

Materials Advances

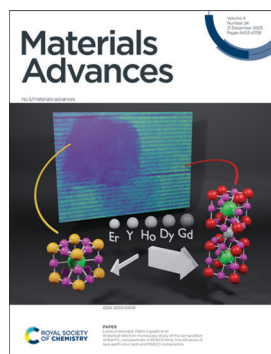
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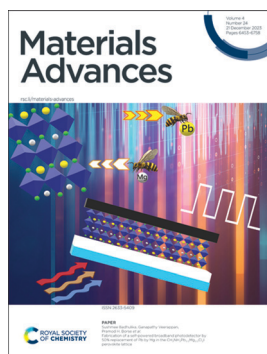
IN THIS ISSUE

ISSN 2633-5409 CODEN MAADC9 4(24) 6453-6758 (2023)



Cover

See Lukas Grünewald, Pablo Cayado *et al.*, pp. 6507–6521. Image reproduced by permission of Lukas Grünewald from *Mater. Adv.*, 2023, 4, 6507.



Inside cover

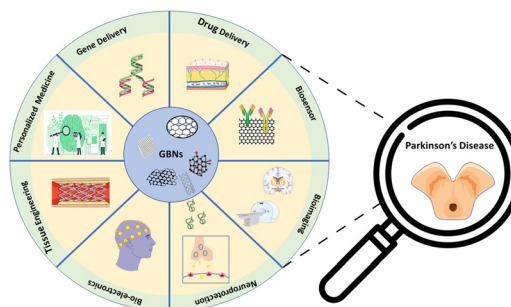
See Sushmee Badhulika, Ganapathy Veerappan, Pramod H. Borse *et al.*, pp. 6522–6534. Image reproduced by permission of Pramod H. Borse from *Mater. Adv.*, 2023, 4, 6522.

REVIEWS

6464

Advances in graphene-based nanoplatforms and their application in Parkinson's disease

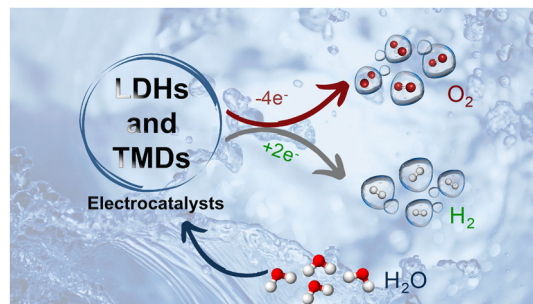
Tuba Oz, Ajeet Kumar Kaushik and Małgorzata Kujawska*



6478

2D layered double hydroxides and transition metal dichalcogenides for applications in the electrochemical production of renewable hydrogen

Daniele Alves, P. Rupa Kasturi, Gillian Collins, Tara N Barwa, Sukanya Ramaraj, Raj Karthik and Carmel B. Breslin*



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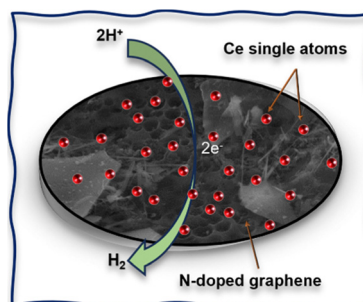


COMMUNICATION

6498

Promising Ce single-atom-dispersed nitrogen-doped graphene catalysts for the hydrogen evolution reaction

Sunny Yadav, Vandung Dao, Wenmeng Wang, Kai Chen, Chiyeop Kim, Gyu-Cheol Kim and In-Hwan Lee*

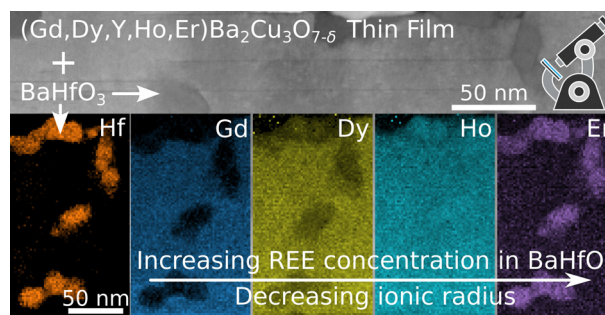


PAPERS

6507

Analytical electron microscopy study of the composition of BaHfO₃ nanoparticles in REBCO films: the influence of rare-earth ionic radii and REBCO composition

