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Energy Advances

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See Dibakar Datta *et al.*, pp. 968–982. Image reproduced by permission of Dibakar Datta from *Energy Adv.*, 2024, **3**, 968.

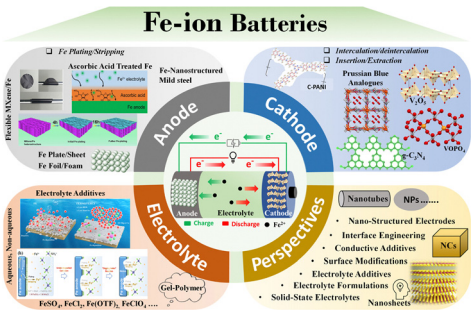
Inside cover
See Ejaz Hussain *et al.*, pp. 983–996. Image reproduced by permission of Ejaz Hussain from *Energy Adv.*, 2024, **3**, 983.

REVIEW

927

Rechargeable iron-ion (Fe-ion) batteries: recent progress, challenges, and perspectives

Jitendra Kumar Yadav, Bharti Rani, Priyanka Saini and Ambesh Dixit*



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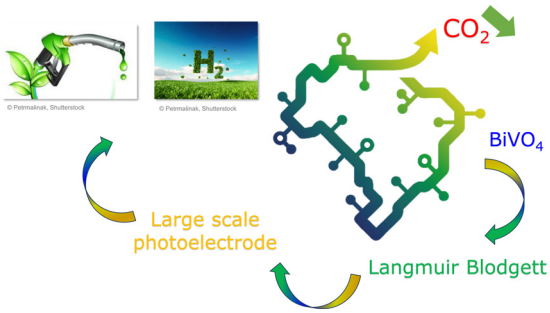
Biofuels and hydrogen production: back to the Langmuir–Blodgett approach for large-scale structuration of Bi-based photoelectrodes

Claire Dazon,* Márcio César Pereira and Douglas Santos Monteiro



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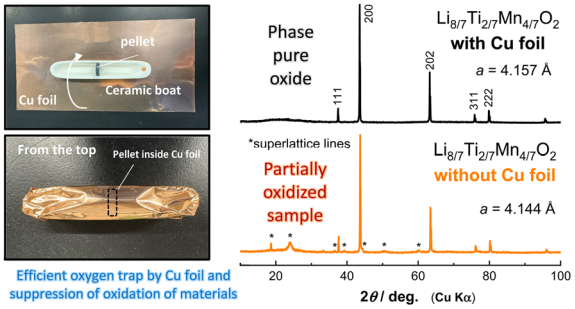
COMMUNICATION

962

A methodology to synthesize easily oxidized materials containing Li ions in an inert atmosphere

Itsuki Konuma, Yosuke Ugata and Naoaki Yabuuchi*



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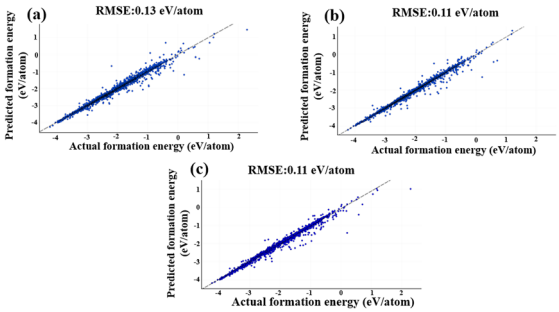
Unlocking the potential of open-tunnel oxides: DFT-guided design and machine learning-enhanced discovery for next-generation industry-scale battery technologies

Joy Datta, Nikhil Koratkar and Dibakar Datta*



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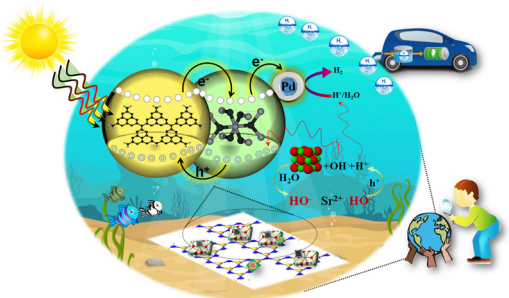
Promoting water-splitting reaction on TiO_2/gCN with Pd/SrO cocatalysts: H_2 evolution in the absence of a sacrificial reagent

Khezina Rafiq, Kashaf Ul Sahar, Muhammad Zeeshan Abid, Saira Attique, Ubaid ur Rehman, Abdul Rauf and Ejaz Hussain*



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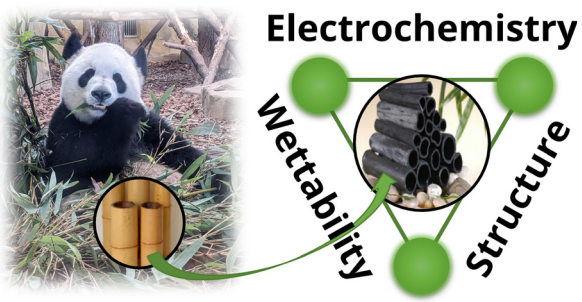
Bamboo charcoal as electrode material for vanadium redox flow batteries

