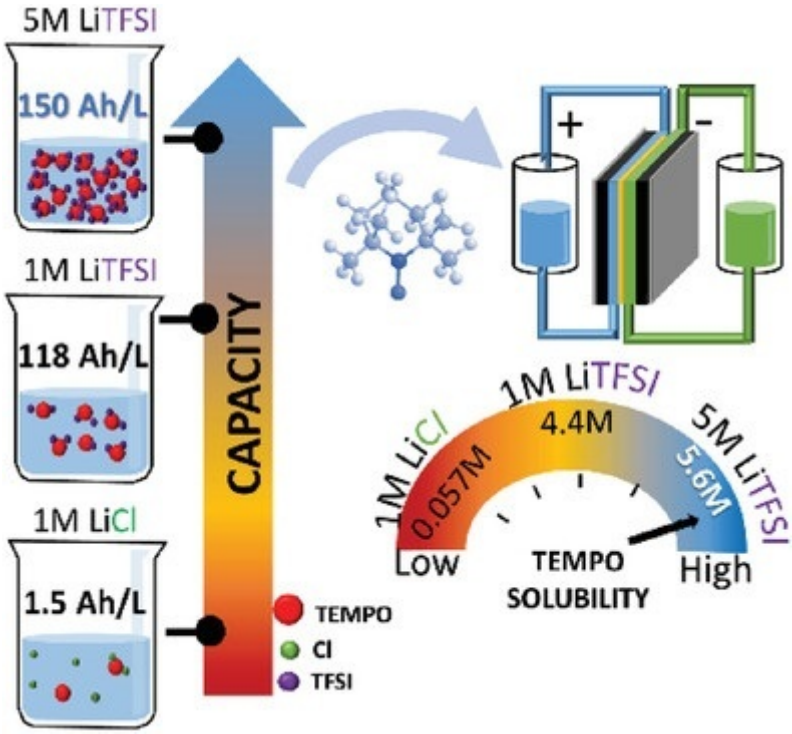
Newsletter issue 4

Welcome…

… to the 4th issue of the MeBattery newsletter. We have great news for you: two recent publications, a report about the 74th ISE conference including the abstracts of the MeBattery participants, and of course a new interview in our interview series. This time, you will meet Mario Palacios Corella. Last but not least, registration for our 2nd MeBattery workshop is now open! Find out more below and enjoy the read!

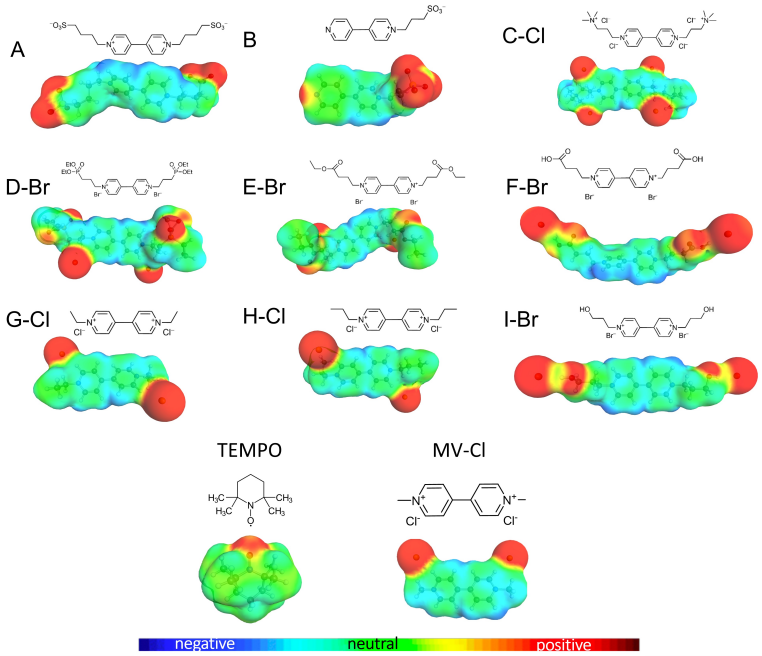


Publication: Unprecedented Aqueous Solubility of TEMPO and its Application as High Capacity Catholyte for Aqueous Organic Redox Flow Batteries

Eduardo Pedraza, Carlos de la Cruz, Andreas Mavrandonakis, Edgar Ventosa, Rubén Rubio-Presa, Roberto Sanz, Sirugaloor Thangavel Senthilkumar, Paula Navalpotro, Rebeca Marcilla

Despite the excellent electrochemical properties of non-functionalized 2,2,6,6-tetramethylpiperidine-1-oxyl (TEMPO), its use in aqueous organic redox flow battery (AORFB) is hindered to date due to its insolubility in water. However, in this study, an unprecedented solubility of 5.6 m is demonstrated in an aqueous solution of lithium bis(trifluoromethanesulfonyl)imide (LiTFSI), which is 80 times higher than in water (0.07 m). A computational study reveals that the unique interaction between TEMPO and TFSI is essential to achieve this record solubility.

The full publication is available here.

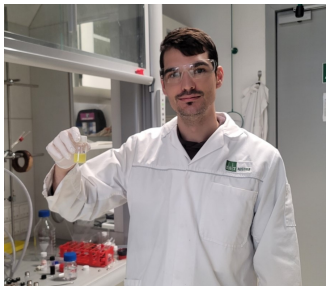


Publication: Computer-Aided Design of Membrane-Free Batteries Using Conductor-like Screening Model for Real Solvents

José Pedro Wojeicchowski, Catarina S. Neves, Paula Navalpotro, Rubén Rubio-Presa, Edgar Ventosa, Rebeca Marcilla, Joao A.P. Coutinho

Redox Flow Batteries (RFBs), particularly Membrane-Free Flow Batteries based on Aqueous Biphasic Systems (ABSs), are a promising technology for stationary energy storage. However, to prevent the crossover of species, the redox-active compounds used in the catholyte and anolyte must be selectively dissolved, which is currently achieved using expensive physical barriers. In this study, an approach was developed to predict the partition coefficient of redox-active compounds in ABSs formed by ionic liquids or polymers, salt, and water using the Conductor-like Screening Model for Real Solvents (COSMO-RS).

The full publication is available here.



Meet the MeBattery team: Mario Palacios Corella

We are happy to introduce you to Mario Palacios Corella. He works in Maria Ibanez' group at IST Austria where they are developing new functional micro- and nanomaterials that can be used as electroactive units in the battery. Find out how his research on battery materials is contributing to a better and healthier environment.

Read the full interview on the MeBattery website

MeBattery at 74th ISE Annual Meeting

The 74th Annual Meeting of the International Society of Electrochemistry took place on September 3-8, 2023 in Lyon, France. Among the 1.800 participants were representatives of MeBattery partners University of Burgos, IMDEA Energy and Ruhr University Bochum presenting their results in six talks and one poster.

Abstracts are available on our website.

2nd MeBattery Workshop Registration now open!

Our 2nd MeBattery Workshop will focus on technology transfer in the field of energy storage. Experts from industry and research institutions will cover different aspects needed for a successful technology transfer from lab to industry, right from the patenting process to commercialization of the final product, including battery components, full batteries and other ecodesigned power sources.

Participation is possible on location in Burgos, Spain, or online.

Register now for our workshop!

Announcements

European Researchers' Night at IMDEA Energy
29 September 2023
Móstoles, Spain
More information

244th ECS Meeting
8-12 October 2023
Gothenburg, Sweden
More information

ILMAT 2023
21-24 November 2023
Porto, Portugal
More information

We hope that you enjoyed this issue of our newsletter and we look forward to sharing our exciting journey with you.

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