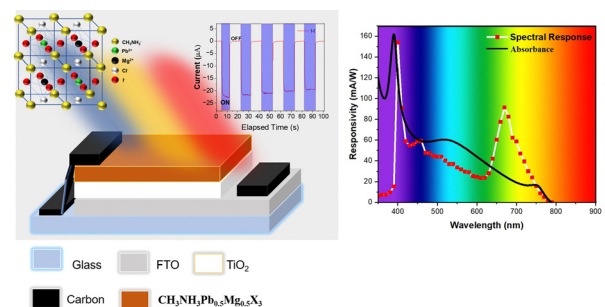
Lukas Grünewald, Pablo Cayado,* Manuela Erbe, Jens Hänisch,* Bernhard Holzapfel and Dagmar Gerthsen



6522

Fabrication of a self-powered broadband photodetector by 50% replacement of Pb by Mg in the CH₃NH₃Pb_{0.5}Mg_{0.5}Cl₂ perovskite lattice

Kumaar Swamy Reddy B., Smrutiranjana Panda, Easwaramoorthi Ramasamy, Sushmee Badhulika,* Ganapathy Veerappan* and Pramod H. Borse*

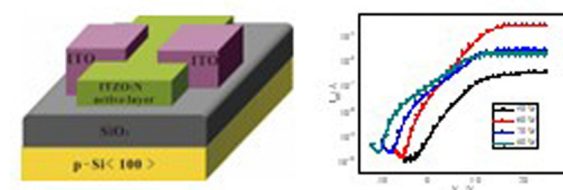


6535

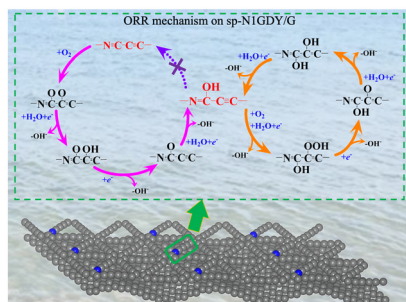
Amorphous N-doped InSnZnO thin films deposited by RF sputtering for thin-film transistor application

Zhi-Yue Li, Shu-Mei Song, Wanxia Wang,* Ming-Jiang Dai, Song-Sheng Lin, Ting-Yong Chen and Hui Sun*

- ◆ The influence of RF sputtering power on TFT's performance was studied
- ◆ ITZO:N film prepared with suitable sputtering power enhance the performance of TFT



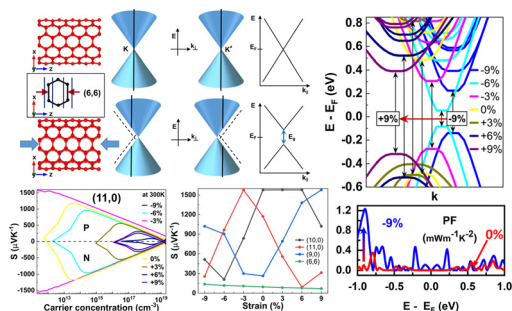
6542



DFT investigation of the oxygen reduction reaction over nitrogen (N) doped graphdiyne as an electrocatalyst: the importance of pre-adsorbed OH* and the solvation effect

Yuelin Wang, Thanh Ngoc Pham, Harry H. Halim, Likai Yan and Yoshitada Morikawa*

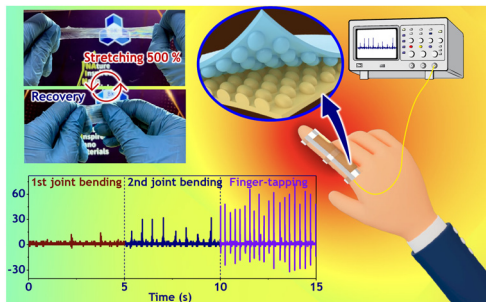
6553



Ab initio study of uniaxial strain-induced thermoelectric property tuning of individual single-wall carbon nanotubes

Md. Mafizul Islam and Ahmed Zubair*

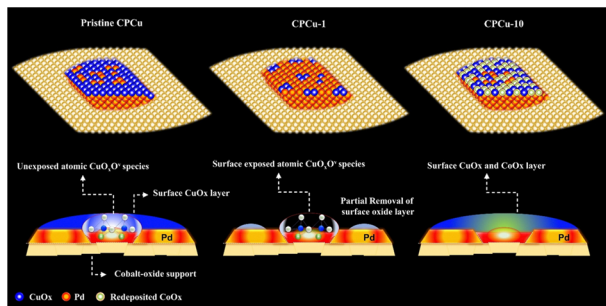
6568



Ultra-stretchable and shape-memorable ability of an output-boosted triboelectric nanogenerator utilizing highly ordered microdome-crowning thermoplastic polyurethane for a finger-motion detection sensor

