

Kasia Arturi

ANALYTICAL · ENVIRONMENTAL · DATA · SCIENCES

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Personal

Katarzyna Arturi	25.10.1984	Polish	Partnership	Reading & Hiking
FULL NAME	BORN	NATIONALITY	CIVIL STATUS	HOBBIES

Research-ID

56226589000	L-4613-2017	12	245	0000-0001-5829-8370
SCOPUS ID	GOOGLE SCHOLAR	PUBLICATIONS	CITATIONS	ORCID ID

Scientific Experience & Education

Postdoctoral Scientist

Sept. 2020 - now

SWISS FEDERAL INSTITUTE OF AQUATIC SCIENCE AND TECHNOLOGY, DEPARTMENT ENVIRONMENTAL CHEMISTRY

Dübendorf, Switzerland

- EXPECTmine project with Prof. Juliane Hollender
- Data mining for linking exposure to effects in complex mixtures.

Marie Skłodowska-Curie Postdoctoral Researcher

Sept. 2018 - Aug. 2020

PAUL SCHERRER INSTITUTE, ENERGY AND ENVIRONMENT DIVISION

Villigen, Switzerland

- Solvolig2Chem project with MSCA-IF-2017 individual fellowship (H2020 no. 794039).
- Selective lignin depolymerization via biphasic solvolysis. High-resolution mass spectrometry (HRMS). Data mining.

Interlaboratory Postdoctoral Fellow

Sept. 2017 - Aug. 2018

PAUL SCHERRER INSTITUTE, ENERGY AND ENVIRONMENT DIVISION

Villigen, Switzerland

- Analysis of energy and environmental related samples from biofuel production and biomass burning via HRMS.
- Atmospheric (LAC), Environmental (LUC), Combustion (CRL) and Bioenergy Laboratories (LBK).

Scientific Assistant

Feb. 2017 - Aug. 2017

AALBORG UNIVERSITY, DEPARTMENT OF CHEMISTRY AND BIOSCIENCE

Aalborg, Denmark

- Various industrial projects.

Doctor of Philosophy, PhD

Mar. 2014 - Feb. 2017

AALBORG UNIVERSITY, BIOTECHNOLOGY, CHEMISTRY, AND ENVIRONMENTAL ENGINEERING PROGRAMME

Aalborg, Denmark

- Value-added biorefinery products by optimization of hydrothermal liquefaction of wastes.
- Analytics for detailed characterization of complex product mixtures.
- Application of statistics and multivariate data analysis workflows.

Scientific Assistant

Jul. 2012 - Feb. 2014

AALBORG UNIVERSITY, DEPARTMENT OF CHEMISTRY AND BIOSCIENCE

Aalborg, Denmark

- Various industrial projects

Master of Science, MSc

Sept. 2010 - Jun. 2012

AALBORG UNIVERSITY ESBJERG, CHEMICAL ENGINEERING SECTION

Esbjerg, Denmark

- Comparison of biological and chemical iron precipitation.
- Optimization of iron removal from groundwater on Danish water works.
- Classification of iron precipitates based on microscopy and computer vision.

Bachelor of Science, BSc

Sept. 2007 - Jul. 2010

AALBORG UNIVERSITY ESBJERG, CHEMICAL ENGINEERING SECTION

Esbjerg, Denmark

- Advanced oxidation of organic micro pollutants.
- Environmental assessment of lake pollution.
- Fate of heavy metals (Mo and Sb) in industrial waste water effluents.

Programming & Language Skills

Programming SQL, Python, R, Matlab, PHREEQ, LaTeX, git

Languages **Polish** (mother tongue, C2), **Danish** (bilingual, C2), **English** (full proficiency C2), **German** (B2), **Italian** (A2)

Statistics Parametric and non-parametric, general linear models, univariate and multivariate, image analysis, classification and clustering, supervised and unsupervised, neural networks, supported vector machines.

Laboratory & Technical Skills

Analytics GC, LC, MS, ICP-AES, AAS, TGA, DSC, HHV, CHNS-O, UV-Vis, COD, BOD, TOC, XRF, XRD, FTIR, Saxes, EPR, microscopy

Technical skills High pressure reactor development, instrument maintenance, custom laboratory set-up development.

Sample Preparation techniques, representative sampling, field sampling, analytical method development.

Conferences, Courses & Meetings

2020	Online DataCamp Course , Data Scientist with R	#151,863
2020	Online DataCamp Course , Machine Learning Scientist with R	#180,962
2020	Online Coursera Course , Toxicology 21: Scientific Applications	Johns Hopkins
2019	Online Coursera Course , Machine Learning	Stanford
2019	Poster , Biomass to Biobased Chemicals and Materials, Gordon Conference	Newry, USA
2019	Oral , European Biomass Conference and Exhibition	Lisbon, Portugal
2019	Presenter , Failed and bored MCAA conference	Innsbruck, Austria
2019	Attendee , Marie Curie Association General Assembly and Conference	Vienna, Austria
2017	Poster , Applications of Advanced Oxidation Process Conference	Prag, Czech
2016	Oral , Sustainable Water Processing Conference	Sitges, Spain
2016	Poster , European Biomass Conference and Exhibition	Amsterdam, NL

Awards & Memberships

AWARDS

2018	Funding , Marie Curie Individual Fellowship	200 kCHF
2014	Talented Student Award , Esbjerg University Prize	5 kCHF
2012	Master Project Scholarship , Carlsberg's Mindelegats Scholarships	10 kCHF

MEMBERSHIPS

2020	Member , Society of Environmental Toxicology and Chemistry Europe
2019	Member , Connecting Women's Careers in Academia and Industry (CONNECT)
2019	Member , European Platform for Women in Science (EPWS)
2018	Mentee , Fix-the-Leaky-Pipeline program
2018	Member , Marie Curie Alumni Association
2018	Expert , European Commission Expert Panel

