advances in Renewable Energy Vol.3. Editors: Emmanuel D. Rogdakis, Irene P. Koronaki
Bentham Books 2018, ISBN 978-1-68108-720-7

[I7] Ενεργειακές Πηγές στην Ελλάδα και δυνατότητες αξιοποίησής τους
Δ. Γιαννακόπουλος, Χ. Χατζηλάου, Ι. Δολιανίτης, Ν. Πλυτάς, Σ. Καρέλλας
Κεφ. 1^ο στον τόμο: Ενέργεια και Τοπικές Κοινωνίες. Εθνικό Κέντρο Κοινωνικών Ερευνών, Ινστιτούτο Κοινωνικών Ερευνών, Εκδότες: Ι. Τσίγκανου, Ρ. Κινητή, Αθήνα 2018. ISBN: 978-960-6834-25-7

[I8] Κοινωνικο-οικονομικές επιπτώσεις από την εγκατάσταση και λειτουργία συμβατικών και ανανεώσιμων πηγών ενέργειας. Βιβλιογραφική ανασκόπηση. Δ. Γιαννακόπουλος, Χ. Χατζηλάου, Ι. Δολιανίτης, Ν. Πλυτάς, Σ. Καρέλλας
Κεφ. 2^ο στον τόμο: Ενέργεια και Τοπικές Κοινωνίες Εθνικό Κέντρο Κοινωνικών Ερευνών, Ινστιτούτο Κοινωνικών Ερευνών, Εκδότες: Ι. Τσίγκανου, Ρ. Κινητή, Αθήνα 2018. ISBN: 978-960-6834-25-7

[I9] Solar Thermal Power Plants. S. Karellas, T. C. Roumpedakis
Chapter 7 in Solar Hydrogen Production, Processes, Systems and Technologies, F. Calise, M. Dentice D'Accadia, M. Santarelli, A. Lanzini, D. Ferrero, Academic Press (Elsevier) 2019, ISBN 9780128148532

[I10] Determination of Energy Efficiency of Hot Water Boilers and Calculation of Measurement Uncertainties
S. Karellas, P. Vourliotis, P. Pallis, I.-A. Sofras, E. Kakaras
Chapter in The Art of Measuring in Thermal Sciences, CRC Press (Taylor and Francis, Series: Heat Transfer, Series Editors: Prof Josua Meyer, Prof. Michel de Paepe) 2020, ISBN 9780367192907

[I11] Numerical methods for solid-liquid phase-change problems
M. Zeneli, A. Nikolopoulos, S. Karellas, N. Nikolopoulos
Chapter in ultra-high temperature thermal energy storage, transfer and conversion, Editor: Alejandro Datas, Academic Press (Elsevier) 2020, ISBN 9780128199558

[I12] Organic Rankine Cycle systems for waste heat recovery in thermal power plants
K. Braimakis, S. Karellas
Chapter in Small Scale Power Generation Handbook, Series: Heat Transfer, Series Editors: Umberto Desideri, Lorenzo Ferrari, Academic Press (Elsevier) 2021, ISBN 9780128216729

[I13] Microbial CO₂ Conversion Routes. D. Magiri-Skouloudi, E. Topakas, S. Karellas
Chapter in Green Chemistry Series No. 74, Chemical Valorisation of Carbon Dioxide
Editors: Georgios Stefanidis and Andrzej Stankiewicz, The Royal Society of Chemistry 2023 Published by the Royal Society of Chemistry, www.rsc.org, 2023, ISBN-10: 1839164077. ISBN-13: 978-1839164071

[J] PUBLICATIONS IN SCIENTIFIC JOURNALS

[J1] Compressor intake air cooling in gas turbine power plants

E. Kakaras, A. Doukelis, S. Karellas

Energy, volume 29, issues 12-15, pp.2347-2358, October-December 2004

<http://dx.doi.org/10.1016/j.energy.2004.03.043>

[J2] Inlet air cooling methods for gas turbine based power plants

E. Kakaras, A. Doukelis, A. Prelipceanu, S. Karellas

Journal of Engineering for Gas Turbines and Power, Volume 128, pp. 312-317, April 2006

<http://dx.doi:10.1115/1.2131888>

[J3] Analysis of the product gas from biomass gasification by means of laser spectroscopy

S. Karellas, J. Karl

Optics and Lasers in Engineering, volume 45/9, pp. 935-946, September 2007

<http://dx.doi.org/10.1016/j.optlaseng.2007.03.006>

[J4] Simulation of an innovative stand-alone solar desalination system with an Organic Rankine Cycle

A. Schuster, J. Karl, S. Karellas

International Journal of Thermodynamics, Vol. 10 (No.4), pp. 155-163, December 2007

[J5] An Innovative Biomass Gasification Process and its Coupling with Microturbine and Fuel Cell Systems

S. Karellas, J. Karl, E. Kakaras

Energy, Volume 33/2, pp. 284-291, February 2008 <http://dx.doi.org/10.1016/j.energy.2007.06.006>

[J6] Hydrogen production from allothermal gasification by means of palladium membranes

S. Karellas, E. Kakaras, T. Papadopoulos, C. Schäfer, J. Karl

Fuel Processing Technology 89/6 (2008) pp. 582-588, June 2008 <http://dx.doi.org/10.1016/j.fuproc.2007.11.033>

[J7] Supercritical fluid parameters in Organic Rankine Cycle applications

S. Karellas, A. Schuster

International Journal of Thermodynamics, Vol. 11 (No.3), pp. 101-108, September 2008

[J8] Techno-economic analysis of the energy exploitation of biomass residues in Heraklion Prefecture-Crete

I. Boukis, N. Vassilakos, S. Karellas, E. Kakaras

Renewable and Sustainable Energy Reviews, 13/2, pp. 362-377, February 2009

<http://dx.doi.org/10.1016/j.rser.2007.10.006>

[J9] Comparative techno-economic analysis of ORC and gasification for bioenergy applications

A. Rentizelas, S. Karellas, E. Kakaras, I. Tatsiopoulos

Energy Conversion and Management, 50/3, pp. 674-681, March 2009

<http://dx.doi.org/10.1016/j.enconman.2008.10.008>

[J10] Conversion of Syngas from Biomass in Solid Oxide Fuel Cells

J. Karl, N. Frank, S. Karellas, M. Saule, U. Hohenwarter

Journal of Fuel Cell Science and Technology, Vol.6, May 2009, <http://dx.doi:10.1115/1.2971172>

[J11] Policy plan for the use of biomass and biofuels in Greece, Part II: Logistics and economic investigation

I. Boukis, N. Vassilakos, G. Kontopoulos, S. Karellas

Renewable and Sustainable Energy Reviews, 13, pp. 703-720, May 2009, <http://dx.doi.org/10.1016/j.rser.2008.02.008>

[J12] Policy plan for the use of biomass and biofuels in Greece, Part I: Available biomass and methodology

I. Boukis, N. Vassilakos, G. Kontopoulos, S. Karellas

Renewable and Sustainable Energy Reviews, 13, pp. 971-985, June 2009, <http://dx.doi.org/10.1016/j.rser.2008.02.007>

[J13] Energetic and economic investigation of Organic Rankine Cycle

A. Schuster, S. Karellas, E. Kakaras, H. Spliethoff

Applied Thermal Engineering, 29, pp. 1809-1817, June 2009, <http://dx.doi.org/10.1016/j.applthermaleng.2008.08.016>

[J14] Efficiency optimization potential in supercritical Organic Rankine Cycles

A. Schuster, S. Karellas, R. Aumann

Energy, 35, pp. 1033-1039, February 2010, <http://dx.doi.org/10.1016/j.energy.2009.06.019>

[J15] Development of an investment decision tool for biogas production from agricultural wastes

S. Karellas, I. Boukis, G. Kontopoulos

Renewable and Sustainable Energy Reviews, 14, pp. 1273-1282, May 2010. <https://doi.org/10.1016/j.rser.2009.12.002>

- [J16] Investigation of an Autonomous Hybrid Solar Thermal ORC - PV RO Desalination System to supply with potable water. The Chalki Island Case**
S. Karellas, K. Terzis, D. Manolakos
Renewable Energy, 36, pp. 583-590, February 2011. <http://dx.doi.org/10.1016/j.renene.2010.07.012>
- [J17] Tar analysis from biomass gasification by means of online fluorescence spectroscopy**
C. Baumhagl, S. Karellas
Optics and Lasers in Engineering, 49, 7, 885-891, July 2011. <http://dx.doi.org/10.1016/j.optlaseng.2011.02.015>
- [J18] Numerical investigation of the grid spatial resolution and the anisotropic character of EMMS in CFB multiphase flow**
K. Atsonios, A. Nikolopoulos, S. Karellas, N. Nikolopoulos, P. Grammelis, E. Kakaras
Chemical Engineering Science, 66, 17, 3979-3990, September 2011. <http://dx.doi.org/10.1016/j.ces.2011.05.024>
- [J19] The Solid Recovered Fuel Stabilat®: characteristics and fluidised bed gasification tests.** G. Dunnu, K. D. Panopoulos, S. Karellas, J. Maier, S. Touliou, G. Koufodimos, I. Boukis, E. Kakaras
FUEL, 93, pp. 273-283, March 2012. <http://dx.doi.org/10.1016/j.fuel.2011.08.061>
- [J20] Numerical investigation on the application of a lignite pre-drying concept in an existing Greek power plant**
M. Agraniotis, S. Karellas, I. Violidakis, A. Doukelis, P. Grammelis, E. Kakaras,
Thermal Science, 16/1, pp. 283-296, Year 2012. <http://www.doiserbia.nb.rs/Article.aspx?id=0354-98361100120A>
- [J21] Influence of Supercritical ORC parameters on plate Heat Exchanger Design**
S. Karellas, A. Schuster, A.-D. Leontaritis
Applied Thermal Engineering, 33-34, 1 pp. 70-76, Febr. 2012. <http://dx.doi.org/10.1016/j.applthermaleng.2011.09.013>
- [J22] Waste heat recovery from a landfill gas-fired power plant**
D. Gewald, K. Siokos, S. Karellas, H. Spliethoff
Renewable and Sustainable Energy Reviews, 16,4, pp. 1779-1789, May 2012.
<http://dx.doi.org/10.1016/j.rser.2012.01.036>
- [J23] Integrated system approach for increase of engine combined cycle efficiency**
D. Gewald, S. Karellas, A. Schuster, H. Spliethoff
Energy Conversion and Management, 60, pp. 36-44, August 2012
<http://dx.doi.org/10.1016/j.enconman.2011.10.029>
- [J24] Investigation of technical and economic aspects of pre-dried lignite utilisation in a modern lignite power plant toward zero CO₂ emissions**
M. Agraniotis, A. Koumanakos, A. Doukelis, S. Karellas, E. Kakaras
Energy, 45 (1), pp. 134-141, September 2012
<http://dx.doi.org/10.1016/j.energy.2012.01.063>
- [J25] An evaluation of Substitute Natural Gas production from different coal gasification processes based on modeling**
S. Karellas, K.D. Panopoulos, G. Panousis, A. Rigas, J. Karl, E. Kakaras
Energy, 45 (1), pp. 183-194, September 2012. <http://dx.doi.org/10.1016/j.energy.2012.03.075>
- [J26] Investigation of pre-drying lignite in an existing Greek power plant**
M. Agraniotis, S. Karellas, I. Violidakis, A. Doukelis, P. Grammelis E. Kakaras
Thermal Science 16 (1), pp.283-296, Belgrade 2012. <http://www.doiserbia.nb.rs/Article.aspx?id=0354-98361100120A>
- [J27] Investigation of proper modeling of very dense granular flows in the recirculation system of CFBs**
A. Nikolopoulos, N. Nikolopoulos; N. Varveris, S. Karellas, E. Kakaras
Particuology 10 (6), pp. 699-709, December 2012. <https://dx.doi.org/10.1016/j.partic.2012.09.001>
- [J28] Energetic and Exergetic analysis of waste heat recovery systems in the cement industry**
S. Karellas, A.-D. Leontaritis, G. Panousis, E. Bellos, E. Kakaras
Energy 58, pp. 147-156, September 2013. <http://dx.doi.org/10.1016/j.energy.2013.03.097>
- [J29] A decoupled approach for NO_x – N₂O 3-D modeling in CFB plants**
A. Nikolopoulos, I. Malgarinos, N. Nikolopoulos, P. Grammelis, S. Karellas, E. Kakaras
Fuel, 115, pp. 401-415, January 2014. <http://dx.doi.org/10.1016/j.fuel.2013.06.036>
- [J30] Comparison of the performance of compressed-air and hydrogen energy storage systems. Karpathos island case study**
S. Karellas, N. Tzouganatos
Renewable and Sustainable Energy Reviews, 29, 865–882, January 2014. <http://dx.doi.org/10.1016/j.rser.2013.07.019>

