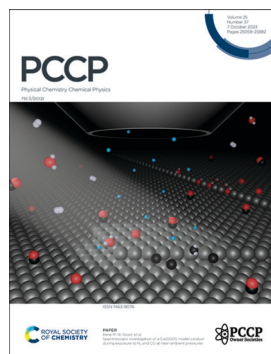


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Cover

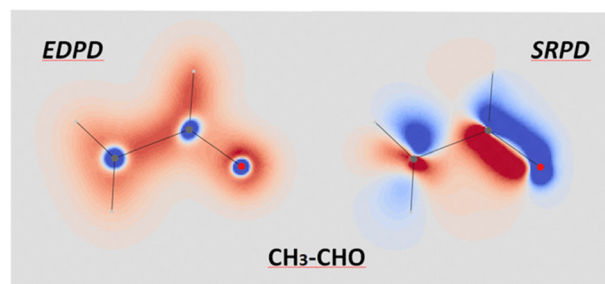
See Sabine Wenzel *et al.*, pp. 25094–25104.
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PERSPECTIVE

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Electronic current densities and origin-independent property densities induced by optical fields

Francesco F. Summa, Guglielmo Monaco, Paolo Lazzeretti and Riccardo Zanasi*

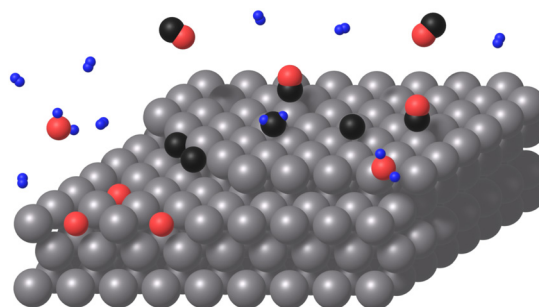


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Spectroscopic investigation of a Co(0001) model catalyst during exposure to H₂ and CO at near-ambient pressures

Sabine Wenzel, Dajo Boden, Richard van Lent, Elahe Motaee, Mahesh K. Prabhu, Hamed Achour and Irene M. N. Groot*



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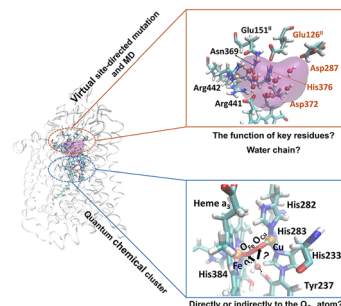


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New insights into the proton pumping mechanism of ba_3 cytochrome *c* oxidase: the functions of key residues and water

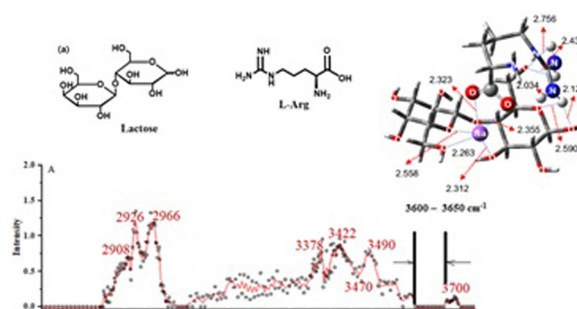
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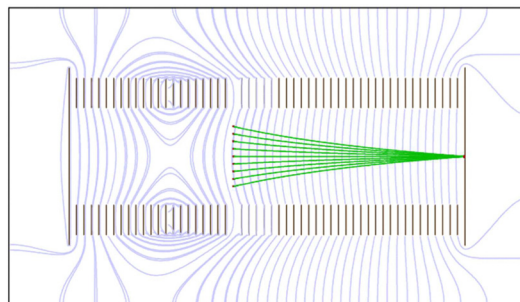
Min Kou, Young-Ho Oh, Sungyul Lee* and Xianglei Kong*



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Velocity map imaging with no spherical aberrations