Teaching & Supervision

2017-2019	Graduate level , Master student supervision at PSI.	2 x 10 ECTS
2012-2016	Undergraduate level , Chemistry, Products, and Processes at AAU/Southern University of Denmark.	3 x 10 ECTS
2012-2016	Undergraduate level , Training of students in laboratory techniques at AAU.	10 x 3 ECTS
2012-2016	Undergraduate & Graduate level , Supervision of student projects at AAU.	8 x 15 ECTS

Postdoc Publications

- XII **A Comprehensive Nontarget Analysis for the Molecular Reconstruction of Organic Aerosol Composition from Glacier Ice Cores**, Alexander Vogel, Anja Lauer, **Katarzyna R Arturi**, Ling Fang, Franziska Bachmeier, Kaspar Dallenbach, and Timon Käser, Athanasia Vlachou, Veronika Pospisilova, Urs Baltensperger, Imad El Haddad, Margit Schwikowski, Saša Bjelić, *Environmental Science and Technology*, Vol. 53(21), pp. 12565–12575, 2019
- XI **Molecular footprint of co-solvents in hydrothermal liquefaction (HTL) of *Fallopia japonica***, **Katarzyna R. Arturi**, Sergey Kucheryavskiy, Marco Maschietti, Rudi P. Nielsen, Frédéric Vogel, Saša Bjelić, and Erik G. Søgaaard, *Journal of Supercritical Fluids*, Vol. 143, pp. 211–222, 2019
- X **Oxidative biphasic depolymerization (BPD) of Kraft lignin at low pH**, Saša Bjelić, Luca Garbuio, **Katarzyna R. Arturi**, Jeroen A. van Bokhoven, Gunnar Jeschke, Frédéric Vogel, *ChemistrySelect*, Vol. 3(41), pp. 11680–11686, 2018

PhD Publications

- IX **Performance of hydrothermal liquefaction (HTL) of biomass by multivariate data analysis**, **Katarzyna R. Arturi**, Sergey Kucheryavskiy, and Erik G. Søgaaard, *Fuel Processing Technology*, Vol. 150, pp. 94–103, 2016
- VIII **Recovery of value-added chemicals by solvolysis of unsaturated polyester resin**, **Katarzyna R. Arturi**, Hülya U. Sokoli, Erik G. Søgaaard, Frédéric Vogel, and Saša Bjelić, *Journal of Cleaner Production*, Vol. 170, pp. 131–136, 2017
- VII **Characterization of liquid products from hydrothermal liquefaction (HTL) of biomass via solid-phase microextraction (SPME)**, **Katarzyna R. Arturi**, Kathrine R. Toft, Rudi P. Nielsen, Lasse A. Rosendahl, and Erik G. Søgaaard, *Biomass and Bioenergy*, Vol. 88, pp. 116–125, 2016
- VI **Hydrothermal liquefaction of lignin in near-critical water in a new batch reactor: Influence of phenol and temperature**, **Katarzyna R. Arturi**, Morten Strandgaard, Rudi P. Nielsen, Erik G. Søgaaard, and Marco Maschietti, *Journal of Supercritical Fluids*, Vol. 123, pp. 28–39, 2017
- V **Conversion of the matrix in glass fiber reinforced composites into a high heating value oil and other valuable feedstocks**, Hülya U. Sokoli, Morten E. Simonsen, Rudi P. Nielsen, **Katarzyna R. Arturi**, and Erik G. Søgaaard, *Fuel Processing Technology*, Vol. 149, pp. 29–39, 2017
- IV **Continuous hydrothermal co-liquefaction of aspen wood and glycerol with water phase recirculation**, Thomas H. Pedersen, Jessica F. Hoffman, Saquib S. Toor, Iulia M. Daraban, Claus U. Jensen, Rudi P. Nielsen, **Katarzyna R. Arturi**, Erik G. Søgaaard, and Lasse A. Rosendahl, *Applied Energy*, Vol. 162, pp. 1034–1041, 2016

Master Publications

- III **Superhydrophilicity and durability of fluoropolymer-TiO₂ coatings**, **Katarzyna R. Arturi**, Henrik Jepsen, Jesper N. Callsen, Erik G. Søgaaard, and Morten E. Simonsen, *Progress in Organic Coatings*, Vol. 90, pp. 132–138, 2016
- II **Characterization and comparison of iron oxyhydroxide precipitates from biotic and abiotic groundwater treatments**, **Katarzyna R. Arturi**, Christian B. Koch, and Erik G. Søgaaard, *Journal of Water Supply: Research and Technology*, Vol. 66.2, pp. 96–104, 2017
- I **Removal of arsenic from contaminated groundwater with application of iron electrodisolution, aeration and sand filtration**, Krzysztof Kowalski, **Katarzyna R. Arturi**, and Erik G. Søgaaard, *Water Science and Technology: Water Supply*, Vol. 162, pp. 1034–1041, 2016

Work-in-Progress

- A **High-Resolution Mass Spectrometry Method Development for Molecular Characterization of Secondary Organic Aerosols**, **Katarzyna R. Arturi**, Vaios Machos, Athanasia Vlachou, Urs Baltensperger, Imad El Haddad, Saša Bjelić
- B **Universal internal standards (uIS) to master matrix effects in mass spectrometry**, Daniil Salionov, **Katarzyna R. Arturi**, Rachel Schmidt, Timon Käser, Saša Bjelić
- C **Molecular blueprinting of aromatics towards mechanistic insights from "one-pot multi-step" biphasic acidolysis of Kraft lignin**, **Katarzyna R. Arturi**, Thomas Rhorbach, Lisavetta Sidarenka, Frédéric Vogel, Saša Bjelić