

Energy Advances

rsc.li/energy-advances

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 2753-1457 CODEN EANDBJ 3(7) 1461–1756 (2024)



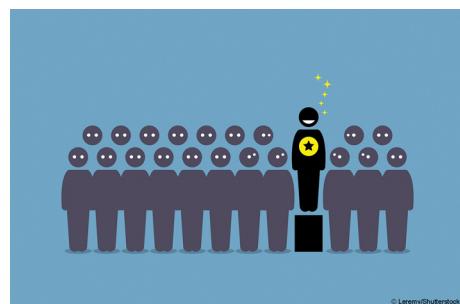
Cover

© Olemedia/Getty Images

EDITORIAL

1471

Outstanding Reviewers for *Energy Advances* in 2023



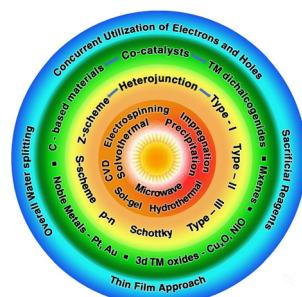
© JeremyShutterstock

REVIEWS

1472

A review on the recent advances in the design and structure–activity relationship of TiO_2 -based photocatalysts for solar hydrogen production

Sunesh S. Mani, Sivaraj Rajendran, Thomas Mathew* and Chinnakonda S. Gopinath*





GOLD
OPEN
ACCESS

RSC Sustainability

Dedicated to sustainable
chemistry and new solutions

For an open, green and inclusive future



rsc.li/RSCSus

Fundamental questions
Elemental answers

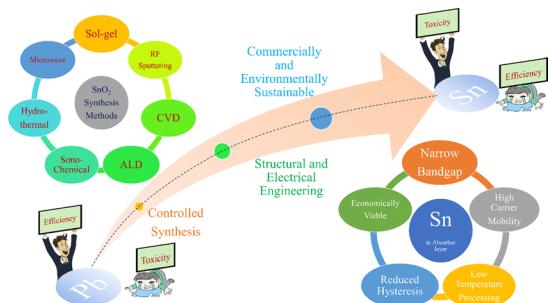
Registered charity number: 207890

REVIEWS

1505

Dynamic synergy of tin in the electron-transfer layer and absorber layer for advancing perovskite solar cells: a comprehensive review

Azaharuddin Saleem Shaikh, Subhash Chand Yadav, Abhishek Srivastava, Archana R. Kanwade, Manish Kumar Tiwari, Shraddha Manohar Rajore, Jena Akash Kumar Satrughna, Mahesh Dhonde and Parasharam M. Shirage*

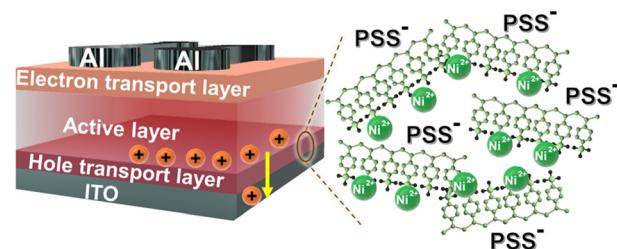


PAPERS

1553

Nickel polyelectrolytes as hole transporting materials for organic and perovskite solar cell applications

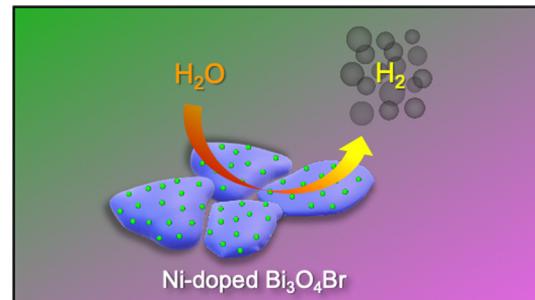
Jin Hee Lee, Kausar Ali Khawaja, Faiza Shoukat, Yeasin Khan, Do Hui Kim, Shinuk Cho,* Bright Walker* and Jung Hwa Seo*



1562

Strategic Ni-doping improved electrocatalytic H₂ production by Bi₃O₄Br in alkaline water

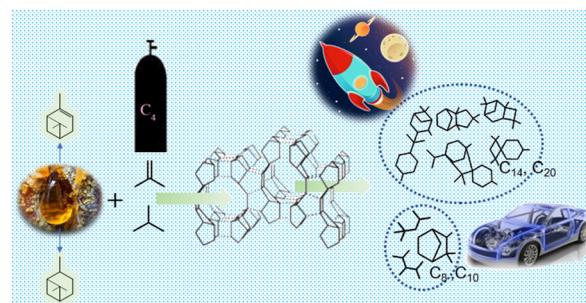
Manodip Pal, Rathindranath Biswas, Sanmitra Barman* and Arnab Dutta*



