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# Materials Advances

An open access journal publishing across the breadth of materials science

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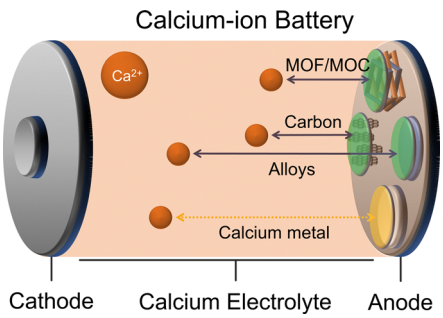
**Inside cover**
See M. Soorani *et al.*, pp. 2078–2087. Image reproduced by permission of Mitra Soorani from *Mater. Adv.*, 2023, **4**, 2078. Image credit: NASA/Johns Hopkins APL/Ben Smith.

## REVIEWS

2028

**Exploring anodes for calcium-ion batteries**

Henry R. Tinker, Christopher A. Howard, Min Zhou and Yang Xu*

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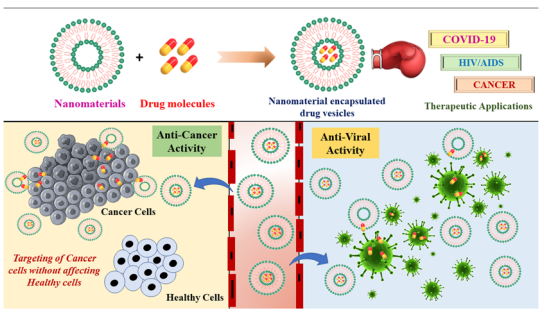
**Recent advancement in nanomaterial-encapsulated drug delivery vehicles for combating cancer, COVID-19, and HIV-like chronic diseases**

Suparna Paul, Subhajit Mukherjee and Priyabrata Banerjee*



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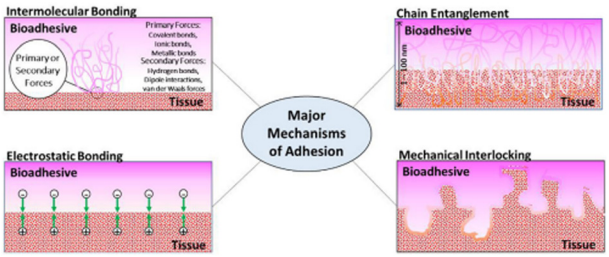
## REVIEWS

2062

**Bioadhesives for clinical applications – a mini review**

Uma K.*

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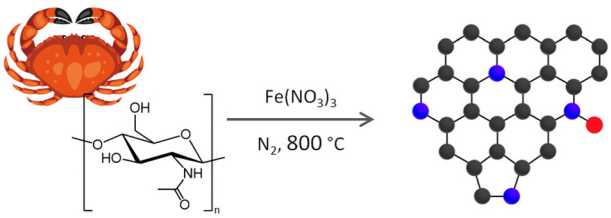
Robert D. Hunter, Emily C. Hayward, Glen J. Smales, Brian R. Pauw, A. Kulak, Shaoliang Guan and Zoe Schnepp*

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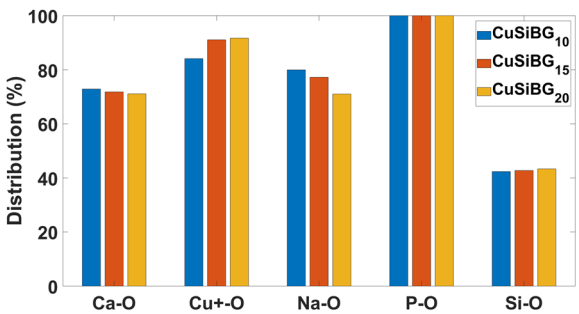
**Structural effects of incorporating $Cu^{+}$ and $Cu^{2+}$ ions into silicate bioactive glasses using molecular dynamics simulations**

M. Soorani,* E. Mele and J. K. Christie

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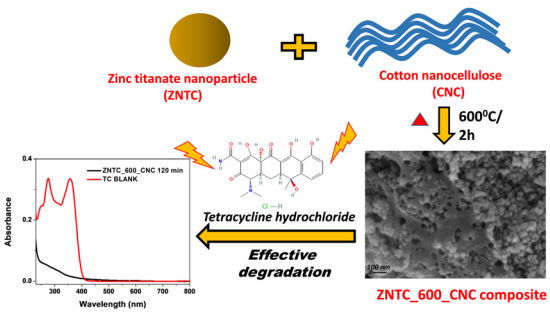
**Photodegradation of emerging contaminant tetracycline using a zinc titanate nanocellulose composite as an efficient photocatalyst**

Jahnabi Gogoi and Devasish Chowdhury*



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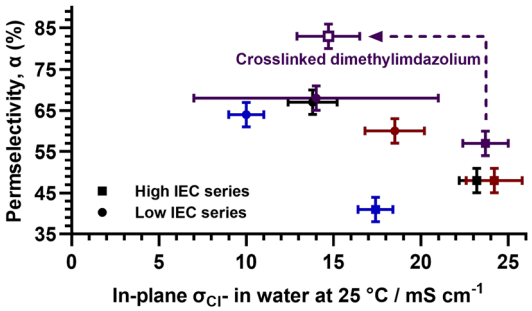