Ngoc Mai Chau, Phuong Mai Tran, Thu Ha Le, Thi Thai Ha La* and Van-Tien Bui*

6578



Facile surface restructure by one-step sub-millisecond laser exposure promotes the CO₂ methanation performance of cobalt oxide supported Pd nanoparticles with copper-oxide cluster decoration

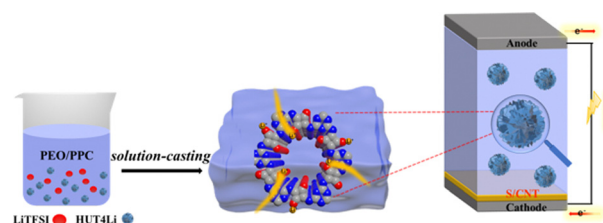
Dinesh Bhalothia, Amisha Beniwal, Praveen Kumar Saravanan, Guo-Heng Huang, Mingxing Cheng, Ming-Wei Lin, Po-Chun Chen* and Tsan-Yao Chen*



6589

Zwitterionic metal covalent organic frameworks constructed from lithium salts to reinforce poly(ethylene oxide)/poly(propylene carbonate) composite polymer electrolytes

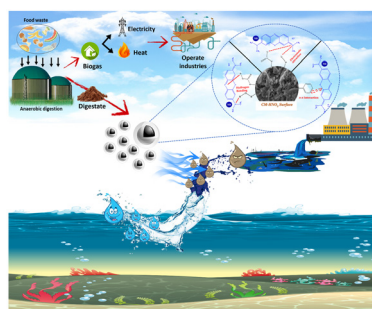
Hui Liu,* Li Jing, Juanjuan Liu, Hongxing Guo, Tao Li and Xiaojie Zhang*



6599

Harnessing a carbon-based material from food waste digestate for dye adsorption: the role of hydrogel beads in enhancing the material stability and regenerative capacity

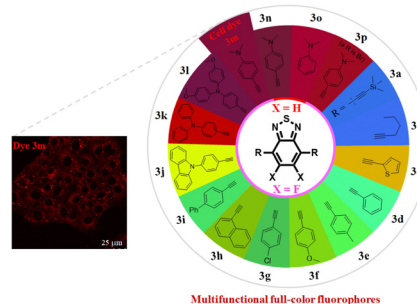
Salaheddine Farsad,* Asma Amjlef, Ayoub Chaoui, Aboubakr Ben Hamou, Chaima Hamma, Mohamed Benafqir, Amane Jada and Noureddine El Alem*



6612

Full-color emission of fluorinated benzothiadiazole-based D-A-D fluorophores and their bioimaging applications

Si-Hong Chen, Xi-Ying Cao, Peng-Tao Hu, Kai Jiang,* Yong-Tong Liang, Bing-Jia Xu, Zhong-Hao Li and Zhao-Yang Wang*

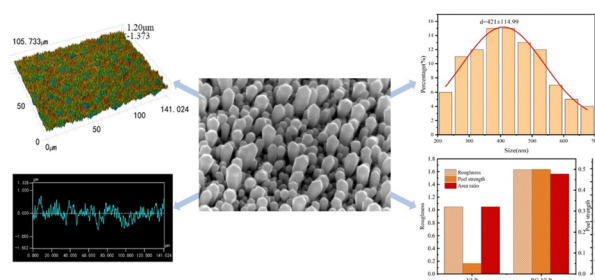


Multifunctional full-color fluorophores

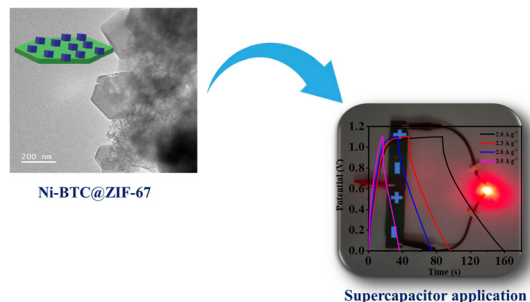
6621

Preparation of an ultra-low profile and high peel strength copper foil with rice-grain microstructures

Lijuan Wang, Xiaowei Fa, Yunzhi Tang,* Juan Liao, Yuhui Tan,* Ning Song, Jian Huang, Zhen Sun, Men Zhao, Weifei Liu and Man Zhao



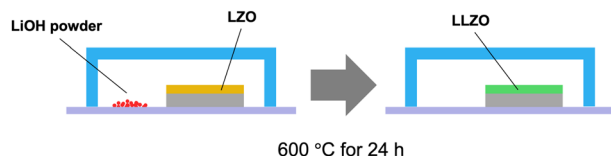
6627



Robust MOF-on-MOF heterostructures as efficient cathode candidates for next-generation supercapacitors

