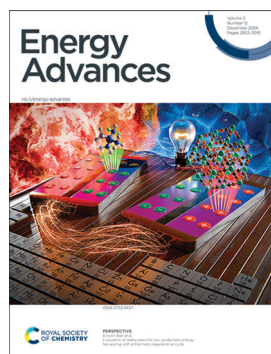# Energy Advances

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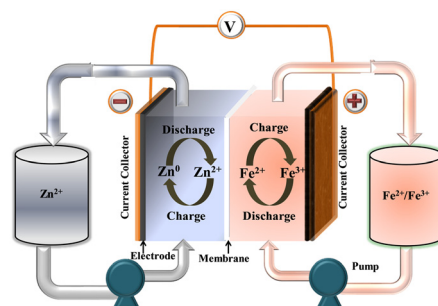
Cover
See Dowon Bae *et al.*,
pp. 2877–2886.
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REVIEW

PERSPECTIVES

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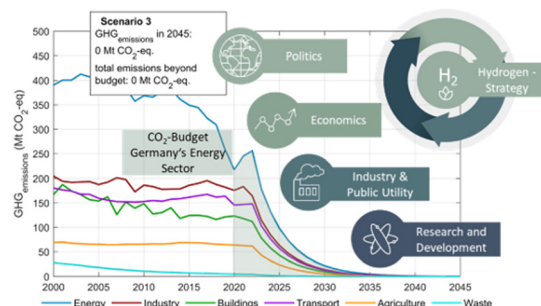
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**Fundamental questions
Elemental answers**

PERSPECTIVES

2887

Powering the future: Germany's Wasserstoffstrategie in the transition to climate neutrality – case study on green hydrogen for the chemical industry

Valentin Benedikt Seithümmer,* Julia Valentina Lutz, Samuel Jaro Kaufmann, Haripriya Chinnaraj, Paul Rößner* and Kai Peter Birke
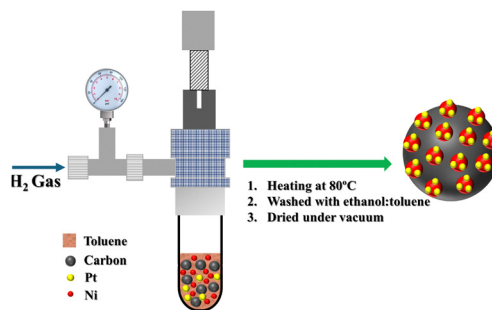
COMMUNICATIONS

2896

Organometallic synthesis of a high-density Pt single atom catalyst on nickel for the alkaline hydrogen evolution reaction
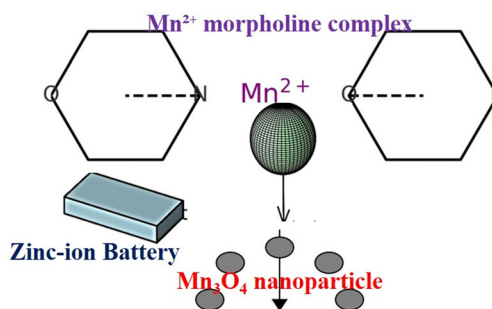
Vineesh Thazhe Veettil, Manoj Shanmugasundaram and David Zitoun*

2903

Room-temperature, one-step synthesis of Mn_3O_4 nanoparticles using morpholine as a complexing and precipitating agent: toward a cathode material for zinc-ion batteries
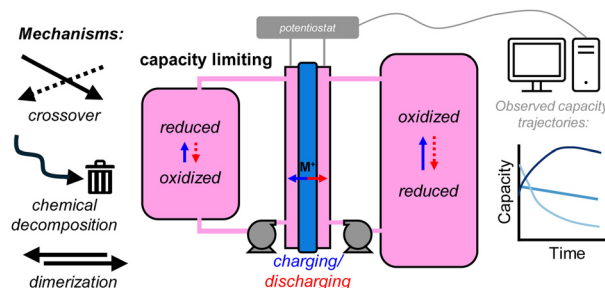
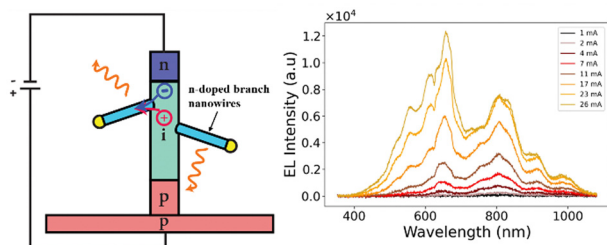Saad G. Mohamed,* Jixu Wan and Xuejin Li*

PAPERS

2910

Influence of crossover on capacity fade of symmetric redox flow cells

Thomas Y. George, Eric M. Fell, Kyumin Lee, Michael S. Emanuel and Michael J. Aziz*
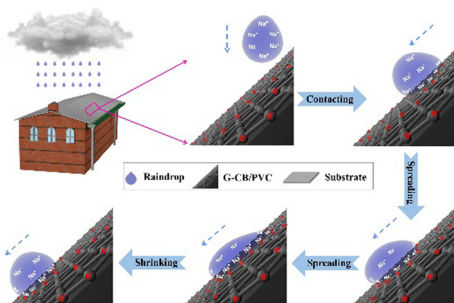
PAPERS

