

Personal data

Emil Drazevic
Bækvej 6, 8340 Malling
Email: edrazevic@bce.au.dk
ph: +45 93 50 83 45
Married, three children.



Education

2009-2014 PhD Chemical Engineering, University of Zagreb, Croatia. Thesis topic: Transport of non-ionized organics in reverse osmosis and nanofiltration membranes. Supervisor Prof. Kresimir Kosutic.

2001-2007 M.Sc. Chemical Engineering, University of Zagreb, Croatia. Thesis topic: Paraffins as phase change materials

Work experience

August 2022- present, Associate Professor (tenured), Course responsible Sensors & Process Control, teaching Analytical Chemistry and Energy Storage and Conversion Technology. I have my own research group P2Chem.

Sept. 2018 – July 2022, Assistant Professor (tenure track), Aarhus University, Department of Biological and Chemical Engineering.

Sept. 2017 – Aug. 2018, Postdoc (ORBATS project), Aarhus University, Department of Engineering, supervision of PhD students, synthesis, electrochemical characterization of materials, battery tests

Sept. 2015 – Aug. 2017, Marie Sklodowska-Curie Individual Fellow (postdoc), Aarhus University, Department of Engineering, synthesis and electrochemical characterization of materials, flow battery and dry-cell tests.

Apr. 2014 – Aug. 2015, Senior Researcher (equivalent of postdoc), University of Zagreb, Faculty of Chemical Engineering and Technology, Croatia, teaching and research on membranes for water purification

Jan. 2009 – Apr. 2014 PhD student/Teaching Assistant, University of Zagreb, Faculty of Chemical Engineering and Technology, research on membranes for water purification & Teaching Physical Chemistry lab

Periods of leave

01.10.2017 – 31.12.2017 – parental leave

19.04.2013 – 18.08.2013 – parental leave

Project management / leadership / grants

2024 PI, Nedbrydning og omsætning af forurende stoffer i en elektrolyzer i laboratoriestørrelse. **200.000 DKK**, Klimatorium

2024 co-PI (17-06-2024 til 31-10-2024) Design and test of DAC-FC electrodes, AU in collaboration with ShipTown A/S. **200.000 DKK**, Energy Cluster Denmark

2024-2026, participant, H2-FOAM High-performing asymmetrical electrodes with novel foam structure for efficient green hydrogen production, **10 mil DKK**, Innovation Fund Denmark

2023-2027 PI, AELECTRA project, EIC Pathfinder Challenges, **3.5 mil EUR**, electrical energy storage in liquid ammonia, new technology. (3 industrial partners)

2021 – 2025 co-PI in DFF FTP Project 2 (**6.2 mil DKK**, *Universal Organic Redox Active Materials for Stationary Batteries - UNIBAT*) – within the project, I am one of the supervisors of a PhD student on the synthesis and testing of redox polymers in Li, Na and Ni(OH)₂ batteries.

2021 – 2024 PI DFF FTP Project 1 (**2.86 mil DKK**, *A New Twist on Electrochemical Ammonia Synthesis*, <10% success rate) – within the project, one PhD student is hired who synthesizes NH₃ from N₂ and H₂. We are developing a non-aqueous electrolyte that binds and recycles the inevitable H₂ by-product and this way decreases energy consumption. We

are examining Fe and Li as electrocatalysts. We have obtained proof of concept for this approach, which diverges from the conventional concept.

2021 – 2024 PI EU/Japan project, Horizon 2020, REA (**23.7 mil DKK**, ORACLE, <10% success rate) - I coordinate the consortium. In close cooperation with the project's EU and Japanese partners, my team extends the boundaries of electrochemical ammonia reaction conditions: i) we use new catalysts (Mn, Ga and In) and ii) perform NRR in water-based HER-suppressing electrolyte. We synthesize ammonia from water and N₂.

2015 – 2017 PI, MSCA IF (**1.4 mil DKK**, *All Organic Redox Flow Batteries*, <14% success rate).

Selected publications

1. **Dražević, E.***, Skúlason, (2020). Are There Any Overlooked Catalysts for Electrochemical NH₃ Synthesis—New Insights from Analysis of Thermochemical Data, *iScience*, 23 (12), 101803.
2. Fenini, F.*, **Drazevic, E.**, Bonten, A., (2022). Impact of pH management on utilization and performance of anthraquinone/ ferrocyanide flow batteries, *Journal of Power Sources*, 540, 231641.
3. V Sinha, F Rezai, NE Sahin, J Catalano, ED Bøjesen, F. Sotodeh, **E Drazevic**, Electrochemical nitrogen reduction reaction over gallium—a computational and experimental study, *Faraday Discussions*, 2023
4. F Rezaie, S Læsaas, NE Sahin, J Catalano, **E Dražević**, Low-Temperature Electrochemical Ammonia Synthesis: Measurement Reliability and Comparison to Haber–Bosch in Terms of Energy Efficiency - *Energy Technology*, 2023
5. P. Pelosin, F. Longhin, NB Hansen, P Lamagni, **E. Drazevic**, P. Benito, K. Anastasakis, J. Catalano, High-temperature high-pressure electrochemical hydrogenation of biocrude oil, *Renewable Energy*, 2024