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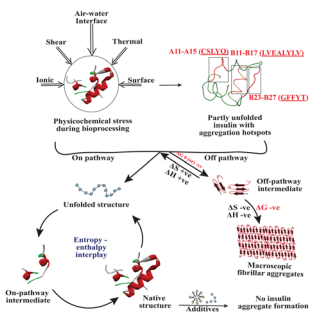
See Xian-Fu Zhang, Yang Li, Zhuoran Kuang *et al.*, pp. 24386–24394. Image reproduced by permission of Zhuoran Kuang from *Phys. Chem. Chem. Phys.*, 2023, **25**, 24386.

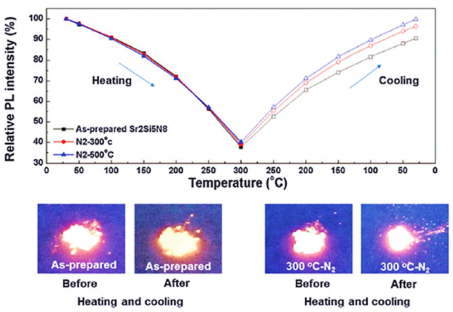

**Inside cover**
See Linxi Zhang *et al.*, pp. 24395–24405. Image reproduced by permission of Linxi Zhang from *Phys. Chem. Chem. Phys.*, 2023, **25**, 24395.

## REVIEWS







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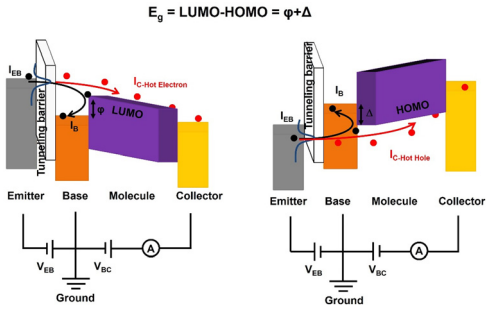
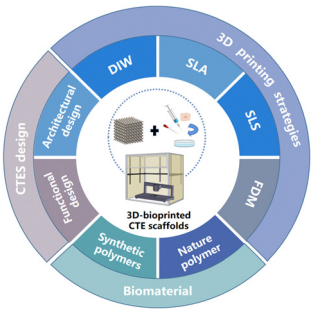
PERSPECTIVES

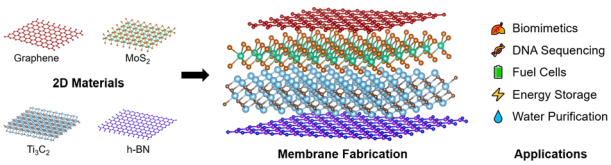




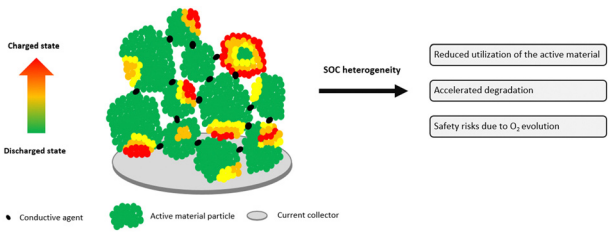






## COMMUNICATIONS



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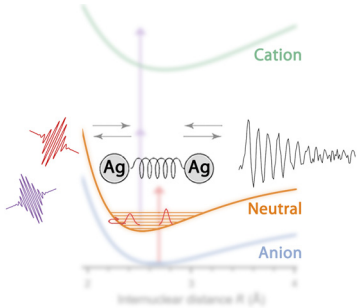




