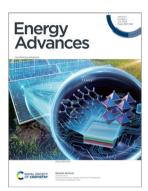
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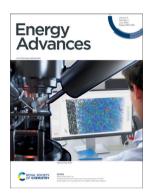
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ISSN 2753-1457 CODEN EANDBJ 2(7) 889-1066 (2023)



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See Yuzhi Xu et al., pp. 896-921. Image reproduced by permission of Cheng-Wei Ju from Energy Adv., 2023, 2, 896.



#### Inside cover

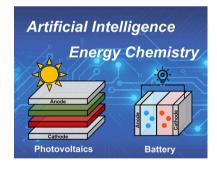
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#### **REVIEWS**

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Machine learning in energy chemistry: introduction, challenges and perspectives

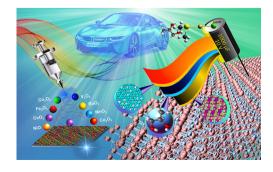
Yuzhi Xu, Jiankai Ge\* and Cheng-Wei Ju\*



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Recent advances in electrospun fibers based on transition metal oxides for supercapacitor applications: a review

Abhilash Pullanchiyodan, Roshny Joy, Pranav Sreeram, Leya Rose Raphael, Akhila Das, Neethu T. M. Balakrishnan, Jou-Hyon Ahn, Alexandru Vlad, Sivaramapanicker Sreejith\* and Prasanth Raghavan\*



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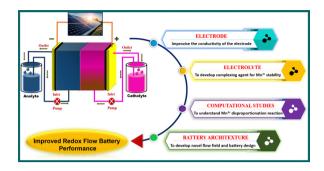
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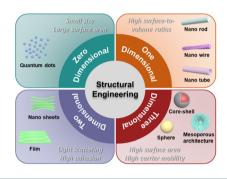
Energy storage mechanism, advancement, challenges, and perspectives on vivid manganese redox couples

R. Naresh, Vilas G. Pol\* and P. Ragupathy\*



Nanostructured TiO<sub>2</sub> for improving the solar-to-hydrogen conversion efficiency

Cong Wang and Mohamed Nawfal Ghazzal\*



#### **PAPERS**

Standardized microstructure characterization of SOC electrodes as a key element for Digital Materials Design

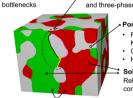
Philip Marmet,\* Lorenz Holzer, Thomas Hocker, Gernot K. Boiger, Holger Bausinger, Andreas Mai, Mathias Fingerle, Sarah Reeb, Dominik Michel and Joseph M. Brader

### SOC microstructure characterization

Morphological analysis for all three phases Contiguous and original volume fractions

mean radii of bulges and bottlenecks

- Constrictivity
  Tortuosity analysis
- Covariance function
- Predicted M-factor



Interface properties Volume specific interface area and three-phase boundary length

- Pore-phase properties
- Knudsen)
- Characteristic pore diameter Hydraulic radius, permeability

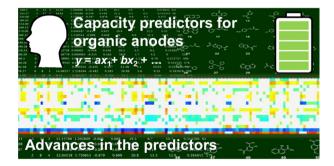
Solid single-phase properties Relative single-phase conductivities

Solid-phase composite properties Relative ionic and electronic composite conductivities

### 1014

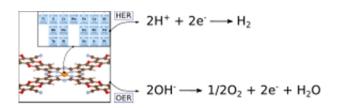
Capacity-prediction models for organic anode-active materials of lithium-ion batteries: advances in predictors using small data

Haruka Tobita, Yuki Namiuchi, Takumi Komura, Hiroaki Imai, Koki Obinata, Masato Okada, Yasuhiko Igarashi\* and Yuya Oaki\*



#### **PAPERS**

1022



Hydrogen and oxygen evolution reactions on single atom catalysts stabilized by a covalent organic framework

Ilaria Barlocco, Giovanni Di Liberto\* and Gianfranco Pacchioni

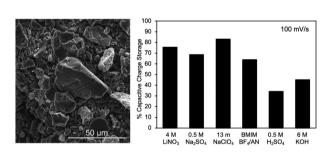
1030



A chlorinated polythiophene-based polymer as a dopant-free hole transport material in perovskite solar cells

Kakaraparthi Kranthiraja, Ryosuke Nishikubo and Akinori Saeki\*

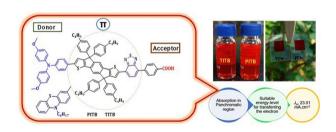
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Ultra-low cost supercapacitors from coal char: effect of electrolyte on double layer capacitance

Zahra Karimi, Jaron Moon, Joshua Malzahn, Eric Eddings and Roseanne Warren\*

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 $D-\pi-A$  organic dyes derived from the indacenodithiophene core moiety for efficient dye-sensitized solar cells

Afzal Siddiqui, Nanaji Islavath, T. Swetha and Surya Prakash Singh\*

# **PAPERS**

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Photocatalytic activity and pH-induced morphological changes of ZnO/CuO nanocomposites prepared by chemical bath precipitation

Nargol Jalali, Amirhossein Rakhsha, Mohammad Nami, Fereshteh Rashchi\* and Valmor Roberto Mastelaro

