

## IN THIS ISSUE

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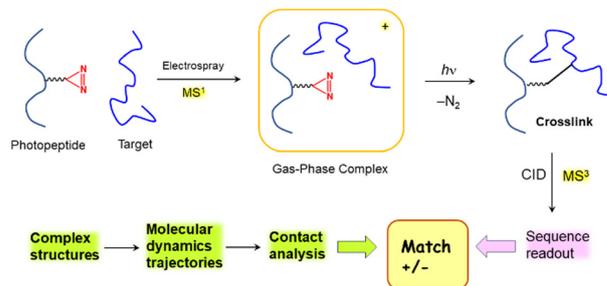
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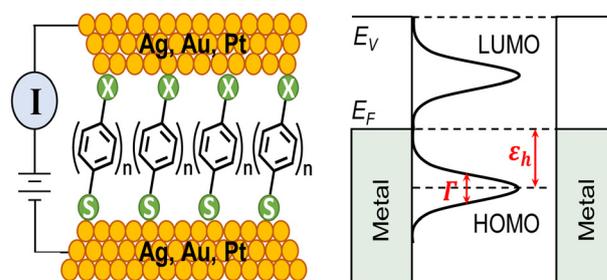
František Tureček



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### Deciphering $I$ – $V$ characteristics in molecular electronics with the benefit of an analytical model

Davood Taherinia and C. Daniel Frisbie\*



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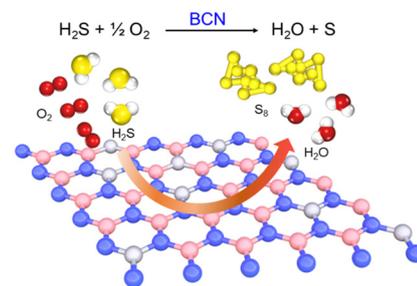
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### Carbon-doped boron nitride nanosheets as an efficient metal-free catalyst for the selective oxidation of H<sub>2</sub>S

Ganchang Lei, Sihui Qi, Haiyan Li, Yinjiang Xue, Lijuan Shen,\* Xiaohai Zheng, Shiping Wang, Yanning Cao and Yingying Zhan\*

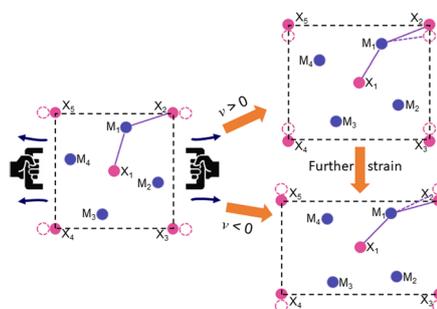


Enhancing sulfur and corrosion resistance performance

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### Prediction of 2D group-11 chalcogenides: insights into novel auxetic M<sub>2</sub>X (M = Cu, Ag, Au; X = S, Se, Te) monolayers

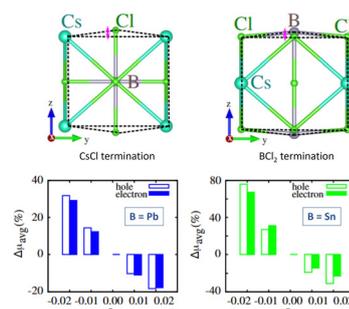
Yufei Xue, Lei Gao,\* Weina Ren, Xuxia Shai, Tingting Wei, Chunhua Zeng\* and Hua Wang\*



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### Surface termination and strain-induced modulation of the structure and electronic properties in 2D perovskites (Cs<sub>2</sub>BCl<sub>4</sub> & CsB<sub>2</sub>Cl<sub>5</sub>, B = Pb, Sn): a first-principles study

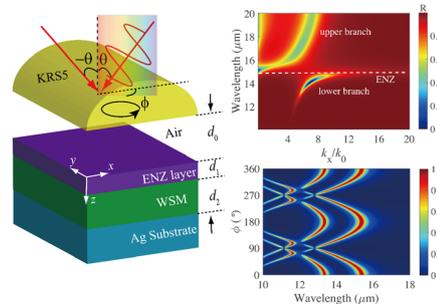
Kiran Yadav and Nirat Ray\*



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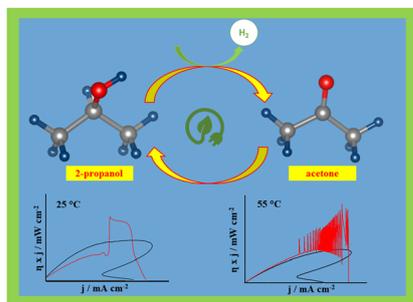
### Weyl semimetal mediated epsilon-near-zero hybrid polaritons and the induced nonreciprocal radiation