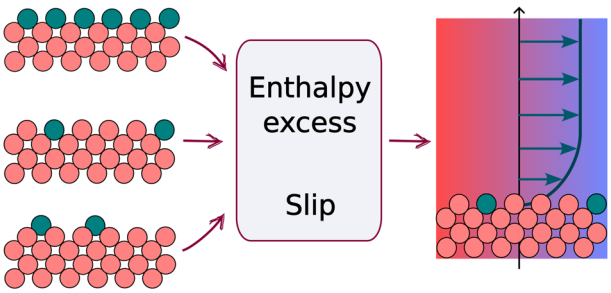




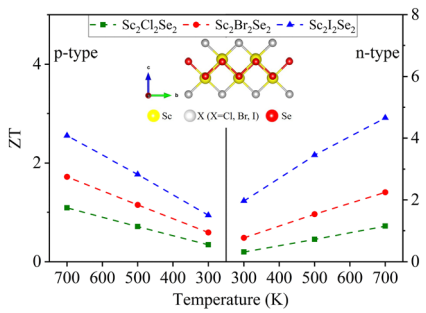




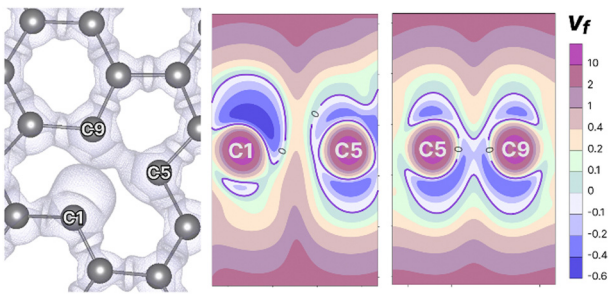

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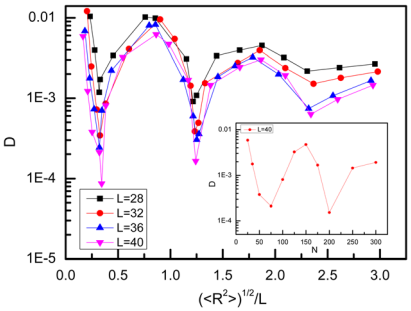




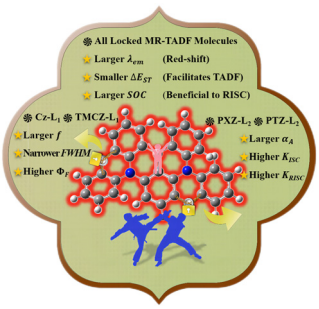




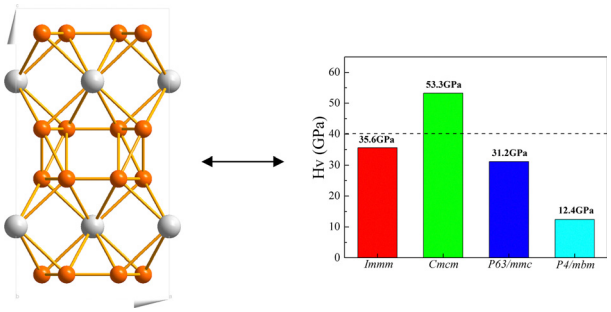




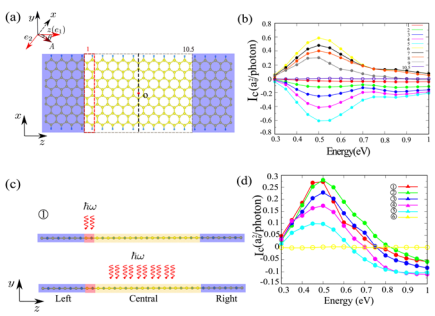

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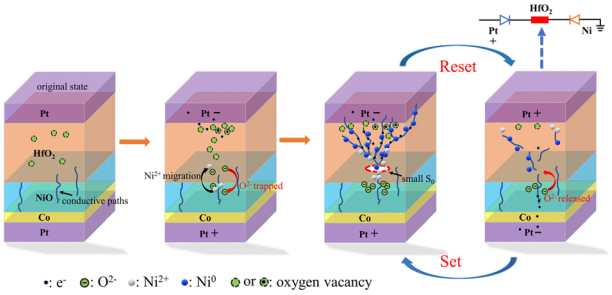
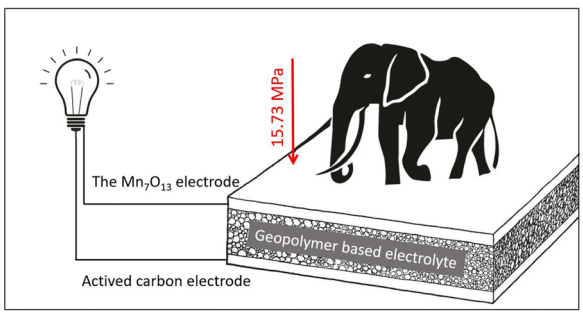



### Improved resistive switching performance and realized electric control of exchange bias in a $NiO/HfO_2$ bilayer structure