1571

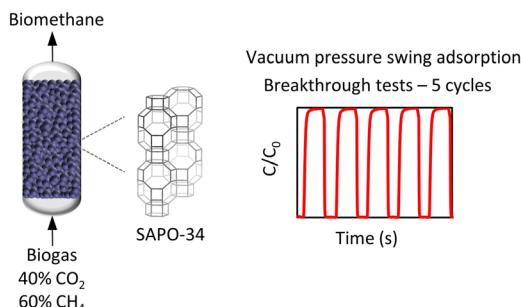
Alkylation of α -pinene with isobutene/isobutane over H β zeolite

Zhaocai Jiao, Mingzu Liu, Ningbo Yang, Fengli Yu, Congxia Xie, Shitao Yu and Bing Yuan*



PAPERS

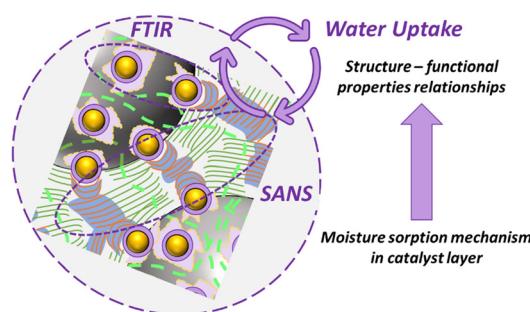
1581



Evaluation of binderless LTA and SAPO-34 beads as CO₂ adsorbents for biogas upgrading in a vacuum pressure swing adsorption setup

Dina G. Boer, Henk H. van de Bovenkamp, Jort Langerak, Benny Bakker and Paolo P. Pescarmona*^a

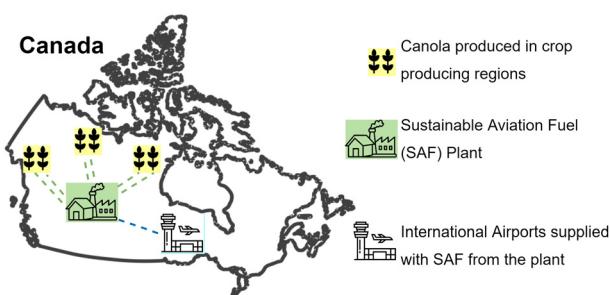
1594



In situ investigation of moisture sorption mechanism in fuel cell catalyst layers

Emilie Planes,* Joseph Peet, Jean-Blaise Brubach, Lionel Porcar, Gilles De Moor, Cristina Iojoiu* and Sandrine Lyonnard*

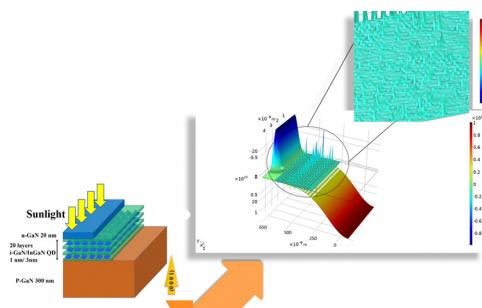
1612



A framework to estimate national biofuel potential by siting production facilities: a case study for canola sustainable aviation fuel in Canada

Praveen Siluvai Antony,* Caroline Vanderghem, Heather L. MacLean, Bradley A. Saville and I. Daniel Posen

1632



Structural optimization and engineering of In_xGa_{1-x}N quantum dot intermediate band solar cells with intrinsic GaN interlayers

Deborah Eric,* Jianliang Jiang,* Ali Imran and Abbas Ahmad Khan

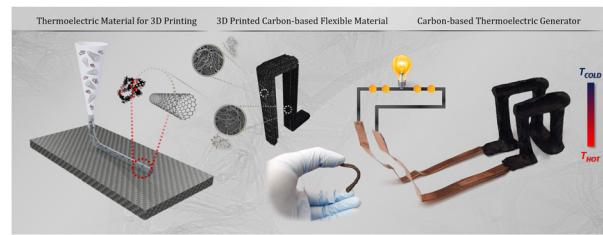


PAPERS

1642

Additive manufacturing of highly conductive carbon nanotube architectures towards carbon-based flexible thermoelectric generators

