



Hrvoje Mikulčić

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ABOUT ME

Researcher unique identifier: ORCID, <http://orcid.org/0000-0002-7502-2381>
h-index: 42
5977 citations

EDUCATION AND TRAINING

2009 – 2015 Zagreb, Croatia

PHD IN MECHANICAL ENGINEERING Faculty of mechanical engineering and naval architecture, University of Zagreb, Croatia

Dissertation title: Numerical modelling of thermo- chemical processes inside a cement calciner for a cleaner cement production

PhD Supervisor: Prof Neven Duić

2008 – 2009 Zagreb, Croatia

MASTER OF MECHANICAL ENGINEERING, SUMMA CUM LAUDE Faculty of mechanical engineering and naval architecture, University of Zagreb, Croatia

Master Thesis Supervisor: Prof Zdravko Virag

2004 – 2008 Zagreb, Croatia

BACHELOR OF MECHANICAL ENGINEERING Faculty of mechanical engineering and naval architecture, University of Zagreb, Croatia

Bachelor Thesis Supervisor: Prof Mario Šavar

WORK EXPERIENCE

ASSISTANT PROFESSOR – FACULTY OF MECHANICAL ENGINEERING AND NAVAL ARCHITECTURE, UNIVERSITY OF ZAGREB, CROATIA – Current – ZAGREB, CROATIA

PRESIDENT – ADRIA INNOVATION HARBOUR – Current – VELIKA GORICA, CROATIA

RESEARCH ENGINEER – FACULTY OF MECHANICAL ENGINEERING AND NAVAL ARCHITECTURE, UNIVERSITY OF ZAGREB – 2015 – 2024 – ZAGREB, CROATIA

ENGINEERING SCIENCE RESEARCHER – XI'AN JIAOTONG UNIVERSITY – 2019 – 2023 – XI'AN, CHINA

Postdoctoral Researcher

UNIVERSITY RESEARCH ASSISTANT – FACULTY OF MECHANICAL ENGINEERING AND NAVAL ARCHITECTURE, UNIVERSITY OF ZAGREB – 2009 – 2015 – ZAGREB, CROATIA

● HONOURS AND AWARDS

2023

Stanford List of the Top 2% of Scientists in the World

2022

Stanford List of the Top 2% of Scientists in the World

2018

Award to a young successful scientist “Vera Johanides” – Croatian Academy of Engineering, Croatia

2009

Medal for outstanding success during the Master study at Faculty of mechanical engineering and naval architecture – University of Zagreb, Croatia

● PROJECTS

2025 – CURRENT

SoS2LearnDBS - Source to Sea: Leveraging community knowledge and action for restoring the Danube Basin and the Black Sea

Funding: EC, HORIZON EUROPE

2025 – CURRENT

SWIM - Sustainable Water and Integrated Fish Migration along the Danube

Funding: EC, HORIZON EUROPE

2025 – CURRENT

DANSER - DANube SEdiment Restoration: Towards the Deployment and Upscaling of Sustainable Management of Sediments Across the Danube Catchment Basin

Funding: EC, HORIZON EUROPE

2024 – CURRENT

ADRIONWIND - Adriatic-Ionian Offshore Wind Network of Excellence

Funding: Interreg IPA-ADRION

2024 – CURRENT

StoreMore - Analysing and Promoting Energy Storage Solutions, Developing Tools to Mitigate the Intermittency of RES, Contributing to an Accelerated Transition to Renewable Energy and More Balanced Electrical Grids

Funding: Interreg Danube Region

2024 – CURRENT

AGRI-DIGITAL GROWTH - Precision Farming Ecosystem for Digital Skills enhancement across CE, to support digitalisation, sustainability and specialisation of Agri food manufacturing SMEs in Precision Farming

Funding: Interreg CE

2024 – CURRENT

GARDEN - Greener AgRo-food Logistics in the Mediterranean Area

Funding: Interreg Euro-MED

2023 – CURRENT

DaWetRest - Danube Wetlands and Floodplains Restoration Through Systemic, Community-Engaged, and Sustainable Innovative Actions

Funding: EC, HORIZON EUROPE

2023 – CURRENT

EcoDaLLi - Ecosystem-Based Governance with Danube Lighthouse Living Lab for Sustainable Innovation Processes