Sicheng Xu, Liming Qian, Mengran Sun and Gaige Zheng\*



## RESEARCH PAPERS

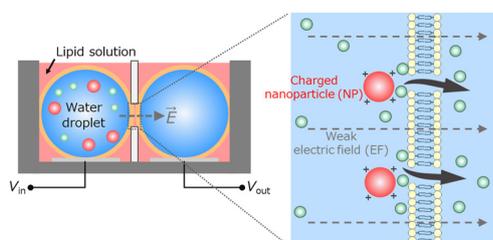
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### The oscillatory electro-oxidation of 2-propanol on platinum: the effect of temperature and addition of methanol

Gianluca Ragassi, André H. B. Dourado and Hamilton Varela\*

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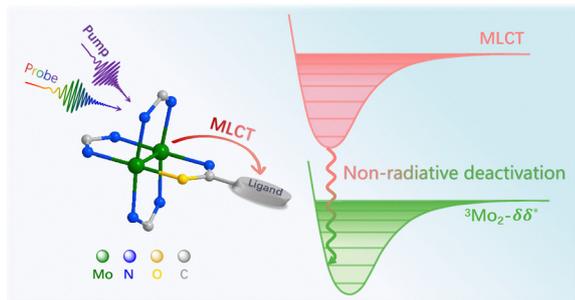


Charged NP + Weak EF = Cell-membrane-crossing of compounds without membrane breakdown

### Enhancement of cell membrane permeability by using charged nanoparticles and a weak external electric field

Hideya Nakamura,\* Takumi Okamura, Masaya Tajima, Ryuji Kawano, Misa Yamaji, Shuji Ohsaki and Satoru Watano

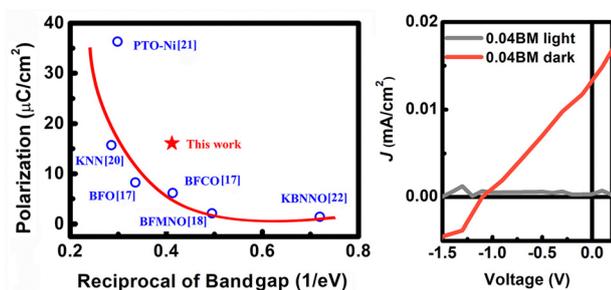
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### Influence of ligand variation on the deactivation process of metal-to-ligand charge transfer excited states in quadruply bonded dimolybdenum complexes

Yuqing Shi, Juanjuan Li, Can Cui, Guanzhi Wu\* and Tao Cheng\*

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### Simultaneous improvement of polarization and bandgap by finite solid solution engineering

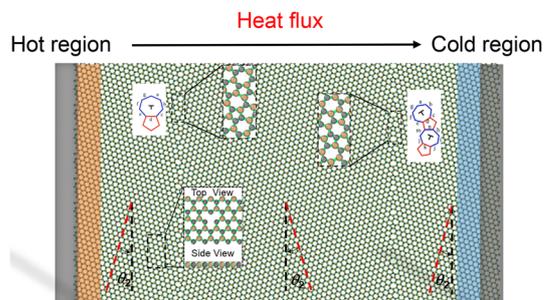
Fei Guo,\* Rui Liu, Siyuan Guo, Yaping Liu, Lei Gao and Shifeng Zhao\*



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### Impacts of defects on the mechanical and thermal properties of SiC and GeC monolayers

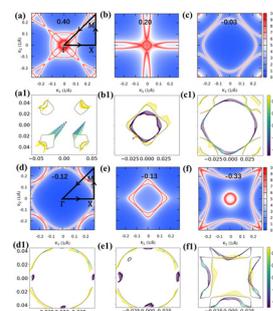
Kai Ren, Lei Huang, Huabing Shu, Guoqiang Zhang, Weihua Mu,\* Huanping Zhang, Huasong Qin\* and Gang Zhang\*