- [J31] Circulating fluidized bed gasification of 1st and 2nd generation biofuel seed cakes after oil extraction**
C. Christodoulou, D. Grimekis, K.-D. Panopoulos, D. Vamvuka, S. Karellas, E. Kakaras
FUEL, 132, pp. 71-81, 15 September 2014. <http://dx.doi.org/10.1016/j.fuel.2014.04.012>
- [J32] Economic evaluation of decentralized pyrolysis for the production of bio-oil as an energy carrier for improved logistics towards a large centralized gasification plant**
K. Braimakis, K. Atsonios, K. D. Panopoulos, S. Karellas, E. Kakaras
Renewable and Sustainable Energy Reviews, 35, pp. 57-72, July 2014. <http://dx.doi.org/10.1016/j.rser.2014.03.052>
- [J33] Modelling and assessment of acid gas removal processes in coal-derived SNG production**
E.-I. Koytsoumpa, K. Atsonios, K. D. Panopoulos, S. Karellas, E. Kakaras, J. Karl
Applied Thermal Engineering, 74, pp. 128-135, January 2015. <http://dx.doi.org/10.1016/j.applthermaleng.2014.02.026>
- [J34] Agglomeration problems during cardoon fluidized bed gasification**
C. Christodoulou, E. -I. Koytsoumpa, K. D. Panopoulos, S. Karellas, E. Kakaras
Thermal Science, Volume 18, Issue 2, pp. 645-656, 2014.
<http://www.doiserbia.nb.rs/Article.aspx?id=0354-98361300132C>
- [J35] Comparison of Waste-to-Energy processes by means of Life Cycle Analysis Principles regarding the Global Warming Potential Impact: Applied Case Studies in Greece, France and Germany**
D.-S. Kourkoumpas, S. Karellas, S. Kouloumoundras, G. Koufodimos, P. Grammelis, E. Kakaras
Waste and Biomass Valorization, Springer, DOI 10.1007/s12649-015-9367-2, April 2015
- [J36] Low grade waste heat recovery with subcritical and supercritical Organic Rankine Cycle based on natural refrigerants and their binary mixtures**
K. Braimakis, M. Preißinger, D. Brüggemann, S. Karellas, K. Panopoulos
Energy, 88, pp. 80-92, August 2015
<http://dx.doi.org/10.1016/j.energy.2015.03.092>
- [J37] A small power recovery expander for heat pump COP improvement**
G. Ferrara, L. Ferrari, D. Fiaschi, G. Galoppi, S. Karellas, R. Secchi, D. Tempesti
Energy Procedia, 81, pp. 1151-1159, December 2015. <http://dx.doi.org/10.1016/j.egypro.2015.12.140>
- [J38] Exergy analysis on solar thermal systems: A better understanding of their sustainability**
S. Kalogirou, S. Karellas, V. Badescu, K. Braimakis
Renewable Energy, 85, pp. 1328–1333, January 2016. <http://dx.doi.org/10.1016/j.renene.2015.05.037>
- [J39] Energy-exergy analysis and economic investigation of a cogeneration and trigeneration ORC-VCC hybrid system utilizing biomass fuel and solar power**
S. Karellas, K. Braimakis
Energy Conversion and Management, 107, pp. 103–113, January 2016
<http://dx.doi.org/10.1016/j.enconman.2015.06.080>
- [J40] An investigation of the techno-economic parameters for the Power to Methanol concept**
D.-S. Kourkoumpas, E. Papadimou, K. Atsonios, S. Karellas, P. Grammelis and E. Kakaras,
International Journal of Hydrogen Energy, 41/38, pp. 16674-16687, October 2016,
<http://dx.doi.org/10.1016/j.ijhydene.2016.07.100>
- [J41] Combustion and Emissions in an HSDI Engine Running on Diesel or Vegetable Oil Base Fuel with n-Butanol or Diethyl Ether As a Fuel Extender**
D. C. Rakopoulos, C. D. Rakopoulos, R. Papagiannakis, E. Giakoumis, S. Karellas, G. Kosmadakis
Journal of Energy Engineering, 142, Issue 2. [https://doi.org/10.1061/\(ASCE\)EY.1943-7897.000030](https://doi.org/10.1061/(ASCE)EY.1943-7897.000030)
- [J42] Waste heat recovery at the glass industry with the intervention of batch and cullet preheating**
I. Dolianitis, D. Giannakopoulos, C.-S. Hatzilau, S. Karellas, E. Kakaras, E. Nikolova, G. Skarpetis, N. Christodoulou, N. Giannoulas, T. Zitounis
Thermal Science, OnLine-First Issue 00, pp. 79-79, 2016. DOI: 10.2298/TSCI151127079D
- [J43] Exergy analysis of solar thermal collectors and processes**
S. Kalogirou, S. Karellas, K. Braimakis, C. Stanciu, V. Badescu,
Progress in Energy and Combustion Science, 56, pp. 106-137, September 2016. DOI:10.1016/j.pecs.2016.05.002
- [J44] Energy recovery by means of a radial piston expander in a CO₂ refrigeration system**
G. Ferrara, L. Ferrari, D. Fiaschi, G. Galoppi, S. Karellas, R. Secchi, D. Tempesti,
International Journal of Refrigeration, 72 pp. 147-155, December 2016.
DOI: <http://dx.doi.org/doi:10.1016/j.ijrefrig.2016.07.014>

[J45] Water extraction from high moisture lignite by means of efficient integration of waste heat and water recovery technologies with flue gas pre-drying system

X. Han, J. Yan, S. Karellas, M., E. Kakaras, F. Xiao,
Applied Thermal Engineering, 110, pp. 442-456, January 2017.
<http://dx.doi.org/10.1016/j.applthermaleng.2016.08.178>

[J46] Technoeconomic Analysis and Comparison of a Solar-Based Biomass ORC-VCC System and a PV Heat Pump for Domestic Trigeneration

K. Braimakis, A. Thimo, S. Karellas
Journal of Energy Engineering, DOI: 10.1061/(ASCE)EY.1943-7897.0000397

[J47] Integrated thermoeconomic optimization of standard and regenerative ORC for different heat source types and capacities

K. Braimakis, S. Karellas
Energy, 121/15, pp. 570-598, February 2017. DOI: 10.1016/j.energy.2017.01.042

[J48] Numerical investigation and comparison of coarse grain CFD – DEM and TFM in the case of a 1 MW_{th} fluidized bed carbonator simulation

A. Nikolopoulos, A. Stroh, M. Zeneli, F. Alobaid, N. Nikolopoulos, J. Ströhle, S. Karellas, B. Eppele, P. Grammelis
Chemical Engineering Science, 163 (2017), pp. 189-205, May 2017. DOI: 10.1016/j.ces.2017.01.052

[J49] Integration of Organic Rankine Cycle with Lignite Flue Gas Pre-drying for Waste Heat and Water Recovery from Dryer Exhaust Gas: Thermodynamic and Economic Analysis

X. Han, S. Karellas, M. Liu, K. Braimakis, W. Chen, J. Yan, E. Kakaras
Energy Procedia, 105, pp. 1614-1621, May 2017. DOI: <https://doi.org/10.1016/j.egypro.2017.03.518>

[J50] Simulation of the reacting flow within a pilot scale calciner by means of a three phase TFM model

M. Zeneli, A. Nikolopoulos, N. Nikolopoulos, P. Grammelis, S. Karellas, E. Kakaras
Fuel Processing Technology, 162, pp. 105-125, July 2017. DOI: 10.1016/j.fuproc.2017.03.032

[J51] Adsorption of thiophene by activated carbon: A global sensitivity analysis

P. Edinger, D. Grimekis, K. Panopoulos, S. Karellas, C. Ludwig
Journal of Environmental Chemical Engineering, 5/4 pp. 4173-4184, August 2017
DOI: <http://dx.doi.org/10.1016/j.jece.2017.07.041>

[J52] Experimental Investigation and CFD analysis of heat transfer in single phase subcooler of a small scale waste heat recovery ORC

T. Roumpedakis, S. Chapaloglou, P. Pallis, A.-D. Leontaritis, S. Karellas, P. Vourliotis
Energy Procedia, 129, pp. 487-494, September 2017. DOI: 10.1016/j.egypro.2017.09.166.