Yu Lu, Yuan Yuan, Ruobai Liu, Tianyu Liu, Jiarui Chen, Lujun Wei, Di Wu, Wei Zhang, Biao You and Jun Du*

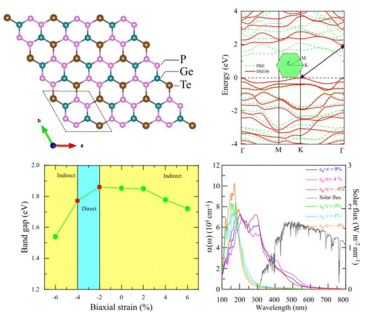
24448




### A geopolymer membrane for application in a structural mechanics and energy storage difunctional supercapacitor

Jing-Lei Yang, Wei-Bin Zhang,* Shan-Shan Chai, Myat Myintzu Theint, Yi Yin, Ze-Qin Yang, Jia-Jun Li, Yu-Hui Yi and Xue-Jing Ma*

24459




### Monolayer $Ge_2Te_2P_4$ as a promising photocatalyst for solar driven water-splitting: a DFT study

Trung D. Pham* and Tong D. Hien*

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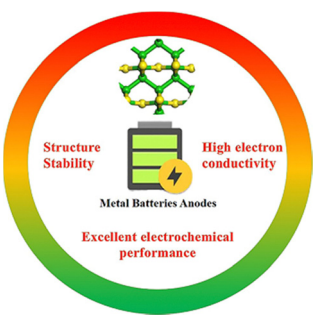


### $B_3S_2$ monolayer as an anode material for Na/K-ion batteries: a first-principles study

Danhong Wang, Zhifang Yang, Wenliang Li* and Jingping Zhang*

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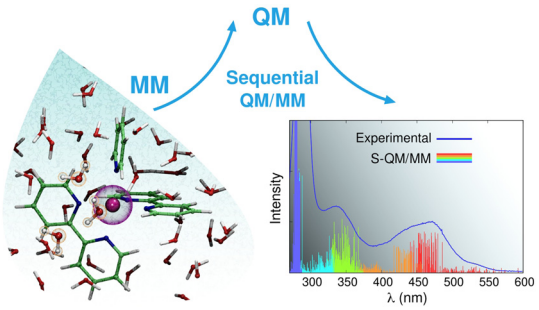




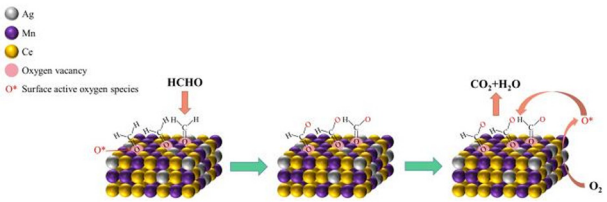




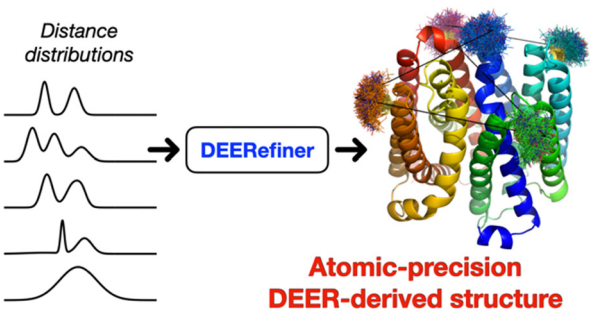




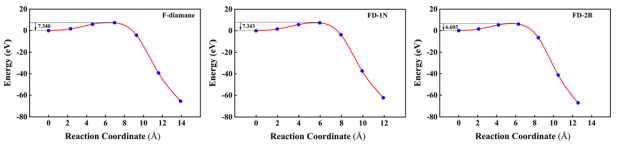

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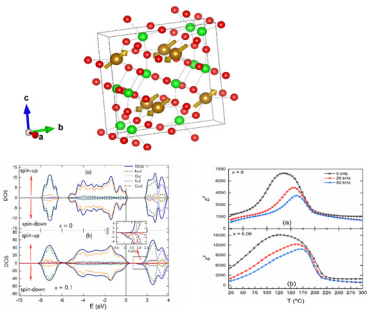