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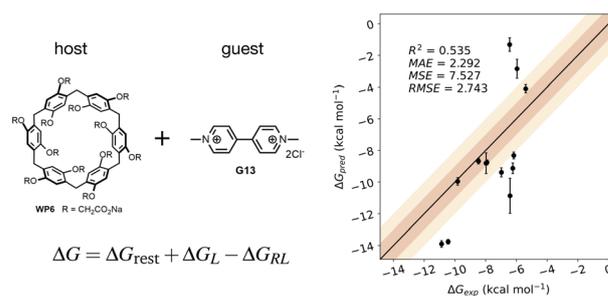
Wuyue Xu, Zhengxin Yan,\* Kezhao Xiong, Juntao Kong, Wei Song, Dongxin Li, Qian Cheng, Zehua Zhao and Xingkun Liang



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### Expanded ensemble predictions of absolute binding free energies in the SAMPL9 host–guest challenge

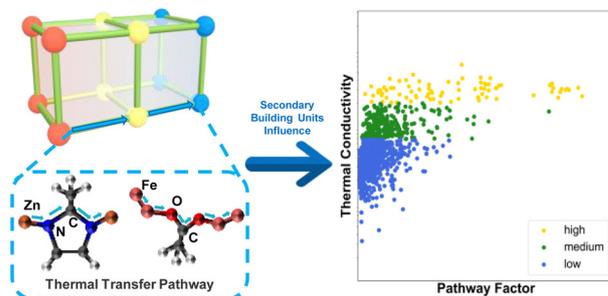
Matthew F. D. Hurley, Robert M. Raddi, Jason G. Patis and Vincent A. Voelz\*



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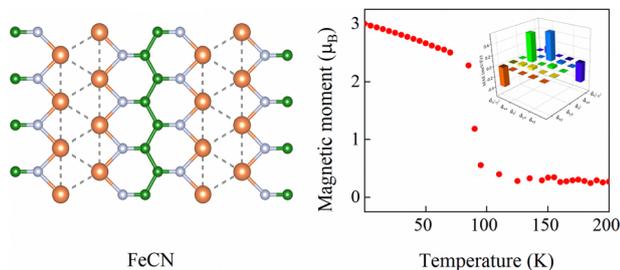
### Understanding the influence of secondary building units on the thermal conductivity of metal–organic frameworks via high-throughput computational screening

Yuanchuang Lin, Ruihuan Cheng, Tiangui Liang, Weixiong Wu, Song Li\* and Wei Li\*



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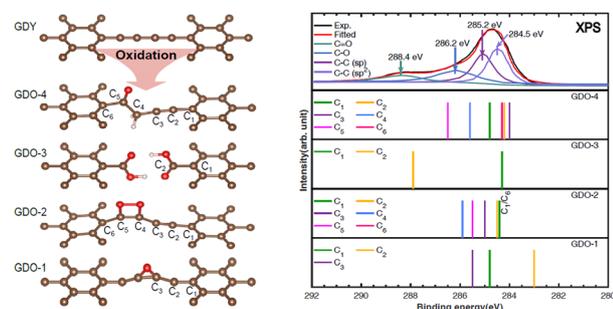
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## 2D antiferromagnetic semiconducting FeCN with interesting properties

Zhicui Wang, Huan Lou, Xu Yan, Yong Liu\* and Guochun Yang\*

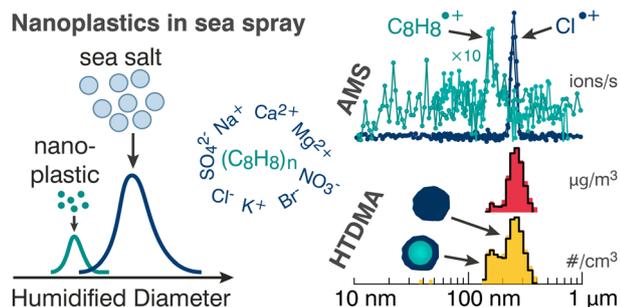
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## First-principles simulation of X-ray spectra of graphdiyne and graphdiyne oxides at the carbon K-edge