[J53] Experimental performance evaluation of a multi-diaphragm pump of a micro -ORC system

G. Carraro, P. Pallis, A. Leontaritis, S. Karellas, P. Vourliotis, S. Rech, A. Lazzaretto
Energy Procedia, 129, pp. 1018-1025, September 2017. DOI: 10.1016/j.egypro.2017.09.232

[J54] Radial piston expander as a throttling valve in a heat pump: Focus on the 2-phase expansion

G. Galoppi, R. Secchi, L. Ferrari, G. Ferrara, S. Karellas, D. Fiaschi
International Journal of Refrigeration, 82, pp. 273-282, October 2017
DOI: <http://dx.doi.org/10.1016/j.ijrefrig.2017.06.025>

[J55] Energy and exergy analysis of adiabatic compressed air energy storage system

L. Szablowski, P. Krawczyk, K. Badyda, S. Karellas, E. Kakaras, W. Bujalski
Energy, 138, pp.12-18, November 2017. DOI: <http://dx.doi.org/10.1016/j.energy.2017.07.055>

[J56] An environmental and economic evaluation of the lignite power generation system by using Life Cycle Analysis Principles

D.-S. Kourkoumpas, G. Stamatiou, S. Karellas, P. Grammelis, E. Kakaras
International Journal of Global Warming, Vol. 13, Nos. 3/4, pp. 296-329 2017

[J57] The Driving Factors of CO₂ emissions from electricity generation in Greece: An Index Decomposition Analysis

D. Diakoulaki, D. Giannakopoulos, S. Karellas
International Journal of Global Warming, Vol. 13, Nos. 3/4, pp. 382-397, 2017

[J58] Thermal analysis of a Phase Change Material for a Solar Organic Rankine Cycle

M. Iasiello, K. Braimakis, A. Andreozzi, S. Karellas
Journal of Physics: Conference Series, Volume 923, Issue 1, 20 November 2017, Article number 012042
10.1088/1742-6596/923/1/012042

- [J59] Comparative thermodynamic analysis of compressed air and liquid air energy storage systems**
P. Krawczyk, L. Szablowski, S. Karellas, E. Kakaras, K. Badyda
Energy, 142, pp.46-54, 1 January 2018. <http://dx.doi.org/10.1016/j.energy.2017.07.078>
- [J60] Semi-empirical model of a multi-diaphragm pump in an Organic Rankine Cycle experimental unit**
F. D'Amico, P. Pallis, A.D. Leontaritis, S. Karellas, N.M. Kakalis, S. Rech, A. Lazzaretto
Energy, 143, pp. 1056-1071, 15 January 2018. <https://doi.org/10.1016/j.energy.2017.10.127>
- [J61] Numerical analysis of a GPHE's hydrodynamic and thermal characteristics, by applying an iterative procedure for the thermal boundary conditions**
S. Chapaloglou, A. Nikolopoulos, N. Nikolopoulos, S. Karellas, P. Vourliotis
International Journal of Heat and Mass Transfer, 118, pp. 88-102, March 2018
<https://doi.org/10.1016/j.ijheatmasstransfer.2017.10.106>
- [J62] Energetic optimization of regenerative Organic Rankine Cycle (ORC) configurations**
K. Braimakis, S. Karellas
Energy Conversion and Management, Vol. 159, pp.353-370, 1 March 2018
<https://doi.org/10.1016/j.enconman.2017.12.093>
- [J63] Exergetic optimization of double stages Organic Rankine Cycle (ORC)**
K. Braimakis, S. Karellas
Energy, 149, pp. 296-313, 15 April 2018
<https://doi.org/10.1016/j.enconman.2018.04.059>
- [J64] The potential of WHR/batch and cullet preheating for energy efficiency in the EU ETS glass industry and the related energy incentives**
S. Karellas, S. Giannakopoulos, C.-S. Hatzilau, I. Dolianitis, G. Skarpetis, T. Zitounis
Energy Efficiency, Vol. 11, Issue 5, pp. 1161-1175, June 2018. <https://doi.org/10.1007/s12053-017-9587-3>
- [J65] Reversible Heat Pump–Organic Rankine Cycle Systems for the Storage of Renewable Electricity**
S. Staub, P. Bazan, K. Braimakis, D. Müller, C. Regensburger, D. Scharrer, B. Schmitt, D. Steger, R. German, S. Karellas, M. Pruckner, E. Schlücker, S. Will, J. Karl
Energies Vol 11, Issue 6, Article number en11061352, June 2018. <https://doi.org/10.3390/en11061352>
- [J66] Preparation and investigation of distinct and shape stable paraffin/SiO₂ composite PCM nanospheres**
G. Belessiotis, K. Papadokostaki, E. Favvas, E. Efthimiadou, S. Karellas
Energy Conversion and Management, 168, pp. 382-394, 15 July 2018
<https://doi.org/10.1016/j.energy.2018.02.044>
- [J67] Equilibrium and kinetic aspects for catalytic methanation focusing on CO₂ derived Substitute Natural Gas (SNG)**
E.-I. Koytsoumpa, S. Karellas
Renewable and Sustainable Energy reviews, Vol. 94, pp. 536-550, October 2018
<https://doi.org/10.1016/j.rser.2018.06.051>
- [J68] Exergy analysis of a naturally ventilated Building Integrated Photovoltaic/Thermal (BIPV/T) system**
R. Agathokleous, S. Kalogirou, S. Karellas
Renewable Energy, Vol. 128, Part B, pp. 541-552, December 2018. <https://doi.org/10.1016/j.renene.2017.06.085>
- [J69] A review of key environmental and energy performance indicators for the case of renewable energy systems when integrated with storage solutions**
D.Kourkoumpas, G. Benekos, N. Nikolopoulos, S. Karellas, P. Grammelis, E. Kakaras
Applied Energy, Volume 231, pp.380-398, 1 December 2018. <https://doi.org/10.1016/j.apenergy.2018.09.043>
- [J70] Cost effectiveness assessment and beyond: A study on energy efficiency interventions in Greek residential building stock**
P. Pallis, N. Gkonis, E. Varvagiannis, K. Braimakis, S. Karellas, M. Katsaros, P. Vourliotis
Energy and Buildings, Vol. 182, pp. 1-18, January 2019. <https://doi.org/10.1016/j.enbuild.2018.10.024>
- [J71] Hybrid adsorption-compression systems for air conditioning in efficient buildings: Design through validated dynamic models**
V. Palomba, E. Varvagiannis, S. Karellas, A. Frazicca
Energies, Vol. 12, Issue 6, 2019, Article Number 1161. <https://doi.org/10.3390/en12061161>
- [J72] Thermodynamic analysis of an improved flue gas pre-dried lignite-fired power system integrated with water recovery and drying exhaust gas recirculation**
X. Han, M. Liu, J. Yan, S. Karellas, J. Wang, F. Xiao
Drying Technology, Taylor & Francis Online 2019. <https://doi.org/10.1080/07373937.2019.1607871>

- [J73] Experimental investigation of CO₂ solubility and its absorption rate into promoted aqueous potassium carbonate solutions at elevated temperatures**
D. Grimekis, S. Giannoulidis, K. Manou, K.D. Panopoulos, S. Karellas
International Journal of Greenhouse Gas Control, Vol. 81, pp. 83-92, February 2019
<https://doi.org/10.1016/j.ijggc.2018.12.008>
- [J74] Analysis of energy storage systems to exploit wind energy curtailment in Crete**
G. Caralis, T. Christakopoulos, S. Karellas, Z. Gao
Renewable and Sustainable Energy reviews, 103, 122-139, April 2019. <https://doi.org/10.1016/j.rser.2018.12.017>
- [J75] Modelling of Substitute Natural Gas production via combined gasification and power to fuel**
E.-I. Koytsoumpa, S. Karellas, E. Kakaras
Renewable Energy, Vol. 135, pp. 1354-1370, May 2019. <https://doi.org/10.1016/j.renene.2018.09.064>
- [J76] Numerical simulation of a silicon-based latent heat thermal energy storage system operating at ultra-high temperatures**
M. Zeneli, I. Malgarinos, A. Nikolopoulos, N. Nikolopoulos, P. Grammelis, S. Karellas, E. Kakaras
Applied Energy, Vol. 242, pp. 837-853, 15 May 2019. <https://doi.org/10.1016/j.apenergy.2019.03.147>
- [J77] Integrated ORC-Adsorption cycle: A first and second law analysis of potential configurations**
T.C. Roumpedakis, T. Christou, E. Monokrousou, K. Braimakis, S. Karellas
Energy, Vol. 179, pp. 46-58, July 2019 <https://doi.org/10.1016/j.energy.2019.04.069>
- [J78] Towards NZEB in Greece: A comparative study between cost optimality and energy efficiency for newly constructed residential buildings**
P. Pallis, N. Gkonis, E. Varvagiannis, K. Braimakis, S. Karellas, M. Katsaros, P. Vourliotis, D. Sarafianos
Energy and Buildings, Vol. 198, pp. 115-137, September 2019. <https://doi.org/10.1016/j.enbuild.2019.06.005>
- [J79] Thermodynamic analysis and life cycle assessment of supercritical pulverized coal-fired power plant integrated with No.0 feedwater pre-heater under partial loads**
X. Han, N. Chen, J. Yan, J. Liu, M. Liu, S. Karellas
Journal of Cleaner Production, Vol. 233, pp. 1106-1122, 1 Oct. 2019. <https://doi.org/10.1016/j.jclepro.2019.06.159>
- [J80] Analysis of Alternative MSW Treatment Technologies with the Aim of Energy Recovery in the Municipality of Vari-Voula-Vouliagmeni**
S. Thanopoulos, S. Karellas, M. Kavrakos, G. Konstantellos, D. Tzempelikos, D. Kourkoumpas
Waste and Biomass Valorization, Vol 11, 1585-1601, 1 April 2020. <https://doi.org/10.1007/s12649-018-0388-5>
- [J81] Performance evaluation and optimization of the cooling system of a hybrid thermionic-photovoltaic converter**
M. Zeneli, A. Bellucci, G. Sabbatella, D. M. Trucchi, A. Nikolopoulos, N. Nikolopoulos, S. Karellas, E. Kakaras
Energy Conversion and Management, Vol. 210, 112717, 15 April 2020.
<https://doi.org/10.1016/j.enconman.2020.112717>
- [J82] Energy-exergy analysis of ultra-supercritical biomass-fuelled steam power plants for industrial CHP, district heating and cooling**
K. Braimakis, D. Magiri-Skouloudi, D. Grimekis, S. Karellas
Renewable Energy, Vol. 154, pp. 252-269, July 2020. <https://doi.org/10.1016/j.renene.2020.02.091>
- [J83] Life cycle analysis of ZEOSOL solar cooling and heating system**
T. C. Roumpedakis, G. Kallis, D. Magiri-Skouloudi, D. Grimekis, S. Karellas
Renewable Energy, Vol. 154, pp. 82-98, July 2020. <https://doi.org/10.1016/j.renene.2020.02.114>
- [J84] Performance Results of a Solar Adsorption Cooling and Heating Unit**
T. C. Roumpedakis, S. Vasta, A. Sapienza, G. Kallis, S. Karellas, U. Wittstadt, M. Tanne, N. Harborth, U. Sonnenfeld
Energies, 2020, 13(7), 1630. <https://doi.org/10.3390/en13071630>
- [J85] Design evaluation for a finned-tube CO₂ gas cooler in residential applications**
C. Alexopoulos, O. Aljolani, F. Heberle, T. C. Roumpedakis, D. Brüggemann, S. Karellas
Energies, 2020, 13(10), 2428. <https://doi.org/10.3390/en13102428>
- [J86] Exergetic analysis of CO₂ and ultra-low GWP refrigerant mixtures as working fluid in ORC for waste heat recovery**
K. Braimakis, A. Mikelis, A. Charalampidis, S. Karellas
Energy, Vol. 203 (10), 117801, July 2020. <https://doi.org/10.1016/j.energy.2020.117801>
- [J87] The Bioefficiency Project Part 2: A blueprint design for the next generation of biomass-fired cogeneration plants**
T. de Riese, L. Hansen, D. Magiri-Skouloudi, K. Braimakis, L. Clemens, C. Bergins, S. Fendt, S. Karellas, H. Spliethoff
VGB Powertech, Vol. 8, 2020