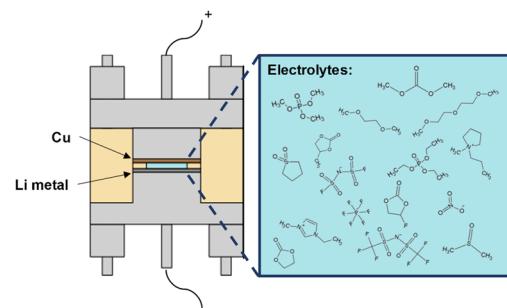
Christos K. Mytafides,* William J. Wright, Raden Gustinvil, Lazaros Tzounis, George Karalis, Alkiviadis S. Paipetis and Emrah Celik*



1653

Intrinsic effects of electrolytes on lithium metal deposition and dissolution investigated through a separator-free cell

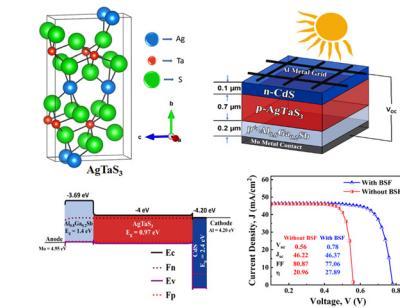
Tomoki Takahashi, Di Wang, Jinkwang Hwang* and Kazuhiko Matsumoto*



1662

Design and performance evaluation of all-inorganic AgTaS_3 perovskite solar cells

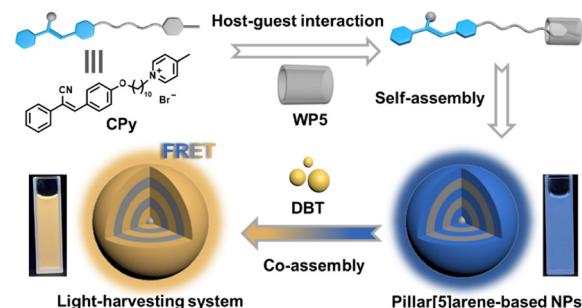
Tanvir Ahmed, Md. Choyon Islam, Md. Alamin Hossain Pappu, Md. Islahur Rahman Ebon, Sheikh Noman Shiddique, Mainul Hossain and Jaker Hossain*



1672

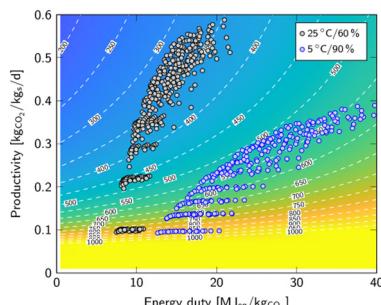
Construction of a supramolecular light-harvesting system based on pillar[5]arene-mediated nanoparticles in water

Xiuxiu Li, Qiaona Zhang, Xiaoman Dang, Fengyao Cui, Zheng-Yi Li, Xiao-Qiang Sun and Tangxin Xiao*



PAPERS

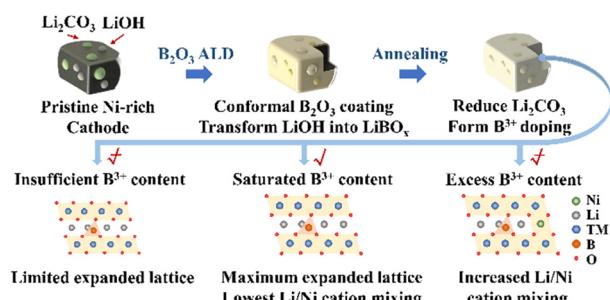
1678



Optimizing direct air capture under varying weather conditions

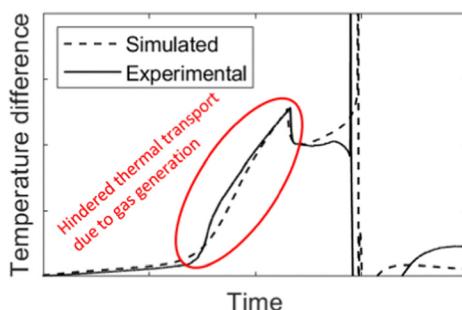
H. M. Schellevis, J. D. de la Combé and D. W. F. Brilman*

1688

Stabilization of the surface and lattice structure for $\text{LiNi}_{0.83}\text{Co}_{0.12}\text{Mn}_{0.05}\text{O}_2$ via B_2O_3 atomic layer deposition and post-annealing