**Changes in permselectivity of radiation-grafted anion-exchange membranes with different cationic headgroup chemistries are primarily due to water content differences**

Arup Chakraborty, Ihtasham Salam, Mehdi Choolaei, Judy Lee, Carol Crean, Daniel K. Whelligan, Rachida Bance-Soualhi and John R. Varcoe*

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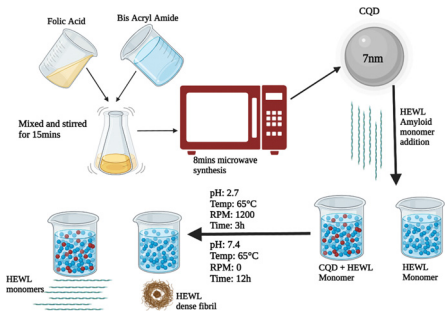


**A facile one-pot synthesis of water-soluble CQDs for the evaluation of their anti-amyloidogenic propensity**

Aniket Mukherjee and Nandini Sarkar*

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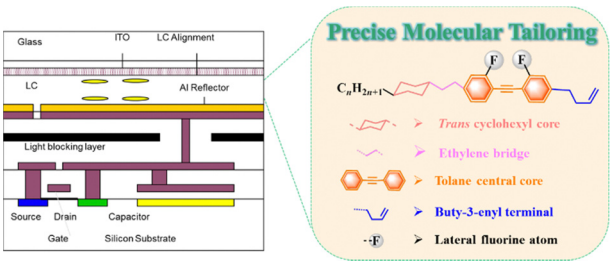


**High birefringence liquid crystals with a wide temperature range and low melting point for augmented reality displays**

Ran Chen, Liang Zhao, Yannanqi Li, Jian Li, Pei Chen, Xinbing Chen* and Zhongwei An*

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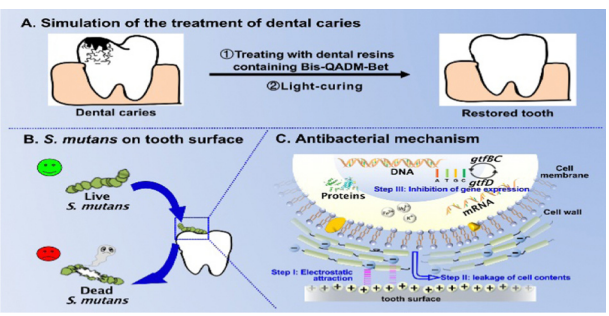


**Bis-quaternary ammonium betulin-based dimethacrylate: synthesis, characterization, and application in dental restorative resins**

Lusi Zhang, Zhiyuan Ma, Ruili Wang,* Weiwei Zuo and Meifang Zhu



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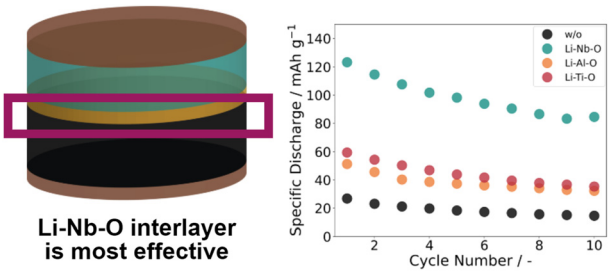
André Müller,* Faruk Okur, Abdessalem Aribia, Nicolas Osenciat, Carlos A. F. Vaz, Valerie Siller, Mario El Kazzi, Evgeniia Gilshtein, Moritz H. Futscher, Kostiantyn V. Kravchyk, Maksym V. Kovalenko and Yaroslav E. Romanyuk*

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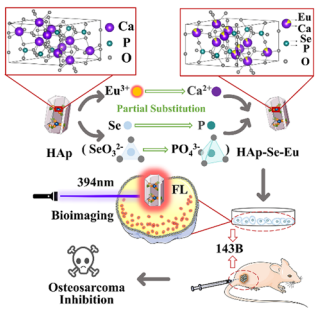
**A report on Se/Eu-doped hydroxyapatite: crystal structure analysis, biological property assessment, and applications in osteosarcoma inhibition and bioimaging**

Shuoshuo Zhou, Jian Ren, Lunzhu Wang, Liting Liu and Chunlin Deng*

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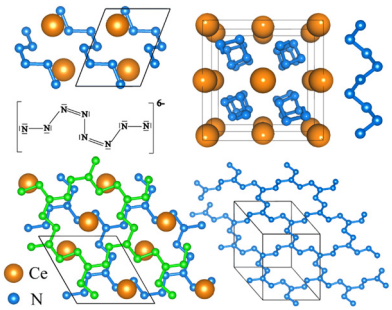
**Single-bonded nitrogen chain and porous nitrogen layer *via* Ce–N compounds**