- [J88] Dynamic modelling of an ultra high temperature PCM with combined heat and electricity production for application at residential buildings**
I. Violidakis, M. Zeneli, K. Atsonios, G. Strotos, N. Nikolopoulos, S. Karellas
Energy and Buildings, Vol. 222 (10), 110067, September 2020; <https://doi.org/10.1016/j.enbuild.2020.110067>
- [J89] Exergetic and economic analysis of a solar driven small scale ORC**
T. C. Roumpedakis, G. Loumparidis, E. Monokrousou, K. Braimakis, A. Charalampidis, S. Karellas
Renewable Energy, Vol. 157, pp. 1008-1024, September 2020. <https://doi.org/10.1016/j.renene.2020.05.016>
- [J90] Modelling of methanol production via combined gasification and power to fuel**
E. I. Koytsoumpa, S. Karellas, E. Kakaras
Renewable Energy, Vol. 158, pp. 598-611, October 2020. <https://doi.org/10.1016/j.renene.2020.05.169>
- [J91] Implementation of a solar-biomass system for multi-family houses: Towards 100% renewable energy utilization**
V. Palomba, E. Borri, A. Charalampidis, A. Frazzica, L. F. Cabeza, S. Karellas
Renewable Energy Vol. 166, pp. 190-209 November 2020. <https://doi.org/10.1016/j.renene.2020.11.126>
- [J92] Review of Process Modeling of Solid-Fuel Thermal Power Plants for Flexible and Off-Design Operation**
I. Avagianos, D. Rakopoulos, S. Karellas, E. Kakaras
Energies, Vol. 13, December 2020. doi:10.3390/en13246587
- [J93] Energy assessment based on semi-dynamic modelling of a photovoltaic driven vapour compression chiller using phase change materials for cold energy storage**
E. Varvagiannis, A. Charalampidis, G. Zsembinski, S. Karellas, L.F. Cabeza
Renewable Energy, Vol. 163, pp. 198-212, January 2021. <https://doi.org/10.1016/j.renene.2020.08.034>
- [J94] Introducing an artificial neural network energy minimization multi-scale drag scheme for fluidized particles**
A. Nikolopoulos, C. Samlis, M. Zeneli, N. Nikolopoulos, S. Karellas, P. Grammelis
Chemical Engineering Science, Vol. 229, 116013, January 2021. <https://doi.org/10.1016/j.ces.2020.116013>
- [J95] Thermodynamic and techno-economic assessment of pure and zeotropic fluid ORCs for waste heat recovery in a biomass IGCC plant.**
S. Georgousopoulos, K. Braimakis, D. Grimekis, S. Karellas
Applied Thermal Engineering, Vol. 183, 116202, January 2021. <https://doi.org/10.1016/j.applthermaleng.2020.116202>
- [J96] An innovative solar-biomass energy system to increase the share of renewables in office buildings**
V. Palomba, E. Borri, A. Charalampidis, A. Frazzica, S. Karellas, L.F. Cabeza
Energies, Vol. 4, Issue 4, February 2021. <https://doi.org/10.3390/en14040914>
- [J97] Exergetic efficiency potential of double-stage ORCs with zeotropic mixtures of natural hydrocarbons and CO₂**
K. Braimakis, V. Grispos, S. Karellas. Energy, Vol. 218, March 2021, <https://doi.org/10.1016/j.energy.2020.119577>
- [J98] Techno-Economic Optimization of Medium Temperature Solar-Driven Subcritical Organic Rankine Cycle**
T.C. Roumpedakis, N. Fostieris, K. Braimakis, E. Monokrousou, A. Charalampidis, S. Karellas
Thermo 2021, 1(1). 77-105. <https://doi.org/10.3390/thermo1010007>
- [J99] Hybrid cascade heat pump and thermal-electric energy storage system for residential buildings: Experimental testing and performance analysis**
V. Palomba, A. Bonanno, G. Brunaccini, D. Aloisio, F. Sergi, G.E. Dino, E. Varvagiannis, S. Karellas, B. Nitsch, A. Strehow, A. Grobetea, R. Herrmann
Energies, Vol. 14, Issue 9, May 2021. <https://doi.org/10.3390/en14092580>
- [J100] Life cycle analysis of a photovoltaic driven reversible heat pump**
C. Riva, T. C. Roumpedakis, G. Kallis, M.V. Rocco, S. Karellas
Energy and Buildings, Vol. 240, June 2021. <https://doi.org/10.1016/j.enbuild.2021.110894>
- [J101] Development, experimental testing and techno-economic assessment of a fully automated marine Organic Rankine Cycle prototype for jacket cooling water heat recovery**
P. Pallis, E. Varvagiannis, K. Braimakis, T. Roumpedakis, A.-D. Leontaritis, S. Karellas
Energy, Vol. 228, August 2021. <https://doi.org/10.1016/j.energy.2021.120596>
- [J102] Techno-economic assessment of a small-scale biomass ORC-CHP for district heating**
K. Braimakis, A. Charalampidis, S. Karellas
Energy Conversion and Management, Vol. 2471 November 2021. <https://doi.org/10.1016/j.enconman.2021.114705>

[J103] Bioenergy with carbon capture and utilization: A review on the potential deployment towards a European circular bioeconomy

E. I. Koytsoumpa, D. Magiri-Skouloudi, S. Karellas, E. Kakaras

Renewable and Sustainable Energy Reviews, Vol 152 December 2021. <https://doi.org/10.1016/j.rser.2021.111641>

[J104] Energy and economic performance assessment of efficiency measures in zero-energy office buildings in Greece

P. Pallis, K. Braimakis, T. Roumpedakis, E. Varvagianis, S. Karellas, L. Doulos, M. Katsaros, P. Vourliotis

Building and Environment, Vol. 206, December 2021. <https://doi.org/10.1016/j.buildenv.2021.108378>

[J105] Conceptual development and optimization of the main absorption systems configurations

G. Volpato, S. Rech, A. Lazzaretto, T. C. Roumpedakis, S. Karellas, C. A. Frangopoulos

Renewable Energy, Vol 182 January 2022. <https://doi.org/10.1016/j.enconman.2022.115323>

[J106] Organic flash cycles in Rankine-based Carnot batteries with large storage temperature spreads

M. Weitzer, D. Müller, D. Steger, A. Charalampidis, S. Karellas, J. Karl

Energy Conversion and Management, Vol 2551 March 2022. <https://doi.org/10.1016/j.enconman.2022.115323>

[J107] Techno-economic assessment of dimethyl carbonate production based on carbon capture and utilization and power-to-fuel technology

V. Kontou, D. Grimekis, K. Braimakis, S. Karellas

Renewable and Sustainable Energy Reviews, Vol. 157, April 2022. <https://doi.org/10.1016/j.rser.2021.112006>

[J108] Techno-economic evaluation of medium scale power to hydrogen to combined heat and power generation systems

N. Skordoulias, E.-I. Koytsoumpa, S. Karellas

International Journal of Hydrogen Energy, Vol. 47, 63, July 2022. <https://doi.org/10.1016/j.ijhydene.2022.06.057>

[J109] Methods based on a semi-empirical model for simulating scroll compressors with HFC and HFO refrigerants

G. Meramveliotakis, G. Kosmadakis, S. Karellas

Open Research Europe 2022, July 2022 <https://doi.org/10.12688/openreseurope.14313.3>

[J110] Life cycle analysis of a waste heat recovery for marine engines Organic Rankine Cycle

G. Kallis, T.C. Roumpedakis, P. Pallis, Z. Koutantzi, A. Charalampidis, S. Karellas

Energy, Volume 25715 October 2022, <https://doi.org/10.1016/j.energy.2022.124698>

[J111] Identifying the performance and losses of a scroll compressor with vapour injection and R1234ze(E)

G. Meramveliotakis, G. Kosmadakis, S. Karellas

Open Research Europe 2022, November 2022. <https://doi.org/10.12688/openreseurope.14658.2>

[J112] Exergy efficiency potential of dual-phase expansion trilateral and partial evaporation ORC with zeotropic mixtures

K. Braimakis, S. Karellas. Energy, Vol. 2621 January 2023. <https://doi.org/10.1016/j.energy.2022.125475>

[J113] Smart maintenance with regression analysis for efficiency improvement in photovoltaic energy systems

I. Ay, M. Kademli, S. Savas, S. Karellas, A. Markopoulos, Ch.-S. Hatzilau, P. Denvil, H. Dusbudak, A. S. Arslan, M. Koc, K. Duraklar, K. Sunal

Journal of Solar Energy Research, Vol. 8, Issue 5, Pages 1663-1679, 2023. DOI: 10.22059/jser.2023.363200.1335

[J114] Numerical and Experimental Analysis of a Low-GWP Heat Pump Coupled to Electrical and Thermal Energy Storage to Increase the Share of Renewables across Europe

O. A. Rehman, V. Palomba, A. Frazzica, A. Charalampidis, S. Karellas, L. F. Cabeza

Sustainability, Vol. 15, Issue 6, March 2023. <https://doi.org/10.3390/su15064973>

[J115] Comparative life cycle greenhouse gas emissions assessment of battery energy storage technologies for grid applications

X. Han, Y. Li, L. Nie, X. Huang, Y. Dengm J. Yan, D.-S. Kourkoumpas, S. Karellas

Journal of Cleaner Production, Vol 392, 15 March 2023. DOI: 10.1016/j.jclepro.2023.136251

[J116] Tracking the life-cycle greenhouse gas emissions of municipal solid waste incineration power plant: A case study in Shanghai

X. Han, H. Chang, C. Wang, J. Tai, S. Karellas, J. Yan, L. Song, Z. Bi

Journal of Cleaner Production, Vol 398, 20 April 2023. DOI: 10.1016/j.jclepro.2023.136635

[J117] Innovations for organic Rankine cycle power systems: Current trends and future perspectives