Jiawei Li, Junren Xiang, Ge Yi, Zhijia Hu, Xiao Liu* and Rong Chen*

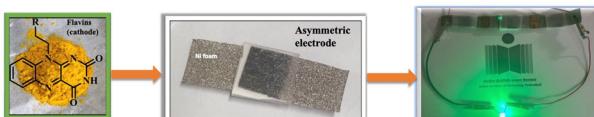
1697



On the effect of gas generation on heat transfer during thermal runaway of pouch cells

Niklas Weber,* Sebastian Schuhmann, Robert Löwe, Jens Tübke and Hermann Nirschl

1710



Bioinspired flavin analogues as organic electrode materials for supercapacitor applications

Dipayan Mondal, Ishita Naskar, Melepurath Deepa* and Ashutosh Kumar Mishra*

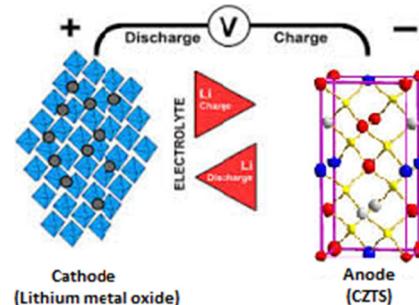


PAPERS

1717

Dual-functionality of CZTS nanoflakes: as an anode material for lithium-ion batteries and as a counter electrode in DSSCs – a DFT and experimental investigation

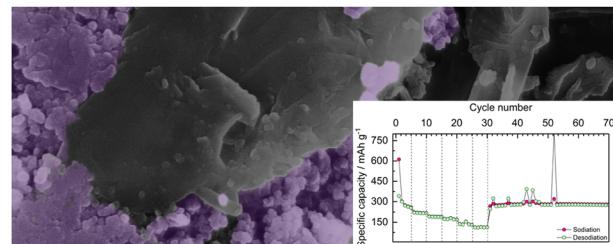
G. Rajesh,* Jeyakiruba Palraj, Venkatraman M. R., Ramesh Sivasamy, Sreejith P. Madhusudanan, Helen Annal Therese and Marcos Flores



1726

Electrochemical characterization of γ -Fe₂O₃ and a reduced graphene oxide composite as a sustainable anode material for Na-ion batteries

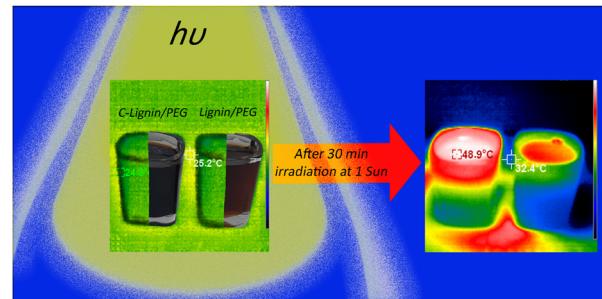
Antunes Staffolani,* Leonardo Sbrascini, Luca Bottoni, Luca Minnetti, Hamideh Darjazi, Angela Trapananti, Francesco Paparoni, Seyed Javad Rezvani, Marco Minicucci, Messaoud Harfouche and Francesco Nobili



1737

Photo-thermal conversion ability of PEG and H₂O-based microfluids of sodium lignosulfonate and its carbonized form

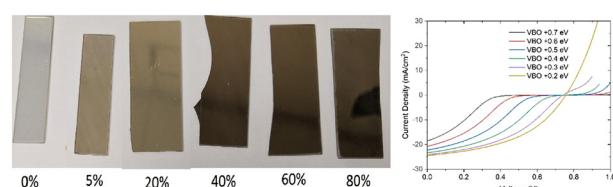
Fatemeh Seifkar, Saeid Azizian* and Babak Jaleh



1746

The effect of oxygen on NiO as a back buffer layer in CdTe solar cells

Nicholas Hunwick,* Xiaolei Liu, Mustafa Togay, John M. Walls, Jake Bowers and Patrick J. M. Isherwood



CORRECTION

1754

Correction: Recent trends on the application of phytochemical-based compounds as additives in the fabrication of perovskite solar cells

Naomy Chepnetich, Gloria M. Mumbi, Getnet Meheretu M., Koech K. Richard,* Geoffrey K. Yegon, Sarah C. Chepkwony, Charles Rono K., Dahiru Sanni, Abdulhakeem Bello and Esidor Ntsoenzok