Funding: EC, HORIZON EUROPE

2022 – 2024

BLUECEE – Strengthening Policy and Governance Capacity for Blue Energy in Central and Eastern Europe

Funding: German Federal Ministry for Economic Affairs and Climate Action (BMWK), EUKI

2022 – 2023

Action Plan for the uptake of Offshore Renewable Energy Sources in Croatia Funding: European Bank for Reconstruction and Development (EBRD)

Funding: European Bank for Reconstruction and Development (EBRD)

2020 – CURRENT

ET-Rise - Infrastructural Strengthening of RDI Capacity in Energetics and Transport

Funding: EC, ERDF

2019 – 2023

Investigating Energy transition pathways - Interrelation between power-to-X, demand response and market coupling – INTERENERGY

Funding: Croatian Science Foundation

2019 – 2022

BLUE DEAL - Blue Energy Deployment Alliance

Funding: EC, Interreg MED

2022 – 2022

SEADRION PLUS - Fostering diffusion of Heating & Cooling technologies using the seawater pump in the Adriatic-Ionian Region PLUS

Funding: EC, Interreg, ADRION

2020 – 2021

DecreasePM - Reducing the particulate matter emissions by flue gas condensation

Funding: Ministry of Science and Education, Croatia;Croatian - Chinese bilateral project

2016 – 2019

PELAGOS - Promoting innovative nEtworks and cLusters for mArine renewable energy synerGies in mediterranean cOasts and iSlands

Funding: EC, Interreg MED

2012 – 2012

Environmental Impact Study: Acceptance, temporary storage and combustion of refuse derived fuel (RDF / SRF) in cement factory Sveti Juraj

Location: Kaštel Sućurac, Chapter: Greenhouse gas emissions and climate change, Funding: CEMEX Croatia, Split Croatia

2009 – 2016

Numerical modeling of multiphase flow and combustion processes

Funding: AVL List GmbH, Graz, Austria

● **TEACHING ACTIVITIES**

2025 – CURRENT

Teaching Associate

Energy storage, Faculty of mechanical engineering and naval architecture, University of Zagreb, Croatia

2017 – CURRENT

Teaching Associate

Energy Markets for second year graduate students, Faculty of mechanical engineering and naval architecture, University of Zagreb, Croatia

2016 – CURRENT

Teaching Associate

Introduction to Energy Management for first year undergraduate students; Introduction to Renewable Energy Resources and Energy Efficiency for third year undergraduate students, Energy efficiency and Renewable Energy Sources Study, University of Zagreb, Croatia

2015 – CURRENT

Teaching Associate

Introduction to Energy Management for third year undergraduate students; Combustion and Radiation Modelling, and Numerical Methods in Continuum Mechanics for second year graduate students, Faculty of mechanical engineering and naval architecture, University of Zagreb, Croatia

● **DEVELOPMENT OF NEW STUDY PROGRAMMES**

2020 – 2020

In charge of developing and writing of a new curriculum for a Master study in Energy and Environmental Engineering

Faculty of mechanical engineering and naval architecture, University of Zagreb, Croatia

● **CONFERENCES AND SEMINARS**

2019 – 2019 Dubrovnik, Croatia

Special Session Organizer on 14th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES 2019)

578 participants, 12 participants in the Special Session

2018 – 2018 Palermo, Italy

Special Session Organizer on 13th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES 2018)

399 participants, 12 participants in the Special Session

2017 – 2017 Dubrovnik, Croatia

Member of the Local Organizing Committee (LOC) SDEWES 2017

518 participants

2017 – 2017 Dubrovnik, Croatia

Member of the LOC 8th European Combustion Meeting (ECM 2017)

537 participants

2016 – 2016 Piran, Slovenia

Member of the LOC 2nd Southeast European SDEWES (SEESDEWES 2016)

175 participants

2011 – 2015 Multiple

Member of the LOC SDEWES

2011, Dubrovnik, Croatia, 468 participants;
2012, Ohrid, Macedonia, 235 participants;
2013, Dubrovnik, Croatia, 576 participants;
2014, Venice-Istanbul, 229 participants;
2015, Dubrovnik, Croatia, 543 participants

● INSTITUTIONAL RESPONSIBILITIES

2018 – CURRENT

Member of the Faculty Public Relations Committee

Faculty of mechanical engineering and naval architecture, University of Zagreb, Croatia