C. Wieland, C. Schiffelechner, K. Braimakis, F. Kaufmann, F. Dawo, S. Karellas, G. Besagni, C. N. Markides

Applied Thermal Engineering, Vol 225, 5 May 2023. DOI: 10.1016/j.applthermaleng.2023.120201

[J118] CFD modelling of an indirectly heated calciner reactor, utilized for CO₂ capture, in an Eulerian framework

G. Kanellis, M. Zeneli, N. Nikolopoulos, C. Hofmann, J. Stöhle, S. Karellas, J. Konttinen
Fuel, Vol 346, 15 August 2023. DOI: 10.1016/j.fuel.2023.128251

[J119] An innovative heating, ventilation, air conditioning and refrigeration circular economy system for reducing carbon dioxide emissions in Europe via extensive reuse of existing fluorinated gases

N. Barmparitsas, S. Karellas, P. Pallis, S. Thanopoulos, D. Kobelt
Energies, Vol. 16, Issue 23, December 2023. DOI: 10.3390/en16237705

[J120] Simplified Modeling and Experimental Validation of a Combi-Storage Distribution Tank for Seasonal Thermal Energy Storage Systems

T. C. Roumpedakis, A.-D. Leontaritis, P. Vlachogiannis, E. Varvagiannis, A. Charalampidis, S. Karellas
Thermo, Vol. 3, Issue 4, pages 657 – 681, December 2023. DOI: 10.3390/thermo3040038

[J121] Life Cycle assessment of novel thermochemical – biochemical biomass-to-liquid pathways for sustainable aviation and maritime fuel production

D.-S. Kourkoumpas, A. Bon, A. Sagani, K. Atsonios, P. Grammelis, S. Karellas, E. Kakaras
Bioresources Technology, Vol 393, Febr 2024. DOI: 10.1016/j.biortech.2023.130115

[J122] A review of alternative processes for green hydrogen production focused on generating hydrogen from biomass

A.-P. Damiri, E. Stamatakis, S. Bellas, M. Zoulias, G. Mitkidis, A.G. Anastasiadis, S. Karellas, G. Tzamalidis, A. Stubos, T. Tsoutsos. Hydrogen, Vol. 5, Issue 2, Pages 163 – 184, June 2024. DOI: 10.3390/hydrogen5020011

[J123] Cost-Optimality Assessment of a Solar Trigeneration System for Tertiary Sector Buildings in Greece

D. Tziritas, K. Braimakis, D. Bakirtzis, G. M. Stavrakakis, S. Yfanti, K. Terzis, P. Langouranis, P. L. Zervas, S. Karellas
Energies, Vol. 17, Issues 12, June 2024. DOI: 10.3390/en17122819

[J124] Life Cycle assessment of an innovative alcohol-to-jet process: The case for retrofitting a bioethanol plant for sustainable aviation fuel production

D.-S. Kourkoumpas, A. Sagani, A. Hull, S. Karellas, P. Grammelis
Renewable Energy, Vol. 228, July 2024. DOI: 10.1016/j.renene.2024.120512

[J125] Life cycle environmental hotspots analysis of typical electrochemical, mechanical and electrical energy storage technologies for different application scenarios: Case study in China

Y. Li., X. Han, L. Nie, Y. Deng, J. Yan, T.C. Roumpedakis, D.-S. Kourkoumpas, S. Karellas
Journal of Cleaner Production, Vol. 466, 10 August 2024. DOI: 10.1016/j.jclepro.2024.142862

[J126] Innovative waste heat valorisation technologies for zero-carbon ships – A review

R. Fisher, L. Ciappi, P. Niknam, K. Braimakis, S. Karellas, A. Frazzica, A. Sciacovelli
Applied Thermal Engineering, Vol 253, 15 September 2024. DOI: 10.1016/j.applthermaleng.2024.123740

[J127] Thermodynamic investigation of integrated organic Rankine cycle-ejector vapor compression cooling cycle waste heat recovery configurations for cooling, heating and power production

K. Braimakis, S. Karellas
Energy, Vol304, 30 September 2024. DOI: 10.1016/j.energy.2024.132020

[J128] Transforming CO₂ into Synthetic Fuels: Modeling, Simulation, and Optimization Analysis of Methanol Production from Industrial Wastes

V. Kontou, A. Peppas, S. Kottaridis, C. Politi, S. Karellas
Eng, Vol5. Issue 3, September 2024. DOI: 10.3390/eng5030070

[J129] A novel dual-stage intercooled and recuperative gas turbine system integrated with transcritical organic Rankine cycle: System modeling, energy and exergy analyses

X. Han, Y. Dai, X. Guo, K. Braimakis, S. Karellas, J. Yan
Energy, Vol 305, 1 October 2024. DOI: <https://doi.org/10.1016/j.energy.2024.132252>

[J130] Environmental impact of an innovative solar-biomass hybrid system for residential applications

E. Borri, A. Charalampidis, V. Palomba, G. Zsembinski, A. Frazzica, S. Karellas, L. F. Cabeza
Renewable Energy, Vol 239, 2025. DOI: <https://doi.org/10.1016/j.renene.2024.122138>

[J131] Multi-objective optimization of medium-enthalpy geothermal Organic Rankine Cycle plants

S. Gkousis, K. Braimakis, P. Nimmegeers, S. Karellas, Tine Compennolle
Renewable and Sustainable Energy Reviews, Vol 210, 2025. DOI: <https://doi.org/10.1016/j.rser.2024.115150>

[K]PUBLICATIONS IN PROCEEDINGS OF INTERNATIONAL CONFERENCES (Peer Reviewed Papers)

[K1] Compressor intake air cooling in gas turbine power plants

E. Kakaras, A. Doukelis, S. Karellas

ECOS 2002 15th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 3-5 July 2002, Berlin, Germany

[K2] Evaluation of inlet air cooling methods for a combined cycle power plant

A. Prelipceanu, S. Karellas, E. Kakaras, A. Doukelis

ECOS 2003 16th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 30 June – 2 July 2003, Copenhagen, Denmark

[K3] Inlet air cooling methods for gas turbine based power plants

E. Kakaras, A. Doukelis, A. Prelipceanu, S. Karellas

Proceedings of ASME Turbo EXPO 2004, Power for Land, Sea and Air, June 14-17, 2004, Vienna, Austria

[K4] Simulation of an innovative stand-alone solar desalination system with an Organic Rankine Cycle

A. Schuster, S. Karellas, J. Karl

46th Conference on Simulation and Modelling, SIMS 2005, 13-14 October 2005, Trondheim, Norway

[K5] Conversion of Syngas from Biomass in Solid Oxide Fuel Cells

J. Karl, N. Frank, S. Karellas, M. Saule, U. Hohenwarter

The 4th International Conference on FUEL CELL SCIENCE, ENGINEERING and TECHNOLOGY, ASME, 19.06-21.06.2006, Irvine CA, USA

[K6] Innovative Applications of Organic Rankine Cycle

A. Schuster, S. Karellas, J. Karl

ECOS 2006 19th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 12-14 July 2006, Aghia Pelagia, Crete, Greece

[K7] An Innovative Biomass Gasification Process and its Coupling with Microturbine and Fuel Cell Systems

S. Karellas, J. Karl, E. Kakaras

ECOS 2006 19th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 12-14 July 2006, Aghia Pelagia, Crete, Greece

[K8] Introduction of microturbine based CHP production in large scale public consumers in Greece

E. Kakaras, A. Doukelis, S. Karellas, D. Giannakopoulos, S. Karamaliki

ECOS 2008 21st International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 24-27 June 2008, Krakow, Poland

[K9] Efficiency optimization potential in supercritical ORC process

A. Schuster, S. Karellas, R. Aumann

ECOS 2008 21st International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 24-27 June 2008, Krakow, Poland

[K10] Fuel Cell-based CHP production in large scale public consumers in Greece

E. Kakaras, S. Karellas, A. Doukelis, P. Zovas

ECOS 2009 22nd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, August 31 - September 3 2009, Foz do Iguaçu, Brasil

[K11] Influence of Supercritical ORC parameters on Heat Exchanger Design.

S. Karellas, A. Schuster, A. Leonarditis, R. Chritensen, C. Stenhede.

ECOS 2010 23rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, June 14-17 2010 Lausanne, Switzerland

[K12] Energetic and exergetic investigation of integrated RDF gasification energy generation systems.

S. Karellas, K. Panopoulos, G. Panoussis, E. Kakaras, I. Boukis

ECOS 2010 23rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, June 14-17 2010 Lausanne, Switzerland

[K13] Investigation of the introduction of heat pumps in the residential sector in Greece

S. Karellas, D. Giannakopoulos, E. Kakaras, A. Doukelis, K. Pappa, N. Barmparitsas, E. Eleftheriadis, P. Grunewald

ECOS 2010 23rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, June 14-17 2010 Lausanne, Switzerland

[K14] Integrated system Approach for increase of engine combined cycle efficiency

D. Gewald, S. Karellas, A. Schuster, H. Spliethoff

ECOS 2011 24th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, July 4-7 2011 Novi-Sad, Serbia

[K15] A modelling evaluation of Synthetic Natural Gas production from coal/lignite steam gasification

S. Karellas, K. Panopoulos, J. Karl, E. Kakaras

ECOS 2011 24th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, July 4-7 2011 Novi-Sad, Serbia

[K16] Simulations of a fixed bed catalytic reactor for the production of methane from syngas

E.-I. Koytsoumpa, L. Griendl, S. Karellas, K.D. Panopoulos, A. Nikolopoulos, J. Karl, E. Kakaras

ECOS 2011 24th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, July 4-7 2011 Novi-Sad, Serbia

[K17] Investigation of lignite pre-drying in a modern Greek power plant toward zero CO₂ emissions

M. Agraniotis, A. Koumanakos, A. Doukelis, S. Karellas, E. Kakaras

ECOS 2011 24th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, July 4-7 2011 Novi-Sad, Serbia

[K18] Economic investigation of a lignite to SNG process

S. Karellas, E. Kakaras

LOW RANK COAL, International Industry Symposium, April 16-19 2012, Melbourne, Australia

[K19] Energy and Exergy Analysis of Repowering Options for Greek lignite-fired Power Plants

S. Karellas, A. Doukelis, G. Zanni, E. Kakaras

ECOS 2012 25th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, June 26-29 2012 Perugia, Italy

[K20] Energetic and Exergetic analysis of waste heat recovery systems in the cement industry

S. Karellas, A.-D. Leontaritis, G. Panousis, E. Bellos, E. Kakaras

ECOS 2012 25th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, June 26-29 2012 Perugia, Italy

[K21] Assessment of different SNG production routes via the use of Greek low rank coal

E.I. Koytsoumpa, S.Karellas, E.Kakaras, Low Rank Coal, International Industry Symposium, 28 April-1 May 2014, Melbourne, Australia

[K22] Energy-exergy analysis and economic investigation of a cogeneration and trigeneration ORC-VCC hybrid system utilizing biomass fuel and solar power