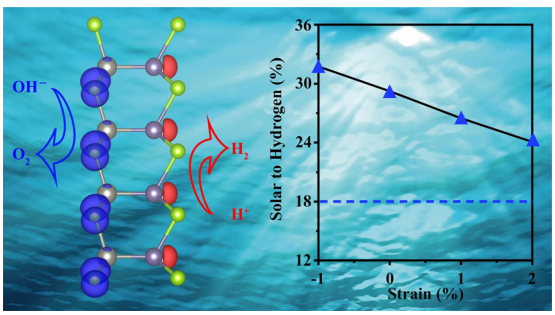




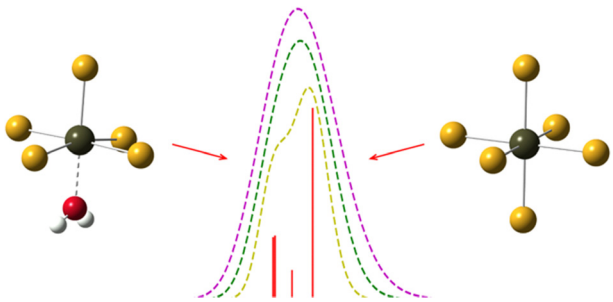



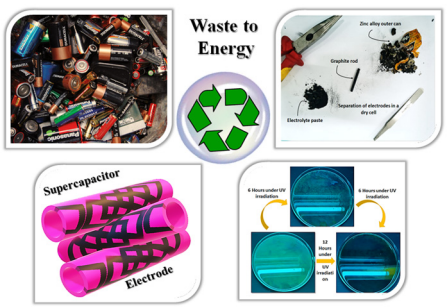

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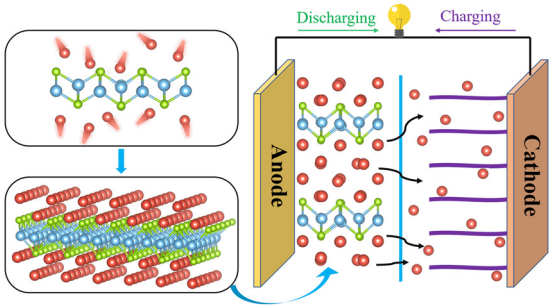


## A TiSe monolayer as a superior anode for applications of Li/Na/K-ion batteries

Mengke Wang, Shan Wang, Yunye Liang, Yiqun Xie, Xiang Ye* and Shoutian Sun*

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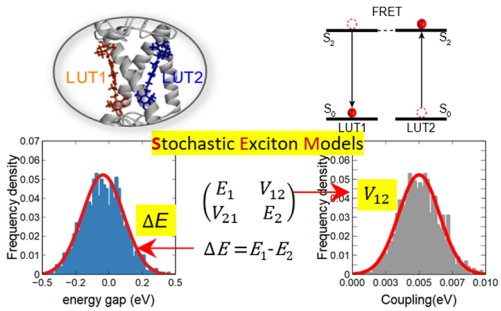


## Intermolecular resonance energy transfer between two lutein pigments in light-harvesting complex II studied by frenkel exciton models

Jiarui Li, Tao Zeng, Yu Zhai, Zexing Qu* and Hui Li*

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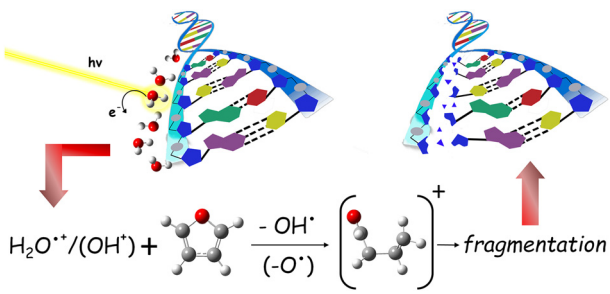


## $H_2O^{\bullet+}$ and $OH^+$ reactivity *versus* furan: experimental low energy absolute cross sections for modeling radiation damage

Daniela Ascenzi, Ewa Erdmann, Paola Bolognesi, Lorenzo Avaldi, Mattea Carmen Castrovilli, Roland Thissen, Claire Romanzin, Christian Alcaraz, Ismanuel Rabadan, Luis Mendez, Sergio Díaz-Tendero* and Antonella Cartoni*