Chi Ding, Jianan Yuan, Xiaomeng Wang, Tianheng Huang, Yunlong Wang and Jian Sun*

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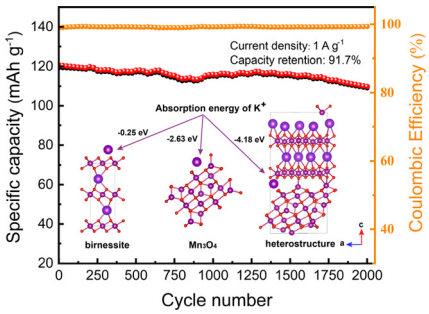
**Engineering a manganese-based oxide heterostructure cathode for high-performance aqueous potassium-ion storage**

Zheng Guan, Yunan Wang, Mingyue Zhang, Jie Liu, Shuangwen Li, Di Guo* and Xiaoxia Liu*



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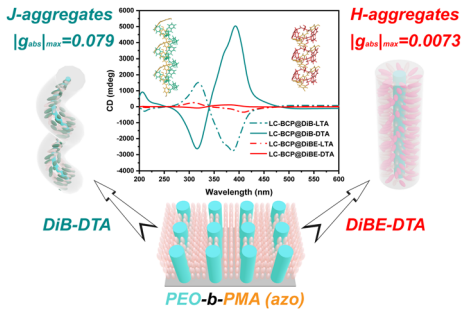


**Chiral amplification induced by self-assembly of different aggregation states in liquid crystal block copolymer films with chiral response**

Jianan Yuan, Xuemin Lu,* Xiaojie He, Feng Zheng and Qinghua Lu*

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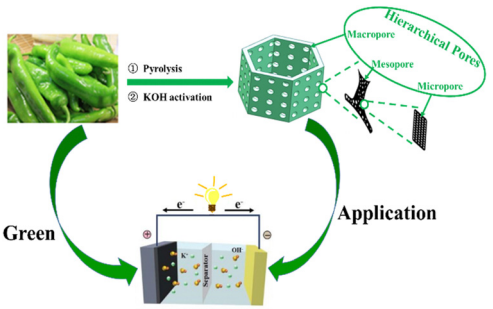


**Green pepper-derived hierarchical porous carbon for supercapacitors with high performance**

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

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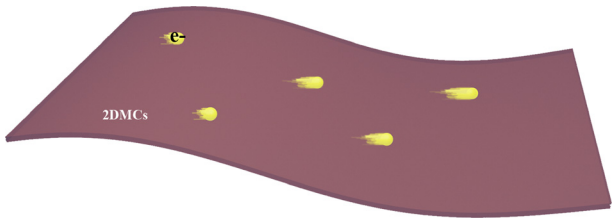


**Anisotropic valence band dispersion of 2D molecular crystals of C6-DPA and its charge transport dependence**

Qingqing Wang,* Jinpeng Yang, Mats Fahlman and Xianjie Liu*

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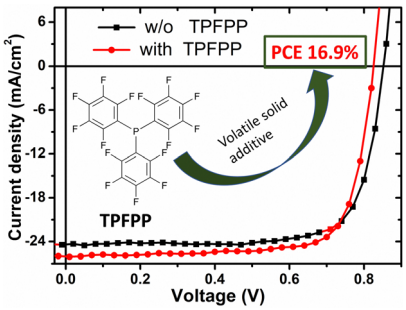


**A fluorine functionalised phosphine based solid additive for morphology control and achieving efficient organic solar cells**

Jegadesan Subbiah* and David J. Jones*



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PAPERS

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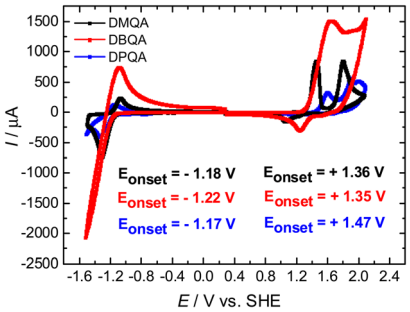
**N,N′-Substituted quinacridones for organic electronic device applications**

Donia Saadi, Felix Mayr, Cigdem Yumusak, Dominik Wielend, Munise Cobet, Bilge Kahraman, Cristian Vlad Irimia, Yasin Kanbur, Mateusz Bednorz, Kamil Kotwica, Amel Ben Fredj, Samir Romdhane, Markus C. Scharber, Niyazi Serdar Sariciftci and Mihai Irimia-Vladu*

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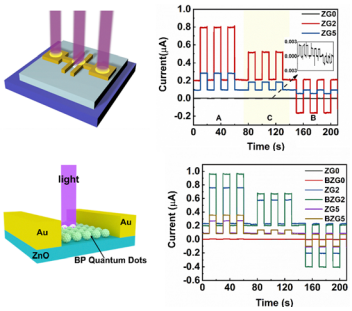
Manli Yang, Xiaoliang Weng, Muhammad Ahsan Iqbal, Chenxu Kang, Su-Yun Zhang and Yu-Jia Zeng*