Jing Ming, Jun-Rong Zhang, Xiu-Neng Song, Xin Li, Weijie Hua\* and Yong Ma\*

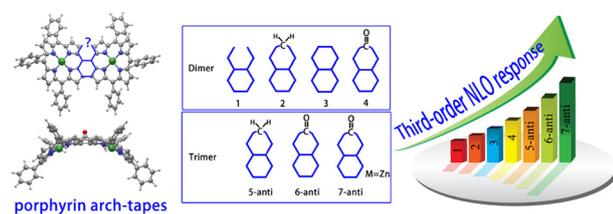
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## Morphology and hygroscopicity of nanoplastics in sea spray

Sarah Suda Petters,\* Eva Rosendal Kjærgaard, Freja Hasager, Andreas Massling, Marianne Glasius and Merete Bilde\*

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## Theoretical study on porphyrin arch-tapes of carbonyl-inserted seven-membered rings with high nonlinear optical properties

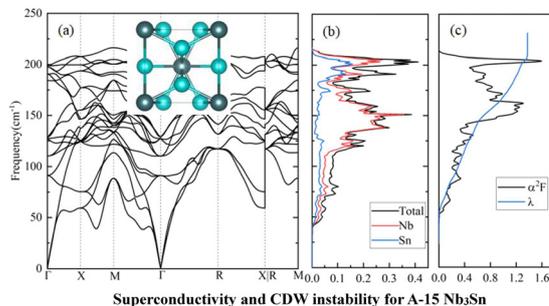
Jin-Ting Ye,\* Li-Hui Wang and Jia-Qi Yu\*



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### Coexistence of superconductivity and charge density wave instability in A15-Nb<sub>3</sub>Sn

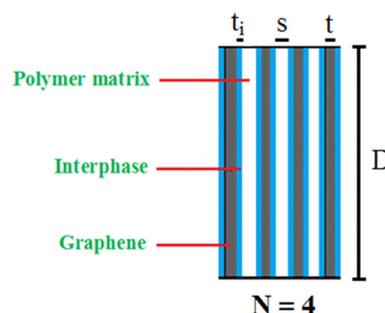
Li-Na Wu, Si-Tong Yang, Jin-Ke Shen, Jian-Sheng Zhang and Fei-Hu Liu\*



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### Percolation onset and conductivity of nanocomposites assuming an incomplete dispersion of graphene nanosheets in a polymer matrix

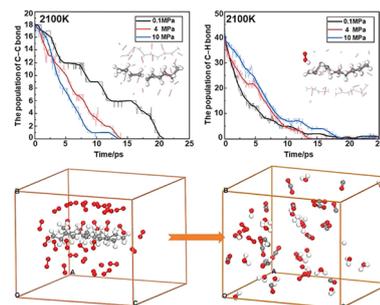
Yasser Zare,\* Muhammad Tajammal Munir and Kyong Yop Rhee\*



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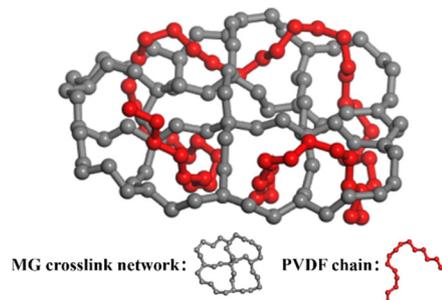
Teng Zhang, Wenbo Xia, Wei Fan,\* Lang Chen\* and Jun Chen\*



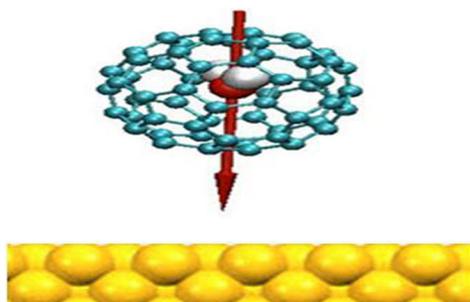
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### Crosslinking modification and hydrogen bonding synergy to achieve high breakdown strength and energy density of PMMA-co-GMA/PVDF dielectric composite films

Shuo Zheng, Xuanchen Zhao, Junhao Xie and Shulin Sun\*



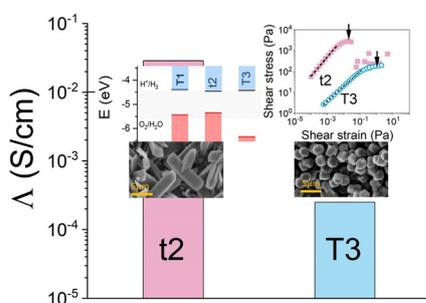
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### Fullerenes containing water molecules: a study of reactive molecular dynamics simulations