Rakesh Deka, Viresh Kumar and Shaikh M Mobin*

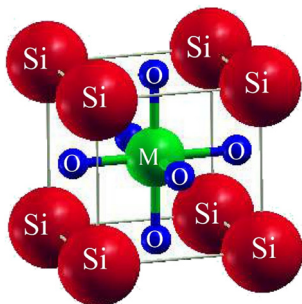
6638



Post-lithiation: a way to control the ionic conductivity of solid-state thin film electrolyte

Jixi Chen,* Alessandro Pallioto, Shinhee Yun, Dennis Valbjørn Christensen, Vincenzo Esposito and Nini Pryds*

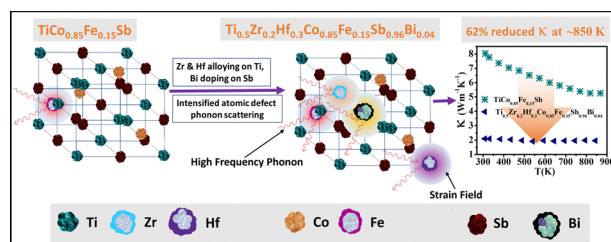
6645



Computational study of the physical characteristics of Si-based oxide perovskites for energy generation using DFT

Amjad Ali Pasha, Hukam Khan, Mohammad Sohail,* Nasir Rahman, Rajwali Khan, Omar H. Alsalmi, Dilsora Abduvalieva, Khamael M. Abualnaja, Atef El Jery and Mouataz Adrderly

6655



Approaching the minimum lattice thermal conductivity in TiCoSb half-Heusler alloys by intensified point-defect phonon scattering

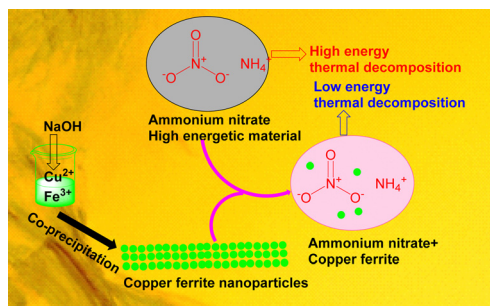
Ajay Kumar Verma, Shamma Jain, Kishor Kumar Johari, Christophe Candolfi, Bertrand Lenoir,* Sumeet Walia, S. R. Dhakate and Bhasker Gahtori*



6665

Comparative study of the thermal decomposition of ammonium nitrate in the presence of nanocrystalline copper ferrite

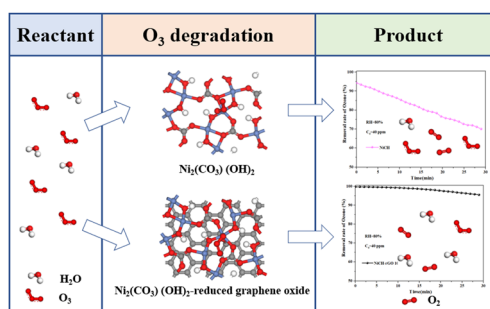
Pragnesh N. Dave* and Ruksana Sirach



6673

rGO nickel matrix composites with high ozone degradation efficiency under high humidity

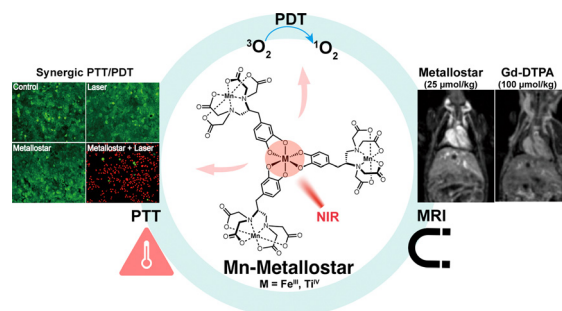
Qian Zhang,* Wenyan Xiao, Bangxin Li, Yu Lin, Lingyu Huang, Jifei Liao, Huiguo Han, Jie Zhu and Yan Fu



6682

Coordination-driven self-assembled Mn(II)-metallostar with high relaxivity and synergistic photothermal and photodynamic effects