Monja Schilling, Alexey Ershov, Rafaela Debastiani, Kangjun Duan, Kerstin Köble, Simon Scherer, Linghan Lan, Alexander Rampf, Tomáš Faragó, Marcus Zuber, Angelica Cecilia, Shaojun Liu, Cheng Liu, Tilo Baumbach, Jun Li, Pang-Chieh Sui and Roswitha Zeis*



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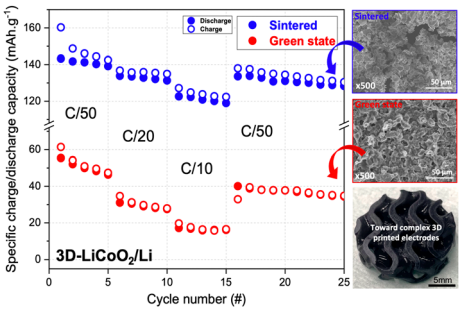

Additive manufacturing of $LiCoO_2$ electrodes *via* vat photopolymerization for lithium ion batteries

Ana C. Martinez,* Ana P. Aranzola, Eva Schiaffino, Eric MacDonald* and Alexis Maurel*

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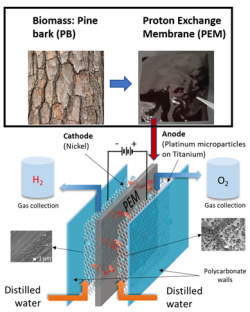

Fabrication of novel mixed matrix polymer electrolyte membranes (PEMs) intended for renewable hydrogen production *via* electrolysis application

Relebohile Mokete,* František Mikšík, Roman Selyanchyn, Nobuo Takata, Kyaw Thu and Takahiko Miyazaki

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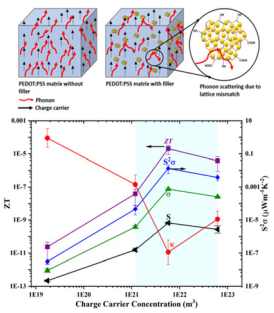

Optimization of thermoelectric parameters for quantum dot-assisted polymer nanocomposite

Shivani Shisodia,* Abdelhak Hadj Sahraoui, Benoit Duponchel, Dharmendra Pratap Singh and Michael Depriester

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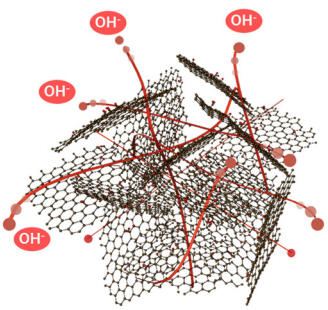

Enhanced OH^- conductivity from 3D alkaline graphene oxide electrolytes for anion exchange membrane fuel cells

Nonoka Goto, Mohammad Atiqur Rahman, Md. Saidul Islam, Ryuta Tagawa, Chiyu Nakano, Muhammad Sohail Ahmed, Yoshihiro Sekine, Yuta Nishina, Shintaro Ida and Shinya Hayami*

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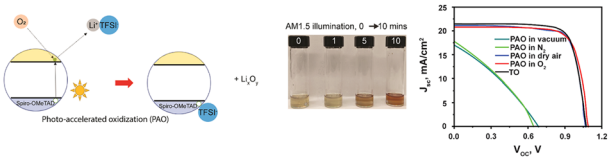
Photo-accelerated oxidation of spiro-OMeTAD for efficient carbon-based perovskite solar cells

S. N. Vijayaraghavan, Kausar Khawaja, Jacob Wall, Wenjun Xiang and Feng Yan*



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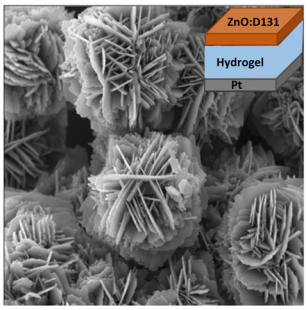
Exploring zinc oxide morphologies for aqueous solar cells by a photoelectrochemical, computational, and multivariate approach

Elisa Maruccia, Simone Galliano, Eduardo Schiavo, Nadia Garino, Ana Y. Segura Zarate, Ana B. Muñoz-García, Michele Pavone, Claudio Gerbaldi, Claudia Barolo, Valentina Cauda and Federico Bella*