Masumeh Foroutan,\* Ahmad Boudaghi and Mahtab Alibalazadeh

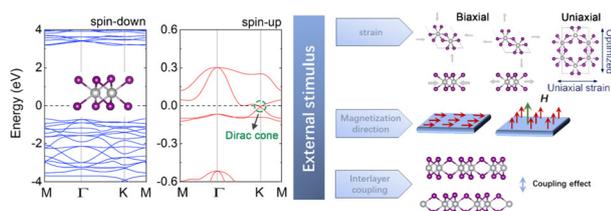
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### Morphological control for high proton conduction in robust $\text{Co}_3\text{O}_4$ -diethylmethylamine (metal-organic framework) membrane

Gargi Yadav, Pardeep K. Jha, Priyanka A. Jha,\* Parvin K. Singh, Suman Roy Choudhary and Prabhakar Singh\*

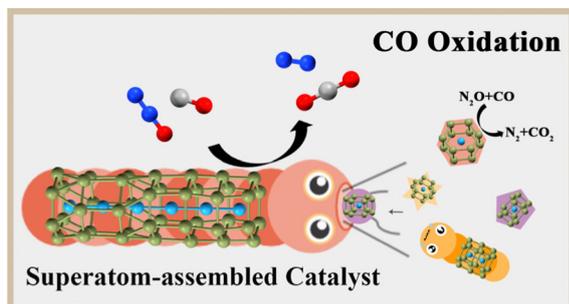
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### Tunable electronic band structure and magnetic anisotropy in two-dimensional Dirac half-metal $\text{MnBr}_3$ by external stimulus: strain, magnetization direction, and interlayer coupling

Fangyuan Xie, Zhengyu Yin, Baozeng Zhou\* and Yanhong Ding\*

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### Theoretical prediction of superatom $\text{WSi}_{12}$ -based catalysts for CO oxidation by $\text{N}_2\text{O}$

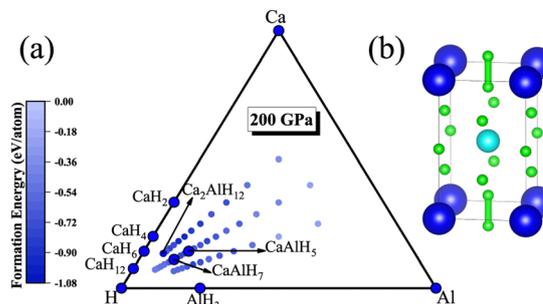
Ya-Ling Ye, Zhi-Chao Zhang, Bi-Lian Ni, Dan Yu, Jing-Hua Chen and Wei-Ming Sun\*



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### Phase diagrams and superconductivity of ternary Ca–Al–H compounds under high pressure

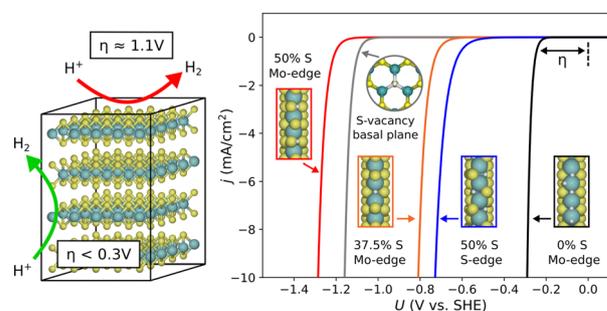
Ming Xu, Defang Duan, Mingyang Du, Wendi Zhao, Decheng An, Hao Song\* and Tian Cui\*



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### Sulfur-deficient edges as active sites for hydrogen evolution on $\text{MoS}_2$

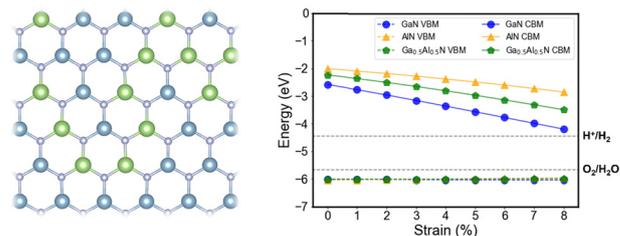
Sander Ø. Hanslin, Hannes Jónsson and Jaakko Akola\*