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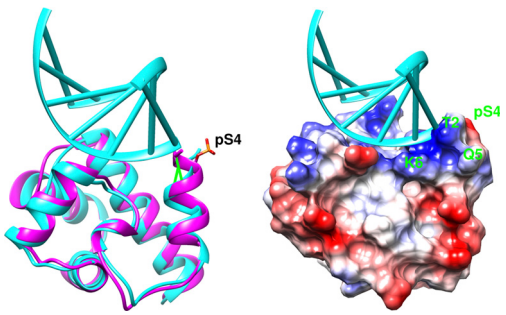


## Mono-phosphorylation at Ser4 of barrier-to-autointegration factor (Banf1) significantly reduces its DNA binding capability by inducing critical changes in its local conformation and DNA binding surface

Ming Tang,* Amila Suraweera, Xuqiang Nie, Zilin Li, Pinglin Lai, James W. Wells, Kenneth J. O'Byrne, Robert J Woods, Emma Bolderson* and Derek J Richard*

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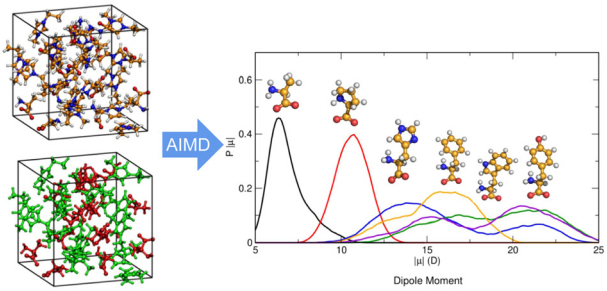
## Locality in amino-acid based imidazolium ionic liquids

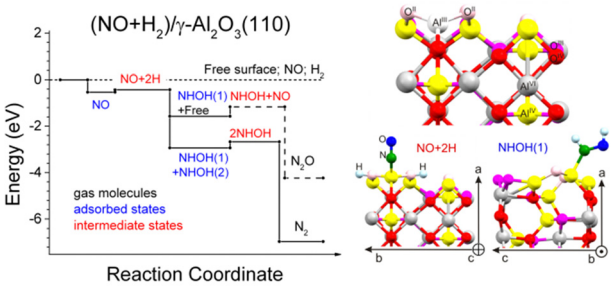
Wenbo Dong, Vahideh Alizadeh, Jan Blasius, Luke Wylie, Leonard Dick, Zhijie Fan and Barbara Kirchner*




24686

## Catalytic activity of γ-$Al_2O_3$(110) in the NO + $H_2$ reaction: a DFT study

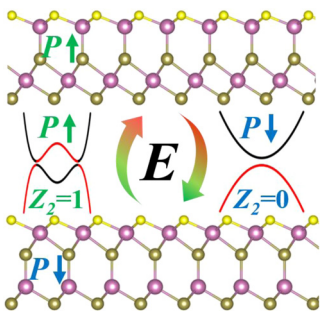
Alexander Cholach




24696

## Non-volatile control of topological phase transition in an asymmetric ferroelectric $In_2Te_2S$ monolayer

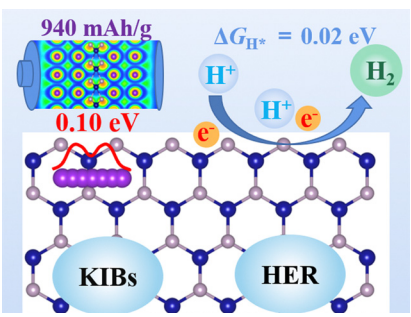
Guang Song,* Yangyang Wu, Lei Cao, Guannan Li, Bingwen Zhang, Feng Liang and Benling Gao




24705

## Metallic $CrP_2$ monolayer: potential applications in energy storage and conversion

Jiayu Gao, Wenyuan Zhang, Xu Yan, Xiaohua Zhang, Sheng Wang and Guochun Yang*



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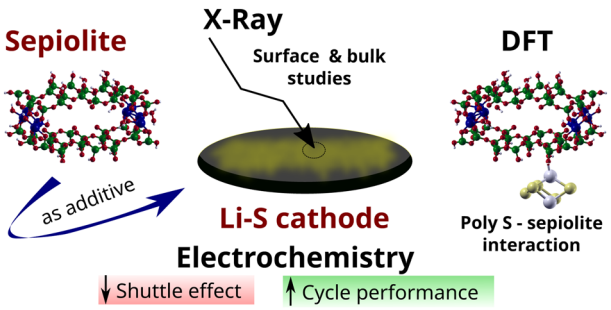