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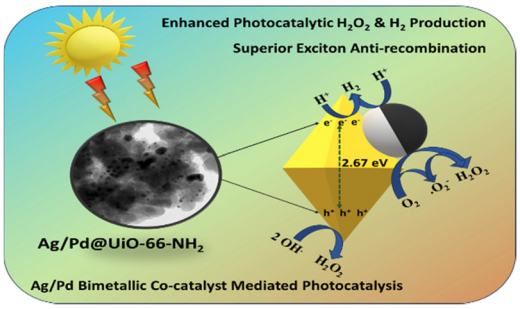
Ag/Pd bimetallic nanoparticle-loaded Zr-MOF: an efficacious visible-light-responsive photocatalyst for H_2O_2 and H_2 production

Srabani Dash, Suraj Prakash Tripathy, Satyabrata Subudhi, Lopamudra Acharya, Asheli Ray, Pragyandeepti Behera and Kulamani Parida*



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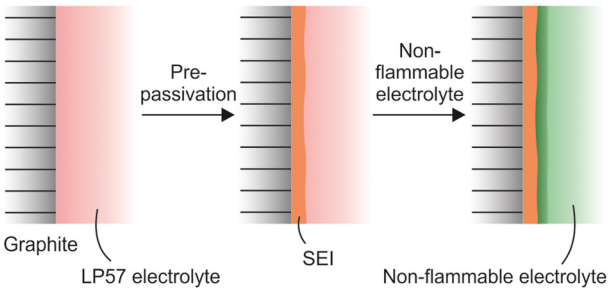
Enabling a non-flammable methyl(2,2,2-trifluoroethyl) carbonate electrolyte in NMC622–graphite Li-ion cells by electrode pre-passivation

Matilde Longhini, Florian Gebert, Fosca Conti* and Andrew J. Naylor*



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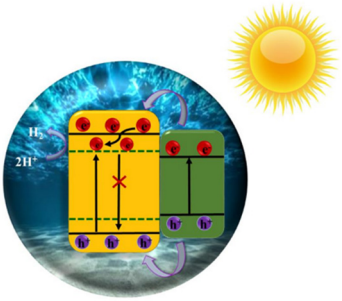

Efficient and sustainable hydrogen evolution reaction: enhanced photoelectrochemical performance of ReO_3-incorporated Cu_2Te catalysts

Aruna Vijayan and N. Sandhyarani*

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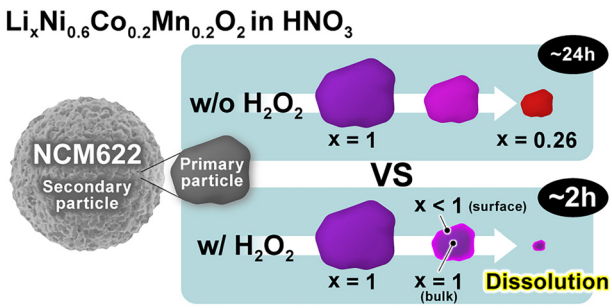

Mechanisms underlying the acid leaching process for $LiNi_{0.6}Co_{0.2}Mn_{0.2}O_2$ with and without H_2O_2

Kazuhiko Mukai,* Yasuhiro Takatani and Takamasa Nonaka

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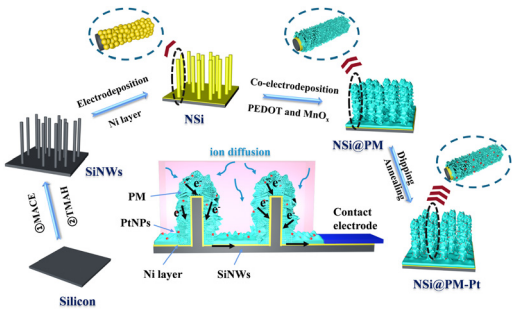

Passivation of silicon nanowires with Ni particles and a PEDOT/MnO_X composite for high-performance aqueous supercapacitors

Pengwei Liu, Shouyan Sun, Tongfei Wang, Xiaojuan Shen* and Maiyong Zhu*

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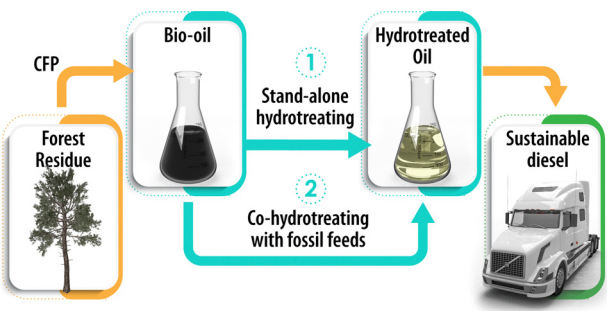

Diesel production *via* standalone and co-hydrotreating of catalytic fast pyrolysis oil

Xiaolin Chen, Kellene A. Orton, Calvin Mukarakate, Luke Tuxworth, Michael B. Griffin and Kristiina Iisa*

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