S. Karellas, K. Braimakis

ECOS 2014 27th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, June 15-19 2014 Turku, Finland

[K23] Thermodynamic investigation of waste heat recovery with subcritical and supercritical low-temperature Organic Rankine Cycle based on natural refrigerants and their binary mixtures

K. Braimakis, A.D. Leontaritis M. Preissinger, S. Karellas, D. Brüggeman, K. D. Panopoulos

ECOS 2014 27th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, June 15-19 2014 Turku, Finland

[K24] The driving factors of CO₂ emissions from electricity generation: An Index Decomposition analysis for Greece and EU-28

D. Diakoulaki, C. Chatzifoti, D. Giannakopoulos, C. Karaboiki, S. Karellas

Global Conference on Global Warming GCGW-15, 24-27 May 2015, Athens, Greece

[K25] Life Cycle Analysis and Life Cycle costing of Electricity generation based on lignite: Applied case study in Greece

D.-S. Kourkoumpas, G. Stamatiou, S. Karellas, P. Grammelis, A. Gypakis, E. Kakaras

Global Conference on Global Warming GCGW-15, 24-27 May 2015, Athens, Greece

[K26] Piston expanders technology as a way to recover energy from the expansion of highly wet organic refrigerants

D. Giaschi, R. Secchi, G. Galoppi, D. Tempest, G. Ferrara, L. Ferrari, S. Karellas

ASME 2015 and Energy Conversion Conference PowerEnergy2015, 28th June – 2nd July 2015 San Diego, California, USA

[K27] Energetic and exergetic evaluation of the hybridization of Combined Cycle Power Plants

S. Karellas, S. Kalogirou, A. Lappas, A. Papadopoulos, E. Kakaras

ECOS 2015 28th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 30th June – 3rd July 2015 Pau, France

[K28] Energy efficiency increase in a glass industry by means of waste heat recovery

I. Dolianitis, D. Giannakopoulos, C. Hatzilau, S. Karellas, G. Skarpetis, N. Christodoulou, N. Giannoulas, T. Zitounis
ECOS 2015 28th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 30th June – 3rd July 2015 Pau, France

[K29] Techno-economic analysis and comparison of an ORC-VCC biomass-solar Trigeration system and a photovoltaic driven Heat pump

K. Braimakis, T. Roumpedakis, A.Thimo, S. Karellas, ECOS 2015 28th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 30th June – 3rd July 2015 Pau, France

[K30] Power to Fuel concept: Process analysis and economic evaluation

D.-S. Kourkoumpas, E. Papadimou, K. Atsonios, S. Karellas, P. Grammelis, E. Kakaras
ECOS 2015 28th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems, 30th June – 3rd July 2015 Pau, France

[K31] Waste heat recovery at the glass industry with the intervention of batch and cullet preheating

I. Dolianitis, D. Giannakopoulos, C. Hatzilau, S. Karellas, E. Kakaras, E. Nikolova G. Skarpetis, N. Christodoulou, N. Giannoulas, T. Zitounis.
10th Conference on Sustainable Development of Energy, Water and Environment Systems, 27th September – 3rd October, 2015, Dubrovnik, Croatia

[K32] Comparative energy and exergy analysis of compressed air energy storage and liquid air energy storage systems

P. Krawczyk, Ł. Szabłowski, S. Karellas, E. Kakaras, K. Badyda
ECOS 2016 - the 29th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems June 19-23, 2016, PORTOROŽ, SLOVENIA

[K33] Simulation Research on the Optimal Operation of Flue Gas Pre-Dried Lignite-Fired Power Plant Firing High Moisture Lignite

X. Han, S. Karellas, M. Liu, J. Liu, J. Yan, D. Rakopoulos, E. Kakaras
ECOS 2016 - the 29th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems June 19-23, 2016, PORTOROŽ, SLOVENIA

[K34] Flexible two-stage turbine bleeding Organic Rankine Cycles (ORCs) for combined heat and power applications

D. Meinel, K. Braimakis, C. Wieland, S. Karellas, H. Spliethoff
ECOS 2016 - the 29th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems June 19-23, 2016, PORTOROŽ, SLOVENIA

[K35] Exergy analysis of a Naturally Ventilated Building Integrated Photovoltaic (BIPV) System

R. A. Agathokleous, S. A. Kalogirou, S. Karellas
ECOS 2016 - the 29th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems June 19-23, 2016, PORTOROŽ, SLOVENIA

[K36] Energy saving incentives for the European glass industry in the frame of the EU Emissions Trading Scheme

C. S. Hatzilau, S. Karellas, I. Dolianitis, D. Giannakopoulos, G. Skarpetis, T. Zitounis
Industrial Efficiency 2016 Berlin, 12-14 September 2016, Die Kalkscheune, Berlin, Germany

[K37] Semi-empirical model of a multi-diaphragm pump in an Organic Rankine Cycle experimental unit

F. D'Amico, P. Pallis, A.D. Leontaritis, S. Karellas, N.M. Kakalis, S. Rech, A. Lazzaretto
Contemporary Problems in Thermal Engineering (CPOTE2016), 15-16 September 2016, Gliwice, Poland

[K38] Energy analysis of Adiabatic Liquid Air Energy Storage System

P. Krawczyk, Ł. Szabłowski, K. Badyda, S. Karellas, E. Kakaras
Contemporary Problems in Thermal Engineering (CPOTE2016), 15-16 September 2016, Gliwice, Poland

[K39] Energy and exergy analysis of advanced adiabatic compressed air energy storage system

Ł. Szabłowski, P. Krawczyk, K. Badyda, S. Karellas, E. Kakaras, W. Bujalski
Contemporary Problems in Thermal Engineering (CPOTE2016), 15-16 September 2016, Gliwice, Poland

[K40] Modelling, design and thermo-economic evaluation of an ORC-ejector trigeneration system for waste heat recovery

K. Braimakis, A. Zitouni-Petrogianni, S. Karellas, S. Kalogirou
30th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2017), July 2-6 2017, San Diego, California, USA

[K41] Convective heat transfer coefficients of a naturally ventilated building integrated photovoltaic (BIPV) system

S. Kalogirou, R. Agathocleous, S. Karellas

30th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2017), July 2-6 2017, San Diego, California, USA

[K42] Molten silicon storage of concentrated solar power with integrated thermovoltaic energy conversion

A. Datas, M. Zeneli, C. Del Cañizo, I. Malgarinos, A. Nikolopoulos, N. Nikolopoulos, S. Karellas, A. Martí

Volume 2033, 8 November 2018, Article number 09000523rd International Conference on Concentrating Solar Power and Chemical Energy Systems, SolarPACES 2017; Santiago; Chile; 26 September 2017 through 29 September 2017; Code 141990, <https://doi.org/10.1063/1.5067099>

[K43] Integrated ORC-Adsorption cycle: A first and second law analysis of potential configurations

T. C. Roumpedakis, T. Christou, K. Braimakis, E. Varvagiannis, S. Karellas

31st International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2018), June 17-21 2018, Guimarães, Portugal

[K44] Life cycle assessment of a 1000 MW supercritical pulverized coal power plant under partial loads

X. Han, N. Chen, S. Karellas, M. Liu, J. Liu, J. Yan, E. Kakaras

31st International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2018), June 17-21 2018, Guimarães, Portugal

[K45] Modeling of a large-scale, biomass fired combined heat and power plant coupled with an alumina/aluminium production process

S. Hysenaj, D. Grimekis, A. Doukelis, K. Panopoulos, S. Karellas

31st International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2018), June 17-21 2018, Guimarães, Portugal

[K46] Optimization of supercritical biomass-fueled power plants for industrial CHP, district heating and cooling

K. Braimakis, D. Magiri-Skouloudi, D. Grimekis, S. Karellas

32nd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2019), June 23-28 2019, Wroclaw, Poland

[K47] Environmental evaluation of highly efficient large scale biomass-fueled cogeneration plants

D. Magiri-Skouloudi, N. Dimiroopoulos, D. Grimekis, S. Karellas

32nd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2019), June 23-28 2019, Wroclaw, Poland

[K48] Study of vessel shape effect on charge/discharge rates of a silicon-based LHTES system

M. Zeneli, A. Nikolopoulos, N. Nikolopoulos, S. Karellas, E. Kakaras

32nd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2019), June 23-28 2019, Wroclaw, Poland

[K49] Study of heat losses during charge, discharge and storage period of a LHTES system operating at ultra-high temperatures

M. Zeneli, A. Nikolopoulos, A. Datas, N. Nikolopoulos, S. Karellas, E. Kakaras

32nd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2019), June 23-28 2019, Wroclaw, Poland

[K50] Environmental Performance of ZEOSOL solar cooling setup

G. Kallis, T. C. Roumpedakis, D. Magiri-Skouloudi, S. Karellas

32nd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2019), June 23-28 2019, Wroclaw, Poland

[K51] Performance results of a solar adsorption cooling and heating unit

T. C. Roumpedakis, S. Karellas, S. Vasta, U. Wittstadt, N. Harborth

Proceedings of the ISES Solar World Congress 2019 and IEA SHC International Conference on Solar Heating and Cooling for Buildings and Industry 2019, pp. 664-672

[K52] Exergetic efficiency potential of zeotropic mixtures of CO₂ and non-flammable, ultra-low GWP fluids as working fluids in double stage ORCs

K. Braimakis, S. Karellas

33rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2020), Osaka, Japan

[K53] Comparison of various absorption systems with respect to optimal coefficient of performance

G. Volpato, T. C. Roumpedakis, S. Karellas, C. Frangopoulos, S. Rech, A. Lazzaretto

33rd International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2020), Osaka, Japan

[K54] Replacing natural gas with renewable hydrogen in combined heat and power plants

E.-I. Koytsoumpa, A. Doukelis, S. Karellas

34th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2021), June 27 – July 2 2021, Taormina, Italy

[K55] Energy and exergy analysis of a waste heat recovery trigeneration system based on Organic Rankine Cycle and Ejector Cooling Cycle

K. Braimakis, C. Xynos, S. Karellas

35th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2022), July 3-7 2022, Copenhagen, Denmark

[K56] Environmental assessment of biological CO₂ capture and utilization (Bio-CCU) applications for the production of platform chemicals from industrial waste gases

D. Magiri – Skouloudi, O. Kallis, S. Karellas

35th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2022), July 3-7 2022, Copenhagen, Denmark

[K57] Environmental assessment of an industrial power-to-hydrogen-to-power system - towards decarbonization of existing natural gas fueled CHP plants

A. Macheras, D. Magiri – Skouloudi, S. Karellas

35th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2022), July 3-7 2022, Copenhagen, Denmark

[K58] Preliminary results of the experimental testing of a building prototype with a novel seasonal energy storage based on selective water sorbents

