

CURRICULUM VITAE

Dipl.-Ing. Dr.mont. Stefan Puschnigg

CONTACT DETAILS

First name/last name Stefan Puschnigg
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EDUCATION

03/2019 – 09/2023 Doctoral program in Industrial Energy Engineering
Chair of Energy Network Technology
Montanuniversität Leoben
Academic degree: Dr.mont.

10/2021 – 03/2022 Co-enrollment in doctoral program energy research
Johannes Kepler University Linz
Focus: Econometric methods and applications to energy research

10/2014 – 03/2017 Master program in Mechanical Engineering and Business Economics
Graz University of Technology
Specialization: energy engineering, technology management
Academic degree: Dipl.-Ing.

09/2015 – 12/2015 Semester abroad
McMaster University, Canada
Focus areas: Thermo-Fluid Systems, Innovation Driven Project
Development and Management, Marketing

10/2011 – 07/2014 Bachelor program in Mechanical Engineering and Business
Economics
Graz University of Technology
Academic degree: BSc

09/2005 – 06/2010 Secondary Technical College Kaindorf
Focus areas: Mechanical and Automation Engineering

WORK EXPERIENCE

Since 06/2023 Senior Researcher – Department of Energy Technology at the
Energieinstitut an der Johannes Kepler Universität Linz

06/2021– 05/2023 Research Associate – Department of Energy Technology at the
Energieinstitut an der Johannes Kepler Universität Linz

06/2018 – 05/2021	Junior Researcher – Department of Energy Technology at the Energieinstitut an der Johannes Kepler Universität Linz
08/2017 – 09/2017	Internship – Department pump design and dimensioning Andritz AG, Graz; Digitalisation of calculation archive and Customer Relationship Management
06/2016 – 03/2017	Master thesis – Institute of Innovation and Industrial Management Graz University of Technology Master thesis: Technology Evaluation and Assessment of its Impact
10/2014 – 07/2016	Research assistant – Institute of Machine Components and Methods of Development Graz University of Technology Gearbox dimensioning and engineering
07/2011 – 09/2014	Internship – Department Continuous Casting Technology Primetals Technologies (once Siemens VAI), Linz Engineering and research activities
2006 – 2011	Internships at Magna Powertrain and Umdasch Shopfitting

COMPETENCES AND ADDITIONAL SKILLS

- Techno-economic analyses and life cycle analyses
- GaBi software by Sphera for life cycle assessment
- Basic knowledge in IPSEpro
- Programming languages: Java, C, C#, R
- 3D/CAD software: Autodesk Inventor, AutoCAD, Creo
- Basic knowledge in Matlab, LabVIEW, SAP, PSP
- Inkscape: create and edit vector graphics
- Citavi, Zotero: literature databases
- QGIS: geographic information system to analyze spatial data
- Part of the Energieinstitut's internal dissemination and IT task force
- FFG Fit4Funding training for European funding programs for Research & Innovation

SELECTED PUBLICATIONS

Research papers and articles:

Puschnigg S. (2023) Application of an integrated life cycle assessment approach toward a carbon-neutral industry, Doctoral Thesis, <https://doi.org/10.34901/mul.pub.2023.190>

Puschnigg S., Knöttner S., Lindorfer J., Kienberger T. (2023) Development of the virtual battery concept in the paper industry: Applying a dynamic life cycle assessment approach, Sustainable Production and Consumption, volume 40, <https://doi.org/10.1016/j.spc.2023.07.013>

Zeilerbauer L., Hubmann F., Puschnigg S., Lindorfer J. (2023) Life cycle assessment and shadow cost of steam produced by an industrial-sized high-temperature heat pump, Sustainable Production and Consumption, volume 40, <https://doi.org/10.1016/j.spc.2023.06.016>

Puschnigg S., Fazeni-Fraisl K., Lindorfer J, Kienberger T. (2023) Biorefinery development for the conversion of softwood residues into sustainable aviation fuel: Implications from life cycle assessment and energetic-exergetic analyses, Journal of Cleaner Production, volume 386, <https://doi.org/10.1016/j.jclepro.2022.135815>

Margaritis N.; Evaggelou C., Grammelis P., Yiannoulakis H., Papageorgiou P., Puschnigg S., Lindorfer J. (2022) Use of biomass as alternative fuel in magnesia sector, Fuels, volume 3, no. 4, <https://doi.org/10.3390/fuels3040039>

Volkova A., Reuter, S., Puschnigg S., Kauko H., Schmidt R-R., Leitner B., Moser S. (2022) Cascade sub-low temperature district heating networks in existing district heating systems, Smart Energy, <https://doi.org/10.1016/j.segy.2022.100064>