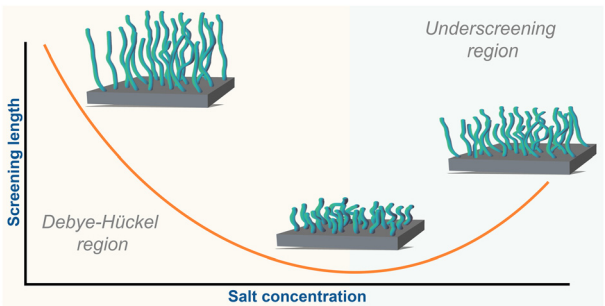




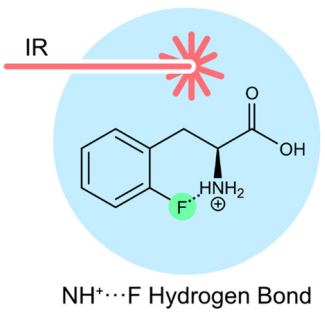




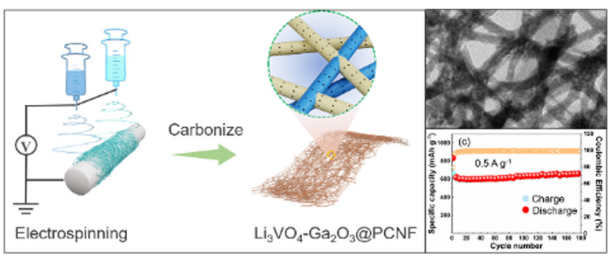

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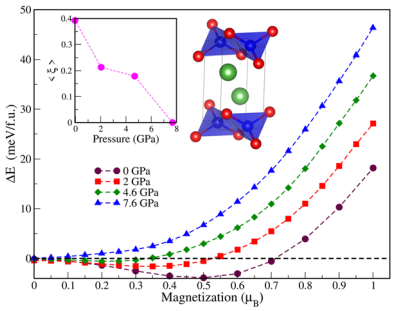




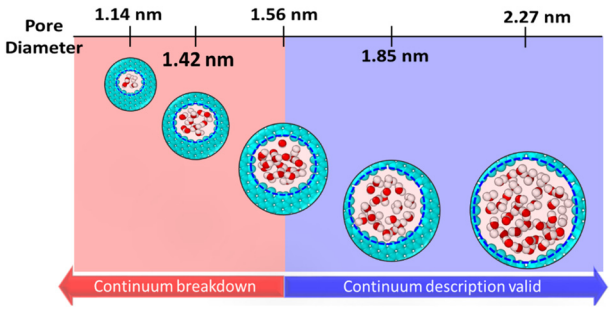




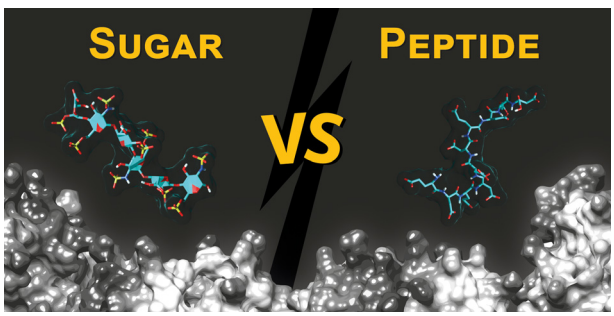




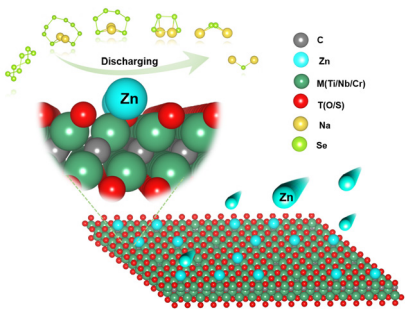

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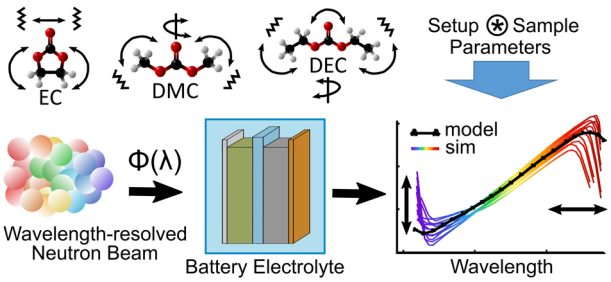
24993