D. Vérez, E. Borri, J. Fernández-Cantero, A. Frazzica, V. Brancato, B. Dawoud, M. Mikhaeil, Z. Ure, A. Rompel, T. Gimbernat, J. Comelles, E. Nowak, K. Chalikakis, S. Person, B. Palm, S. N. Gunasekara, A. Leontaritis, S. Karellas, L. F. Cabeza. 36th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2023), June 25-30 2023, Las Palmas de Gran Canaria, Spain

[K59] Dynamic modelling of ORC system for vessel waste heat recovery

G. Verykokkos, E. Varvagiannis, K. Braimakis, S. Karellas

36th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2023), June 25-30 2023, Las Palmas de Gran Canaria, Spain

[K60] Thermodynamic investigation and design of a multigeneration ORC-ejector cooling cycle heat pump for vessel waste heat recovery

K. Braimakis, C. Xynos, S. Karellas. 36th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2023), June 25-30 2023, Las Palmas de Gran Canaria, Spain

[K61] Thermodynamic investigation and design of a multigeneration ORC-ejector cooling cycle heat pump for vessel waste heat recovery

K. Braimakis, C. Xynos, S. Karellas. 36th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2023), June 25-30 2023, Las Palmas de Gran Canaria, Spain

[K62] Experimental investigation of two-phase expansion using a commercial single-phase scroll expander

E. Varvagiannis, T.C. Roumpedakis, A.D. Leontaritis, K. Braimakis, A. Charalampidis, S. Karellas

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K63] Performance investigation of a hybrid small scale reversible heat pump coupled with an adsorption chiller

A. Charalampidis, T.C. Roumpedakis, N. Sarantopoulos, S. Karellas

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K64] Development of a numerical platform for techno-economic assessment of decarbonising technologies in vessels

T.C. Roumpedakis, O. Kallis, P. Pallis, A. Stainhauer, C. Schiffler, A.G. Elkafas, S. Karellas

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K65] Thermodynamic modelling and comparison of diabatic compressed air energy storage configurations for different charging/discharging duration ratios

K Braimakis, H. Avgerinou, T.C. Roumpedakis, S. Karellas

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K66] Preliminary modelling of two-phase expansion using a commercial single-phase scroll expander

K Braimakis, T.C. Roumpedakis, A.D. Leontaritis, S. Karellas

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K67] Development and experimental assessment of a solar cooling system based on ejector cooling cycle

K. Braimakis, S. Kalyvas, G. Palamidis, T.C. Roumpedakis, A. Charalampidis, E. Varvagiannis, S. Karellas

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K68] Environmental and techno-economic optimization of geothermal ORC for medium enthalpy resources using artificial neural networks and considering the long-term performance of the reservoir

S. Gkousis, K. Braimakis, P. Nimmegeers, T. Compernelle, S. Karellas

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K69] Part-load modelling of industrial waste heat recovery ORC with different operating strategies

K. Braimakis, M. Westermeier, C. Schiffechner, M. Beaughon, S. Karellas, A. Charalampidis

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K70] Process modeling and economic viability analysis of a power-to-H₂-to-power system: case study in China

Y. Li, Y. Dai, X. Han, X. Guo, S. Karellas, J. Yan

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K71] Economic assessment of a novel system based on solar and biomass energy for residential applications in continental climates

S. Baumgarten, E. Borri, G. Zsembinski, A. Charalampidis, S. Karellas.

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K72] Multi-objective genetic algorithm optimization of energy efficiency measures in a single family house building in Greece

K. Braimakis, D. Ioannidis, P. Rigopoulos, P. Pallis, S. Karellas. 37th Int. Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K73] Multi-objective genetic algorithm optimization of energy efficiency measures in a single family house building in Greece

N. Karkalos, K. Braimakis, A. Markopoulos, A.-D. Leontaritis, S. Karellas

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K74] Life Cycle Assessment of methanol production by carbon capture and utilisation on a retrofitted power plant

V. Kontou, A. Georgiopoulos, S. Karellas. 37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K75] Optimizing the design of an ORC air-cooled condenser for industrial waste heat recovery: a trade-off between power consumption and required face area

L. Irrgang, C. Schiffechner, M. Ammerer, M. Beaughon, K. Braimakis, S. Karellas, A. Serafino, T. Andresen, H. Spliethoff

37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K76] Flexible Techno-Economic Assessment Tool for Optimal Electrolysis-RES Coupling

N. Skordoulis, S. Karellas, V. Kontou. 37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[K77] Experimental characterization of a steam driven 100 kW_{el} ORC developed for on board applications

P. Pallis, T. C. Roumpedakis, O. Kallis, S. Karellas. 37th International Conference on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems (ECOS 2024), June 30 – July 5 2024, Rhodes, Greece

[L] PUBLICATIONS IN PROCEEDINGS OF INTERNATIONAL CONFERENCES (Abstract Reviewed Papers)

[L1] Online Analyse der Qualität des Produktgases aus der Biomassevergasung mittels Laserspektroskopie

S. Karellas, F. Christ, J. Karl. 1. Tagung Deutsch-Griechische Forschung, 28-29 Juni 2003, Berlin, Deutschland

[L2] Exergetic and economic analysis of gas turbine concepts

R. Leithner, N. Aronis, A. Doukelis, E. Kakaras, S. Karellas

CLEAN AIR 2003 Seventh International Conference on Energy for a Clean Environment, Lisbon, Portugal, 7-10 July 2003

[L3] Heatpipe Reformer Prototyp A – Experimentelle Ergebnisse

Th. Metz, S. Kuhn, S. Karellas, J. Karl

Arbeitsgruppentreffen Wasserstoffreiches Vergasungsgas der FEE e.V., 15.09.2003, Merseburg (Halle), veröffentlicht in: Ökologische Stoffverwertung Berichte 1/03, Hrsg.: Fördergemeinschaft Ökologische Stoffverwertung e.V. Halle/Saale, FÖST Verl.: Henner-Verl., Grennigloh & Co.ohG, Halle /Saale, Deutschland

[L4] Erzeugung von Synthesegas mit dem Biomass Heatpipe Reformer – Betriebserfahrungen und Leistungsgrenzen

J. Karl, S. Karellas, S. Kuhn, T. Metz.

DGMK (Deutsche Wissenschaftliche Gesellschaft für Erdöl, Erdgas und Kohle e.V.) Tagungsbericht, Energetische Nutzung von Biomassen, 19.- 21.April04 Velen- Westf., Deutschland

[L5] Experimental Results of the Biomass Heatpipe Reformer

T. Metz, S. Kuhn, S. Karellas, R. Stocker, J. Karl, D. Hein. 2nd World Conference and Technology Exhibition on Biomass for Energy and Climate Protection, 10-14 May 2004, Rome, Italy

[L6] Heatpipe Reformer – Experimentelle Ergebnisse

S. Kuhn, S. Karellas, T. Metz, J. Karl. 10. Internationaler Kongress für nachwachsende Rohstoffe und Pflanzenbiotechnologie, 07-08 Juni 2004, Magdeburg, Deutschland

[L7] Use of the Raman spectroscopy for the analysis of the product gas from the allothermal biomass gasification

S. Karellas, J. Karl, T. Metz, S. Kuhn

VDI Optische Technologien, International Symposium on Photonics in Measurement, 23-24 June 2004, Frankfurt, Germany (VDI-Berichte 1844, pp. 23-30, ISBN 3-18-091844-6)

[L8] Highly Efficient SOFC Systems with Indirect Gasification. J. Karl, S. Karellas. Lucerne Fuel Cell Forum, 2nd

International Fuel Cell Conferences with Exhibition, 28 June – 2 July 2004, Kultur- und Kongresszentrum Luzern, Lucerne, Switzerland

[L9] Online optical analysis of the product gas from the gasification of biomass

S. Karellas, M. Raindl, J. Karl

4. VDI Konferenz über optische Analysenmesstechnik in Industrie und Umwelt, 7.-8.10.2004, Düsseldorf, Deutschland (VDI-Berichte 1863, pp. 65-71, ISBN 3-18-091863-2)

[L10] Investigation of the influence of the gas quality from the biomass gasification on integrated systems with microturbines and fuel cells

S. Karellas, J. Karl

7th International conference on heat engines and environmental protection, May 23-25 2005, Balatonfüred, Hungary

[L11] Combined Heat and Power Production with the Biomass Heatpipe Reformer (BioHPR)

S. Kuhn, S. Karellas, J. Karl, T. Metz, H. Spliethoff

Bioenergy 2005, International Bioenergy in Wood Industry, Conference and Exhibition, 12-15 September 2005, Jyväskylä, Finland

[L12] Highly efficient conversion of syngas from biomass gasification in Solid Oxide Fuel Cells

J. Karl, S. Karellas, N. Frank, H. Spliethoff

14th European Biomass Conference and Exhibition. Biomass for Energy, Industry and Climate protection. Palais des congrès, 17-21 Octobre 2005, Paris, France

[L13] Online analysis of the tar content of the product gas from biomass gasification. Application on the BioHPR

S. Karellas, S. Kuhn, T. Metz, J. Karl.

14th European Biomass Conference and Exhibition. Biomass for Energy, Industry and Climate protection. Palais des Congrès, 17-21 Octobre 2005, Paris, France

[L14] Degradation of Solid Oxide Fuel Cells with wood gas

N. Frank, M. Saule, S. Karellas, J. Karl.

7th European Solid Oxide Fuel Cell Forum, 3.-7.07.2006, Lucerne, Switzerland

[L15] Biomass combustion with ORC for decentralized bioenergy applications: A techno-economic approach

A. Rentizelas, S. Karellas, E. Kakaras, I. Tatsiopoulou

4th European Congress Economics and Management in Engineering, 27-30 Nov.07, Porto, Portugal

[L16] Application of laser spectroscopy for the quantitative analysis of biomass gasification tars

P. Mitsakis, S. Karellas, H. Spliethoff

16th European Biomass Conference & Exhibition. From Research to Industry and Markets 02-06 June 2008, Feria Valencia, Spain

[L17] Energetic and exergetic analysis of a retrofitted CCS plant firing low quality lignite

E. Kakaras, S. Karellas, A. Doukelis, A. Koumanakos, A. Manettas

The 35th International Technical Conference on Clean Coal & Fuel Systems. Coal: Rising to New Challenges, June 6 to 10, 2010, Sheraton Sand Key, Florida, USA

[L18] Two step optimization approach for increase of Engine-ORC efficiency

D. Gewald, A. Schuster, S. Karellas, H. Spliethoff

ORC 2011 First International Seminar on ORC Power Systems, 22-23 September 2011, Aula Conference Center, TU Delft, The Netherlands

[L19] Activated carbon's adsorption potential of tar species from syngas in warm conditions

E.I. Koytsoumpa, C. Michailof, K. D. Panopoulos, P. Bour, S. Karellas, A. Lappas, A. Lemonidou