2922

Characterization of n-doped branches in nanotree LEDs

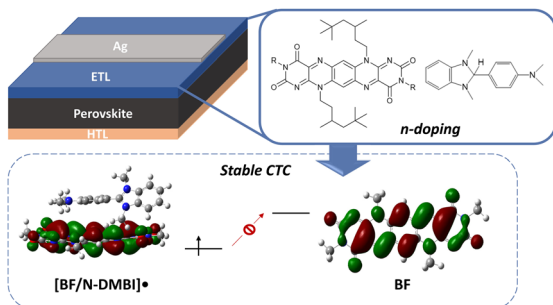Kristi Adham, Yue Zhao, Pyry Kivisaari and Magnus T. Borgström*

2929

Self-powered graphene-based composites for rain energy harvesting

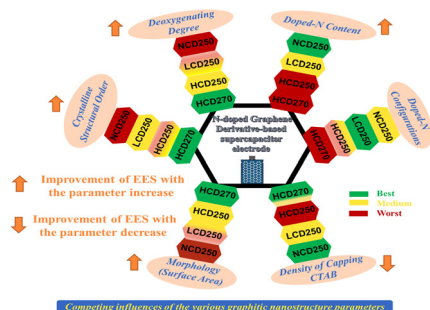Yi Zheng, Hongyu Zheng, Yuanchong Yue, Liying Lu, Yingli Wang* and Qunwei Tang

2939

n-Doping of bio-inspired electron transporting materials: the influence of charge-transfer complexation

Wai Kin Yiu, Dylan Wilkinson, Michele Cariello, Marcin Giza, Namrata Pant, Nabeel Mohammed, Benjamin Vella, Stephen Sproules, Graeme Cooke* and Pablo Docampo*

2947

Evaluation of the electrochemical energy storage performance of symmetric supercapacitor devices based on eco-friendly synthesized nitrogen-doped graphene-like derivative electrodes from the perspective of their nanostructural characteristics

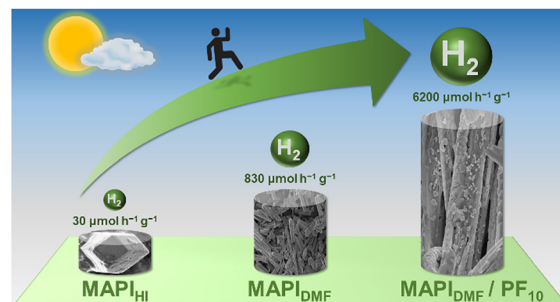Marwa A. A. Mohamed,* Marwa Adel and Jehan El Nady

PAPERS

2965

Solvent assisted shape dependent MAPbI$_3$/polyfluorene heterostructures with a larger surface area for improved photocatalytic H$_2$ evolution
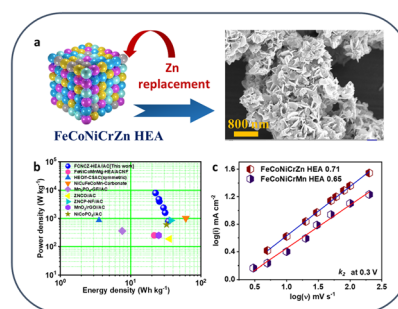
Tamal Pal, Soumalya Bhowmik, Arvin Sain Tanwar, Ameer Suhail, Nageswara Rao Peela, Chivukula V. Sastri* and Parameswar Krishnan Iyer*

2972

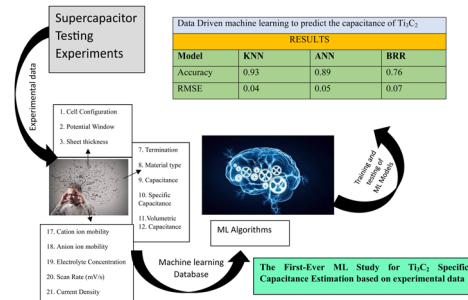**Effect of Zn/Mn on the supercapacitor behavior of high-entropy FeCoNiCrZn/Mn alloy**

Gobinda Chandra Mohanty, Chinmayee Chowde Gowda, Pooja Gakhad, M. Sanjay, Abhishek Singh,* Koushik Biswas* and Chandra Sekhar Tiwary*

2986

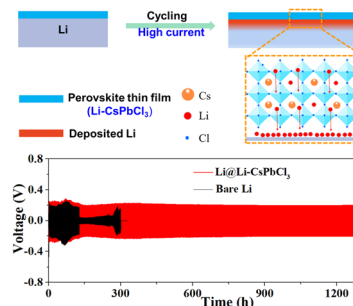**Unlocking the potential of Ti$_3$C$_2$ electrodes: a data-driven capacitance prediction study**

Sanjith Krishna and Afkham Mir*

2999

An ultrathin Li-doped perovskite SEI film with high Li ion flux for a fast charging lithium metal battery

Ruliang Liu,* Wenli Feng, Liangzhou Fang, Huiping Deng, Ling Lin, MinChang Chen, Jun-Xing Zhong* and Wei Yin

CORRECTION

3007

Correction: Steady states and kinetic modelling of the acid-catalysed ethanolysis of glucose, cellulose, and corn cob to ethyl levulinate

Conall McNamara,* Ailís O'Shea, Prajwal Rao, Andrew Ure, Leandro Ayarde-Henríquez, Mohammad Reza Ghaani, Andrew Ross and Stephen Dooley