## Prospects of spectroscopic neutron imaging: optimizing experimental setups in battery electrolyte research

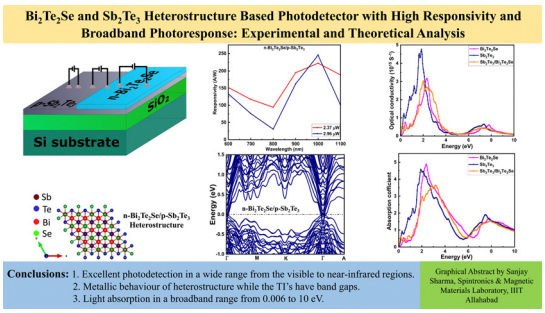
E. Ricardo Carreón Ruiz, Natalie Stalder, Jongmin Lee, Lorenz Gubler and Pierre Boillat*




25008

## $Bi_2Te_2Se$ and $Sb_2Te_3$ heterostructure based photodetectors with high responsivity and broadband photoresponse: experimental and theoretical analysis

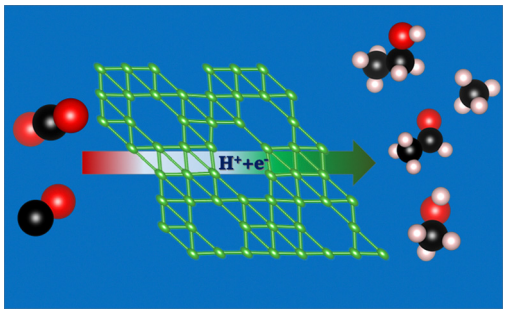
Sandeep Kumar Verma, Sanjay Sharma, Gyanendra Kumar Maurya, Vidushi Gautam, Roshani Singh, Ajeet Singh, Kavindra Kandpal, Pramod Kumar,* Arun Kumar and Claudia Wiemer*




25018

## Single B-vacancy enriched $\alpha_1$-borophene sheet: an efficient metal-free electrocatalyst for $CO_2$ reduction

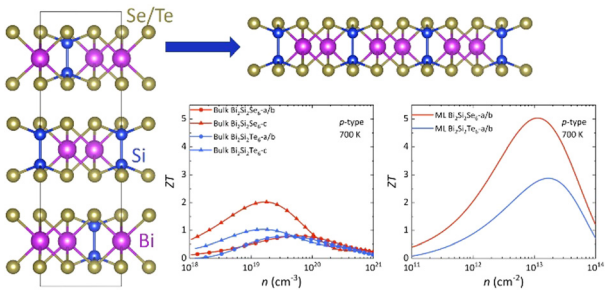
Prodyut Roy, Sourav Ghoshal, Anup Pramanik and Pranab Sarkar*




25029

## Dimensionality reduction induced synergetic optimization of the thermoelectric properties in $Bi_2Si_2X_6$ (X = Se, Te) monolayers

Tingting Zhang, Suiting Ning, Ziye Zhang, Ning Qi and Zhiquan Chen*



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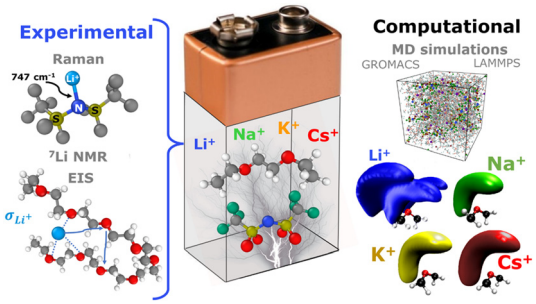


### Synergistic theoretical and experimental study on the ion dynamics of bis(trifluoromethanesulfonyl)-imide-based alkali metal salts for solid polymer electrolytes

Brigette Althea Fortuin, Jon Otegi, Juan Miguel López del Amo, Sergio Rodriguez Peña, Leire Meabe, Hegoi Manzano,* María Martínez-Ibañez* and Javier Carrasco*

## CORRECTION



### Correction: Lone pair driven anisotropy in antimony chalcogenide semiconductors

Xinwei Wang, Zhenzhu Li, Seán R. Kavanagh, Alex M. Ganose and Aron Walsh*