20th European Biomass Conference and Exhibitions Setting the course for a biobased economy. Milano Convention Center, Milan Italy, 18-22 June 2012

[L20] Investigation of the production of Substitute Natural Gas in Greece from local biomass feedstock by means of the BioHPR

S. Karellas, S. Kapodistrias, K. Panopoulos, J. Karl. 20th European Biomass Conference and Exhibitions Setting the course for a biobased economy. Milano Convention Center, Milan Italy, 18-22 June 2012

[L21] Assessing the applicability of circulating fluidized bed gasification of five promising biomasses for energy production within a biorefinery: focus on agglomeration issues

C. Christodoulou, E.I. Koytsoumpa, K. D. Panopoulos, S. Karellas, E. Kakaras

20th European Biomass Conference and Exhibitions Setting the course for a biobased economy. Milano Convention Center, Milan Italy, 18-22 June 2012

[L22] Biomass feedstocks characterization for energy and biorefinery options. The case for giant reed, switchgrass and cardoon

M. Christou, E. Alexopoulou, C. Christodoulou, E.I. Koytsoumpa, K.D. Panopoulos, S. Karellas International Conference Biofuels for Sustainable Development of Southern Europe, 19-20 November 2012, Thessaloniki, Greece

[L23] Biomass feedstocks for energy markets. The case for giant reed, switchgrass and cardoon

M. Christou, E. Alexopoulou, C. Christodoulou, E.I. Koytsoumpa, K.D. Panopoulos, S. Karellas, IEA Bioenergy Conference Vienna, Austria 2012

[L24] Comparison of acid gas removal processes in coal-derived SNG production

E.-I. Koytsoumpa, K. Atsonios, K. D. Panopoulos, S. Karellas, E. Kakaras, 6th International Conference on Clean Coal Technologies, Thessaloniki, Greece, 12-16 May 2013

[L25] Feasibility and economic evaluation of lignite-to-SNG systems

E.I. Koytsoumpa, S. Karellas, K. D. Panopoulos, E. Kakaras, International Conference on Clean Coal Technologies, Thessaloniki, Greece, 12-16 May 2013

[L26] Circulating fluidized bed gasification of 1st and 2nd generation biofuel seed cakes after oil extraction

C. Christodoulou, D. Grimekis, K. Tsiotas, I. Papamihail, K. D. Panopoulos, D. Vamvuka, S. Karellas, E. Kakaras

21st European Biomass Conference and Exhibitions Setting the course for a biobased economy, Bella Centre, Copenhagen, Denmark, 3-7 June 2013

[L27] Economic evaluation of decentralized pyrolysis for the production of bio-oil as an energy carrier for improved logistics towards a large centralized gasification plant

K. Braimakis, K. Atsonios, K. D. Panopoulos, D. Vamvuka, S. Karellas, E. Kakaras

21st European Biomass Conference and Exhibitions Setting the course for a biobased economy, Bella Centre, Copenhagen, Denmark, 3-7 June 2013

[L28] Conceptual design of a permanent lunar outpost: Surface experiments and instruments for geophysics and geodesy study case

G. Tsakyridis, S. Karellas, C. Lange, R. Rosta, T. Van Zoest. This fourth annual Lunar Graduate Conference (LunGradCon 2013). NASA, AMES Research Center July 10, 2013

- [L29] Hybrid biomass and solar energy-based cogeneration and trigeneration systems combining ORC-VCC cycles**
S. Karellas, K. Braimakis. ASME- ORC 2013. 2nd International Seminar on ORC Power Systems. October 7th & 8th, 2013, DeDoelen, Rotterdam, The Netherlands
- [L30] Energetic and exergetic assessment of waste heat recovery systems in glass industry**
S. Karellas, K. Zourou, K. Braimakis, E. Kakaras. ASME – ORC 2013. 2nd International Seminar on ORC Power Systems. October 7th & 8th, 2013, DeDoelen, Rotterdam, The Netherlands
- [L31] EU Emissions Trading Scheme application in Bulgaria, Greece and Romania**
C.-S. Hatzilau, D. Giannakopoulos, S. Karellas, E. Kakaras
Istanbul Carbon Summit: Carbon Management, Technologies & Trade, 3-5 April 2014, Istanbul, Turkey
- [L32] Biomass pyrolysis kinetics modelling**
Ch. Tsekos, E.-I. Koytsoumpa, K.D. Panopoulos, S. Karellas, E. Kakaras, V. Asouti
22nd European Biomass Conference and Exhibitions Setting the course for a biobased economy, CCH-Congress Center Hamburg, Germany, 23-26 June 2014
- [L33] Energy saving potentials for industrial steam boilers – Findings from the Ecodesign process**
A. Aydemir, K. Braimakis, S. Hirzel, S. Karellas, B. Ostrander, C. Rohde
10th European Conference on Industrial Furnaces and Boilers (INFUB-10), Gaia (Porto) - Portugal, at the Hotel Holiday Inn Porto Gaia. 7-10 April 2015
- [L34] Experimental study on a low temperature ORC unit for onboard waste heat recovery from marine Diesel engines**
A.-D. Leontaritis, P. Pallis, S. Karellas, A. Papastergiou, N. Antoniou, P. Vourliotis, N.-M. Kakalis, G. Dimopoulos
ASME - ORC 2015, 3rd International Seminar on ORC Power Systems, Brussels, Belgium, 12-14 October 2015
- [L35] Investigation and optimization of the operation and design of a small scale experimental trigeneration system powered by a supercritical ORC**
T. Roumpedakis, K. Braimakis, S. Karellas
ASME - ORC 2015, 3rd International Seminar on ORC Power Systems, Brussels, Belgium 12-14 October 2015
- [L36] Experimental performance evaluation of a multi-diaphragm pump of a micro-ORC system**
G. Carraro, P. Pallis, A. Leontaritis, S. Karellas, P. Vourliotis, S. Rech, A. Lazzaretto
ORC 2017. 4th International Seminar on ORC power systems, Milano, Italy, 13-15 September 2017
- [L37] Selection and establishment of energy crops in abandoned and unused land for biomass production in cambrils**
D.-S. Kourkoumpas, C.E. Papadelis, P. Grammelis, S. Karellas, E. Kakaras
26th European Biomass Conference and Exhibition, Copenhagen, Denmark, 14-18 May 2018
- [L38] Modelling of a 3MWth gasifier in aspenusTM**
D. Grimekis, M.A. Delgado Calvo, K. Panopoulos, S. Karellas
26th European Biomass Conference and Exhibition, Copenhagen, Denmark, 14-18 May 2018
- [L39] Ultra-low GWP Refrigerant Mixtures as Working Fluids in ORC for Waste Heat Recovery**
K. Braimakis, A. Mikelis, A. Charalampidis, S. Karellas
ORC 2019. 5th International Seminar on ORC power systems, Athens, Greece, 09 -11 September 2019
- [L40] Exergetic and Economic Analysis of a Solar Driven Small Scale ORC**
T. Roumpedakis, G. Loumpardis, S. Karellas
ORC 2019. 5th International Seminar on ORC power systems, Athens, Greece, 09 -11 September 2019
- [L41] Design of a reversible heat pump/organic Rankine cycle unit for a renewables-based trigeneration system**
A. Charalampidis,, K. Braimakis, S. Karellas
ORC 2021. 6th International Seminar on ORC power systems, Munich, Germany, 11-13 October 2021
- [L42] Life Cycle Assessment (LCA) of an air-cooled ORC system for waste heat recovery**
T. Roumpedakis, G. Karllis, Z. Koutantzi, P. Pallis, A. Charalampidis, S. Karellas
ORC 2021. 6th International Seminar on ORC power systems, Munich, Germany, 11-13 October 2021
- [L43] Economic model predictive control on a waste heat recovery micro-ORC**
E. Varvagiannis, I Kalogeropoulos, T. Roumpedakis, P. Pallis, S. Karellas, H. Sarimveis
ORC 2021. 6th International Seminar on ORC power systems, Munich, Germany, 11-13 October 2021
- [L44] TES4TRIG: Development of a demonstrator for the production of electricity, heating and cooling based on an Organic Rankine Cycle and an ejector cooling cycle driven by high temperature parabolic trough collectors with thermal energy storage**
K. Braimakis, D. Tziritas, G. Stavrakakis, J. T. Gutiérrez, S. Dutta, C. Xynos, P. Zervas, S. Karellas
ORC 2023. 7th International Seminar on ORC power systems, Seville, Spain, 4-6 September 2023

LIST OF SUPERVISED PHDs

[M1] Euthimia- Ioanna Koytsoumpa (15.6.2017)

Production of Substitute Natural Gas and Methanol for Energy Storage.

This PhD has been awarded for its innovation from VGB (Excellence in Energy storage in Power Plants)

[M2] Konstantinis Braimakis (09.11.2018)

Multi-scale Thermo-economic optimization and thermodynamic assessment of energetic and exergetic efficiency improvement concepts of Organic Rankine Cycle

In the framework of this PhD work, the candidate has received a scholarship from ASME and KCORC in order to accomplish its collaborative work with the Universität Bayreuth. This PhD has also received the Award "D. Chorafa" for the year 2018.

[M3] Dimitrios Grimekis (18.12.2019)

Cleaning of syngas produced from fossil and renewable solid fuel gasification

[M4] Platon Pallis (17.06.2020)

Experimental investigation and economic assessment of a fully automated ORC for waste heat recovery from marine engine jacket cooling water.

[M5] Tryfon Roumpedakis (27.10.2021)

Thermodynamic analysis and experimental investigation of small scale solar driven systems for cooling, heating and power production

[M6] Myrto Zeneli (24.04.2023)

Numerical investigation of novel energy storage systems based on multi-phase flows

[M7] Dimitrios-Sotirios Kourkoumpas (To be examined on the 13.01.2025)

Evaluation of sustainable energy routes, under a circular economy framework, using life cycle analysis principles in a multi-parametric approach

LIST OF ONGOING SUPERVISED PHDs

[N1] Antonios Charalampidis (Start 5.11.2018)

Trigeneration systems based on reversible Organic Rankine Cycle

[N2] Despina. Magiri-Skouloudi (Start 5.11.2018)

Simulation and experimental investigation of gas fermentation processes for the production of platform chemicals from industrial waste gases

[N3] Nikolaos Barmparitsas (Start 5.11.2018)

Environmental impact and definition of the minimum energy efficiency of Heat Pumps for the optimization of CO₂ emissions in the building sector

[N4] Georgios Meramveliotakis (Start 26.10.2020)

Modelling of energy systems with Heat pumps and experimental validation of a prototype system

[N5] Nikolaos Skordoulis (Start 24.04.2023)

Production and use of hydrogen in energy systems

[N6] Epameinondia Aggelou (Start 23.10.2024)

Design of multifunctional positive energy buildings with low carbon footprint