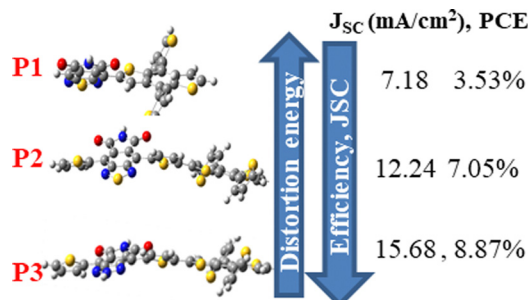
Huiyu Wu, Zhenghui Li, Yao Liu, Xingchi Shi, Yuan Xue, Zuhua Zeng, Fanglin Mi, Haiying Wang* and Jiang Zhu*



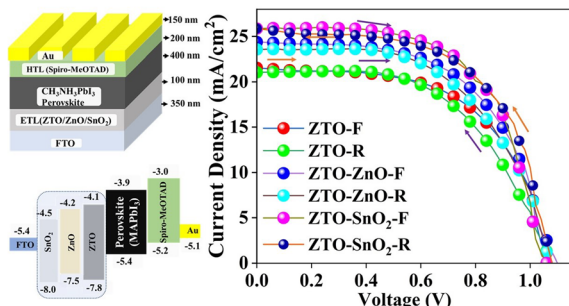
6694

Tailoring intra-molecular coupling in BDT-based copolymers to enhance their performance in fullerene-free organic solar cells

Newayemedhin A. Tegegne,* Asfaw Negash,* Desalegn Yilma, Kidan G. Gebremariam, Zewdneh Genene, Wendimagegn Mammo and Neill J. Goosen



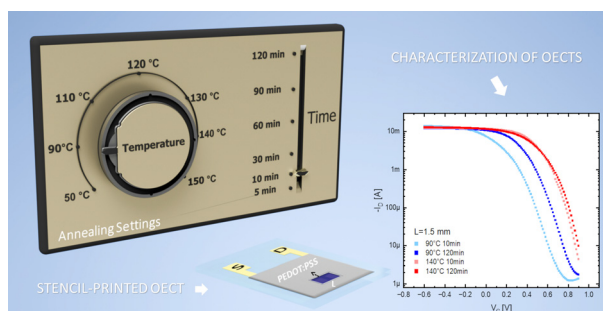
6704



Enhancing the perovskite solar cell performance by the interface modification of Zn–Sn–O compound heterostructures

Ranjith Kumar Poobalan, Ramarajan Ramanathan,*
Chellakumar R., K. Ravichandran and Michel Zinigrad

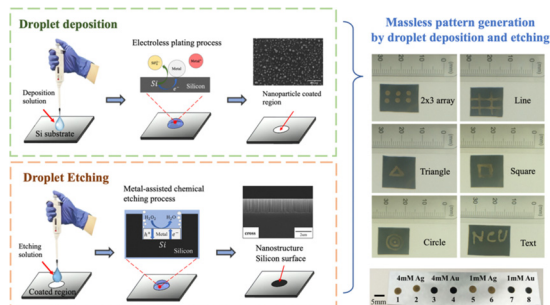
6718



Experimental design of stencil-printed high-performance organic electrochemical transistors

Amir Mohammad Ghafari, Michele Catacchio,
Emil Rosqvist, Axel Luukkonen, Anni Eklund,
Kim Björkström, Paolo Bollella, Luisa Torsi,
Eleonora Macchia* and Ronald Österbacka*

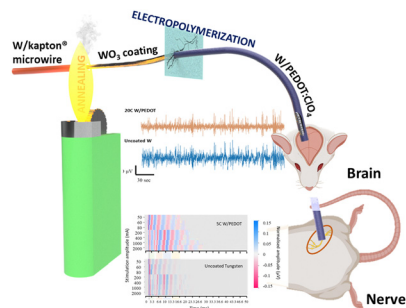
6730



Maskless patterning of metal nanoparticles and silicon nanostructures by a droplet deposition and etching process

Chia-Wen Tsao* and Ping-Chin Shen

6741



Electrodeposition of PEDOT:ClO₄ on non-noble tungsten microwire for nerve and brain recordings

Amparo Güemes, Antonio Dominguez-Alfaro,
Ryo Mizuta, Santiago Velasco-Bosom,
Alejandro Carnicer-Lombarte, Damiano G. Barone,
David Mecerreyes and George Malliaras*



CORRECTIONS

6754

Correction: The state of understanding of the electrochemical behaviours of a valve-regulated lead–acid battery comprising manganese dioxide-impregnated gel polymer electrolyte

Bipin S. Chikkatti, Ashok M. Sajjan* and Nagaraj R. Banapurmath

6755

Correction: Green pepper-derived hierarchical porous carbon for supercapacitors with high performance

Yicheng Zeng, Fuming Zhang, Jinggao Wu and Jing Huang*