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### Two-dimensional III-nitride alloys: electronic and chemical properties of monolayer $\text{Ga}_{(1-x)}\text{Al}_x\text{N}$

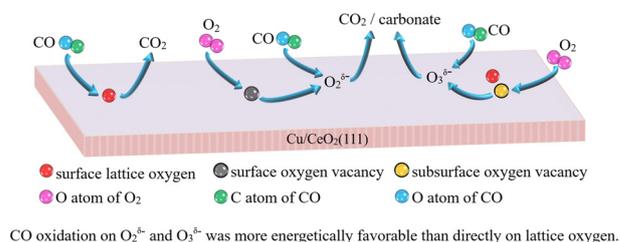
Yiqing Chen, Ying Zhao, Pengfei Ou\* and Jun Song\*



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### Formation of superoxide and ozone-like species on Cu doped $\text{CeO}_2(111)$ and their CO oxidation reactivity: a DFT study

Hao Wang, Yuan Li, Jiao Han, Caishun Zhang, Honghao Wang, Daosheng Liu, Xiaoning Hou, Lei Zhang\* and Zhixian Gao\*



CO oxidation on  $\text{O}_2^{\bullet-}$  and  $\text{O}_3^{\bullet-}$  was more energetically favorable than directly on lattice oxygen.

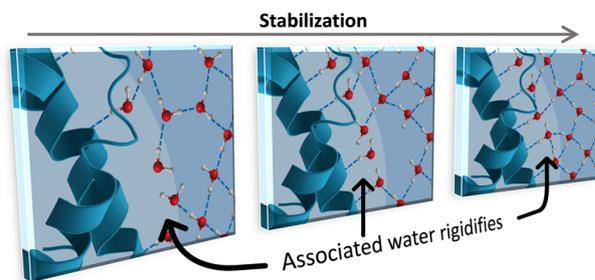




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### Osmolyte induced protein stabilization: modulation of associated water dynamics might be a key factor

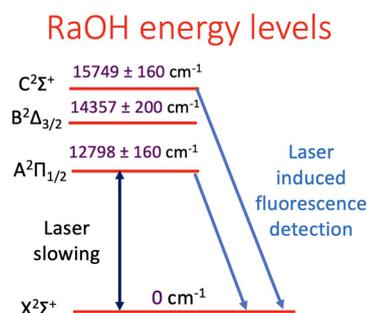
Kuldeep Singh Negi, Nilimesh Das, Tanmoy Khan and Pratik Sen\*



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### Relativistic coupled-cluster calculations of RaOH pertinent to spectroscopic detection and laser cooling

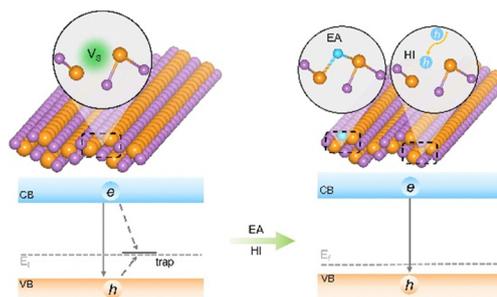
Chaoqun Zhang, Phelan Yu, Chandler J. Conn, Nicholas R. Hutzler\* and Lan Cheng\*



32622

### Blocking recombination centers by controlling the charge density of a sulfur vacancy in antimony trisulfide

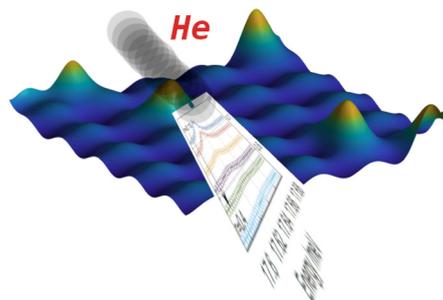
Xiao Han, Qi Zhao, Xiaodan Yan, Ting Meng\* and Jinlu He\*