Puschnigg S., Lindorfer J., Moser S., Kienberger T. (2021) Techno-economic aspects of increasing primary energy efficiency in industrial branches using thermal energy storage, Journal of Energy Storage, <https://doi.org/10.1016/j.est.2021.102344>

Puschnigg S., Jauschnik G., Moser S., Linhart M. (2021) A review of low-temperature sub-networks in existing district heating networks: examples, conditions, replicability, Energy Reports, volume 7, <https://doi.org/10.1016/j.egy.2021.09.044>

Moser S. and Puschnigg S. (2021) Supra-Regional District Heating Networks: A Missing Infrastructure for a Sustainable Energy System, Energies, <https://doi.org/10.3390/en14123380>

Böhm H., Moser S., Puschnigg S., Zauner A. (2021) Power-to-hydrogen & district heating: Technology-based and infrastructure-oriented analysis of (future) sector coupling potentials, International Journal of Hydrogen Energy, <https://doi.org/10.1016/j.ijhydene.2021.06.233>

Moser S.; Puschnigg S., Rodin V. (2020) Designing the Heat Merit Order to determine the value of industrial waste heat for district heating systems, Energy, 200:117579, <https://doi.org/10.1016/j.energy.2020.117579>

Holzleitner M., Moser S., Puschnigg S. (2020) Evaluation of the impact of the new Renewable Energy Directive 2018/2001 on third-party access to district heating networks to enforce the feed-in of industrial waste heat, Utilities Policy,66:101088, <https://doi.org/10.1016/j.iup.2020.101088>

de Bruyn K., Holzleitner M., Lassacher S., Moser S., Puschnigg S., Rodin V. (2019) S-PARCS Deliverable D1.2 Working paper: Barriers towards Energy Cooperation

Lassacher S., Puschnigg S., Lindorfer, J. (2018) Technische Aspekte der Forcierung von Primärenergieeffizienz an oberösterreichischen Produktionsstandorten durch Nutzung von Wärmespeichern

Puschnigg, S. (2017) Technology Evaluation and Assessment of its Impact, master thesis, Institute of Innovation and Industrial Management, Graz University of Technology

Puschnigg, S. (2014) Konzeptuntersuchung von aktiven Einzelradlenkungen bei mehrspurigen Fahrzeugen, bachelor thesis, Institute of Automotive Engineering, Graz University of Technology

Conference presentations and proceedings:

Puschnigg S., Goers S., Müller C., Vilbergsson K. (2023) An environmental comparison of heavy-duty trucks with fuel cells and their fossil and electric counterparts, 11th International Conference on Life Cycle Management, 5th to 8th September 2023, Lille (France)

Puschnigg S., Knöttner S., Lindorfer J. (2022) Development of a virtual battery concept demonstrator: A case study from the pulp and paper industry, 17th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), 6th to 10th of November 2022, Paphos (Cyprus)

Puschnigg S., Moser S., Goers S. (2022) A techno-economic and macro-economic concept study of waste heat utilization of a cement plant, New Energy For Industry (NEFI) conference, 13th to 14th of October, Linz (Austria)

Puschnigg S. and Fazeni-Fraisl K. (2022) A life cycle assessment of high characteristics drop-in biofuels from residual soft wood, CONECT – International Scientific Conference of Environmental and Climate Technologies, Riga Technical University, 11th of May 2022 (Latvia)

Puschnigg S., Volkova A., Reuter S., Kauko H., Schmidt R.-R., Leitner B., Moser S., Jauschnik G. (2021) An analysis of cascaded low-temperature sub-networks in existing district heating networks, 7th International Conference on Smart Energy Systems (SES), 21st to 22nd of September 2021 Copenhagen (Denmark)

Jauschnik G., Puschnigg S., Moser S. (2021) Good Practice Examples für Niedertemperatur-Subnetze in bestehenden Fernwärmenetzen, 12. Internationale Energiewirtschaftstagung (IEWT), 8th to 10th September 2021, Vienna (Austria)

Moser S.; Puschnigg S., Rodin V. (2020) Designing the Heat Merit Order to determine the value of industrial waste heat for district heating systems, 14th Conference on Sustainable Development of Energy, Water and Environment Systems, 1st to 6th October 2019, Dubrovnik (Croatia)

Puschnigg S. (2019) Kurzvortrag EU Horizon Projekt REWOFUEL, Forum Econogy 2019, 25th of September 2019, Linz (Austria)

Puschnigg S., Fazeni-Fraisl K., Lindorfer J. (2019) Bio-isobutene: Life Cycle Assessment of an emerging technology for biobased fuels and materials, 9th International Conference on Life Cycle Management, 1st to 4th September 2019, Poznan (Poland)