2016 – 2018

Member of the Faculty Quality Committee

Faculty of mechanical engineering and naval architecture, University of Zagreb, Croatia

● EDITORSHIP ACTIVITIES

2019 – CURRENT

Journal of Cleaner Production

(IF₂₀₁₈= 6.395) Associate Editor

2018 – CURRENT

Journal of Cleaner Production

(IF₂₀₁₇= 5.651) Special Issue Managing Guest Editor

2018 – 2018

Renewable Energy

(IF₂₀₁₇=4.900) Special Issue Guest Editor

2016 – CURRENT

Journal of Environmental Management

(IF₂₀₁₇= 4.005) Special Issue Guest Editor

2016 – 2016

Clean Technologies and Environmental Policy

(IF₂₀₁₆= 3.331) Special Issue Guest Editor

2014 – 2018

Journal of Cleaner Production

(IF₂₀₁₇= 5.651) Special Issue Guest Editor

● REVIEWING ACTIVITIES

2009 – CURRENT

Serving to the scientific community as a reviewer

More than 20 international peer- review journals, with more than 100 reviews done.

● NETWORKS AND MEMBERSHIPS

2009 – CURRENT

The Combustion Institute – Adria Section

Member

2009 – CURRENT

European Community on Flow, Turbulence and Combustion

Member

2009 – CURRENT

The International Centre for Sustainable Development of Energy, Water and Environment Systems

Member

MAJOR INTERNATIONAL COLLABORATIONS AND RESEARCH INTERESTS

Prof Xuebin Wang and Prof Houzhang Tan

Topic: *Experimental investigation of particulate and pollutant emissions from solid and alternative fuel combustion*, Institution: Xi'an Jiaotong University, Xi'an, PR China, Co-author of 29 publications

Prof Neven Duić

Topic: Computational Fluid Dynamics modelling of multiphase reactive flow and organization of SDEWES - Sustainable Development of Energy, Water and Environment Systems Conference series, Institution: University of Zagreb, Zagreb, Croatia, Co-author of 46 publications

Dr Peter Priesching, Dr Reinhard Tatschl, and Mr Eberhard von Berg

Topic: *Numerical investigation of multi-phase reacting flow*, Institution: AVL List GmbH, Graz, Austria, Co-author of 7 publications

Prof Jiří Jaromír Klemeš

Topic: *Integration of energy, water and environment systems*, Institution: Brno University of Technology, Brno, Czech Republic, Co-author of 5 publications

Prof Luka Perković

Topic: *Integration of variable renewable energy sources in the energysystem*, Institution: Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb, Croatia, Co-author of 3 publications

Dr Stanislav Boldyryev

Topic: *Waste heat utilisation in cement industry*, Institution: Saint Petersburg National Research University of Information Technologies, Mechanics and Optics, University ITMO, Saint Petersburg, Russian Federation, Co-author of 3 publications

Prof Raf Dewil

Topic: *Environmental management as a pillar for sustainable development*, Institution: KU Leuven, Leuven, Belgium, Co-author of 3 publications

Prof Ofélia Araújo

Topic: *Techno-economic analysis of thermochemical processes*, Institution: Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, Co-author of 1 publication

Dr Heriberto Cabezas

Topic: *Environmental assessment of manufacturing processes*, Institution: Sustainable Technology Division, National Risk Management Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, United States, Co-author of 1 publication

Prof Brian Vad Mathiesen

Institution: Aalborg University, Aalborg, Denmark, Topic: *Carbon capture and utilization technologies, electrofuels and green ammonia synthesis*.

Prof Mário Costa

Institution: Instituto Superior Técnico, Lisboa, Portugal, Topic: *Carbon capture and utilization technologies, electrofuels and green ammonia synthesis*.

Mr Markos Damasiotis

Topic: *Harnessing of ocean energy resources in a sustainable manner, cooperating on two Interreg MED projects*, Institution: Centre for Renewable Energy Sources and Saving, Athens, Greece.

● AREA OF EXPERTISE

Keywords

Solid fuel combustion
Computational fluid dynamics
Energy intensive industry
Biomass
Plastic
Cement production
Greenhouse gas emissions
Carbon capture and utilization
Green ammonia
Renewable energy sources
Energy storage
Offshore wind