32632

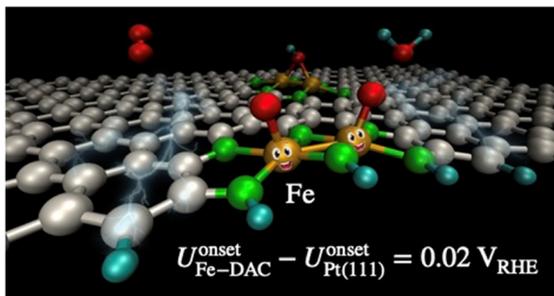
### Blue shifts in helium-surface bound-state resonances and quantum effects in cosine-law scattering

Luke Staszewski and Nadav Avidor\*



## RESEARCH PAPERS

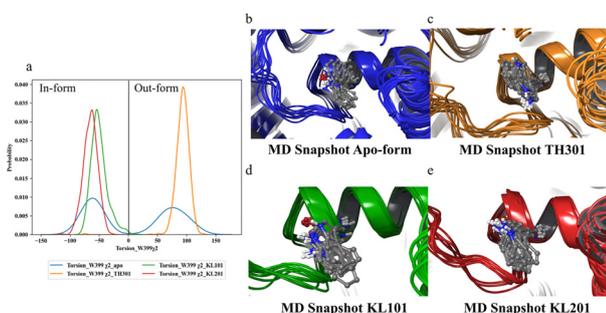
32637



### Graphene-edge-supported iron dual-atom for oxygen reduction electrocatalysts

Joel F. Sumbowo, Farhan A. Ihsan, Fajar Fathurrahman, Nadya Amalia, Fiki T. Akbar, Hadi T. Yudistira, Nadhratun N. Mobarak, Hermawan K. Dipojono, Sasfan A. Wella\* and Adhitya G. Saputro\*

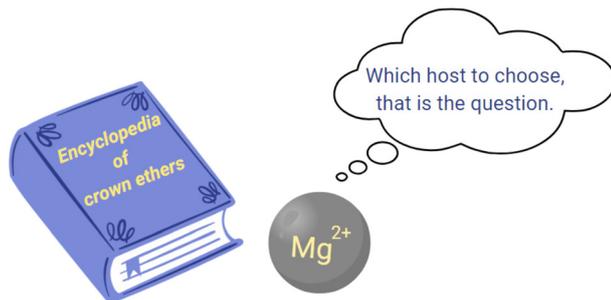
32648



### Elucidating TH301's influence on the torsion angle of CRY1 W399 using replica exchange with solute tempering (REST) molecular dynamics (MD) simulations

Yeongrae Cho, Kexin Li, Jin Hyup Lee, Seung Pil Pack and Art E. Cho\*

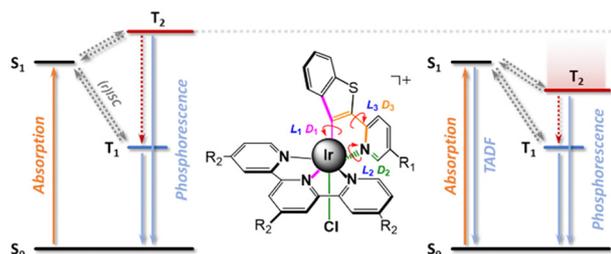
32656



### Density functional theory study of crown ether–magnesium complexes: from a solvated ion to an ion trap

Katarina Čeranić, Branislav Milovanović and Milena Petković\*

32666



### Computational study of the photophysical properties and electronic structure of iridium(III) photosensitizer complexes with electron-withdrawing groups

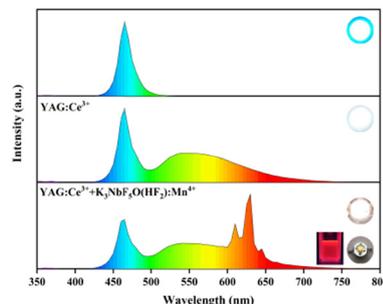
Yunlong Shang, Zhoujie Zhang, Mengping Huang, Na Shu, Hanyu Luo, Qiyao Cao, Bingbing Fan, Yu Han, Min Fang,\* Yong Wu\* and Jiawei Xu\*



32675

### A highly efficient Mn<sup>4+</sup> activated Nb-based oxyfluoride red fluorescent material with excellent water stability: preparation and performance analysis

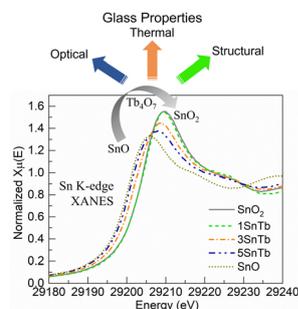
Ruiyang Wang, Hui Zhou, Wenjie Shi, Xiaofang Yu,\*  
Xiaoyun Mi,\* Xiuling Liu and Yanping Wang



32688

### XANES analysis of phosphate glasses melted with Tb<sub>4</sub>O<sub>7</sub> and SnO: evaluating the impact of valence states on structural, thermal, and luminescent properties

José A. Jiménez,\* Dugan Hayes, Cali Antolini and Benjamin J. Reinhart



32699

### Styrylpyrimidine chromophores with bulky electron-donating substituents: experimental and theoretical investigation

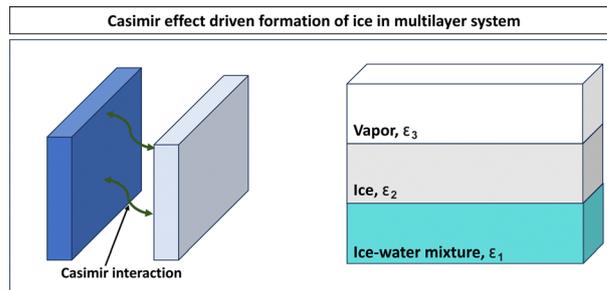
Maxime Hodée, Julien Massue,\* Sylvain Achelle,\*  
Arnaud Fihey,\* Denis Tondelier, Gilles Ulrich,  
Françoise Robin-le Guen and Claudine Katan



32709

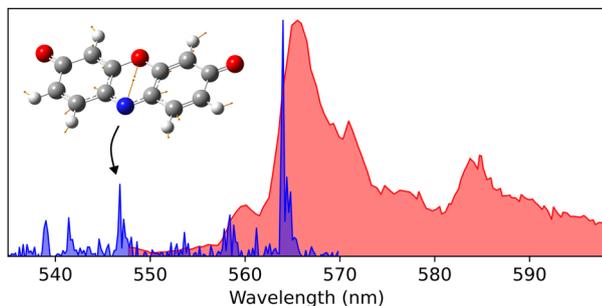
### van der Waals induced ice growth on partially melted ice nuclei in mist and fog

M. Boström,\* Y. Li,\* I. Brevik, C. Persson,  
S. Carretero-Palacios and O. I. Malý\*



## RESEARCH PAPERS

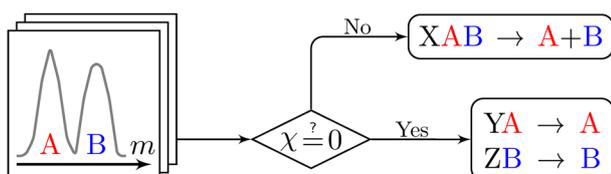
32715

**Cryogenic fluorescence spectroscopy of oxazine ions isolated *in vacuo***

Christina Kjær,\* Emil Vogt, Jeppe Langeland, Nanna Falk Christensen, Thomas Toft Lindkvist, Henrik G. Kjaergaard and Steen Brøndsted Nielsen

## COMMENT

32723

**Comment on “Cumulant mapping as the basis of multi-dimensional spectrometry” by Leszek J. Frasinski, *Phys. Chem. Chem. Phys.*, 2022, 24, 20776–20787**

Åke Andersson

Original work:  $\chi_1, \dots, \chi_6(\dots) = \dots$

This comment:  $\forall n \in \mathbb{N}: \chi_n(\dots) = \dots$

## CORRECTIONS

32726

**Correction: Cumulant mapping as the basis of multi-dimensional spectrometry**

Leszek J. Frasinski

32727

**Correction: Understanding the charge transfer dynamics of the  $\text{Cu}_2\text{WS}_4\text{-CNT-FeOOH}$  ternary composite for photo-electrochemical studies**

Preeti Dagar, Nandan Ghorai, Manisha Bungla, Hirendra N. Ghosh\* and Ashok K. Ganguli\*



## CORRECTIONS

32728

**Correction: UV and VUV-induced fragmentation of tin-oxo cage ions**

Jarich Haitjema, Lianjia Wu, Alexandre Giuliani, Laurent Nahon, Sonia Castellanos and Albert M. Brouwer\*