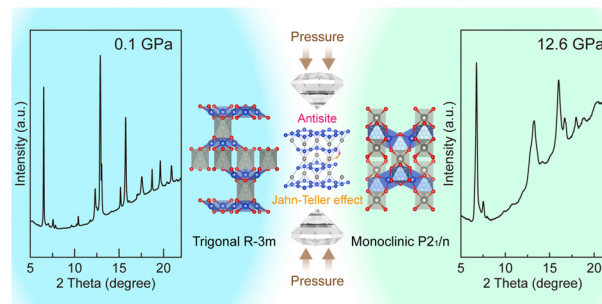
Yehuda Ben-Shabo, Adeliya Kurbanov, Claus Dieter Schröter, Robert Moshhammer, Holger Kreckel and Yoni Toker*



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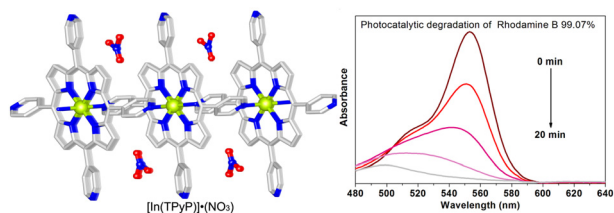
Structural phase transformation of quantum spin liquid herbertsmithite *via* pressure induced enhancement of the cooperative Jahn–Teller effect and antisite disorder

Yaxiao Luo, Jian Zhang,* Jiayi Wu, Hui Tian, Yanmei Ma, Lina Jiang, Hang Cui and Qiliang Cui



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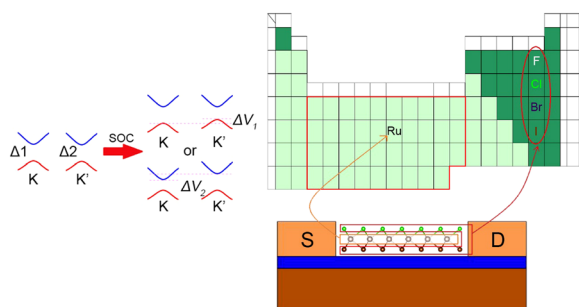
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Fast photocatalytic degradation of rhodamine B using indium-porphyrin based cationic MOF under visible light irradiation

Chang-Xun Dou, Xu-Ke Tian, Ying-Jun Chen, Pei-Pei Yin, Jia-Hui Guo, Xiao-Gang Yang,* Yu-Ming Guo* and Lu-Fang Ma

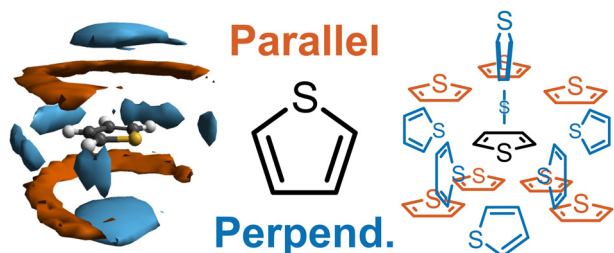
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Two dimensional Janus RuXY (X, Y = Br, Cl, F, I, X ≠ Y) monolayers: ferromagnetic semiconductors with spontaneous valley polarization and tunable magnetic anisotropy

Ziyu Liu, Baozeng Zhou, Xiaocha Wang* and Wenbo Mi*

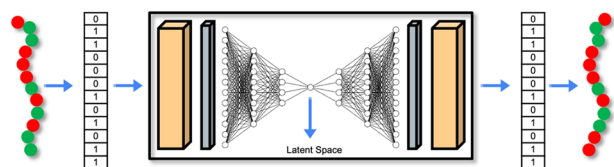
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The structure of liquid thiophene from total neutron scattering

Thomas F Headen,* Camilla Di Mino, Tristan GA Youngs and Adam J Clancy*

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Developing efficient deep learning model for predicting copolymer properties

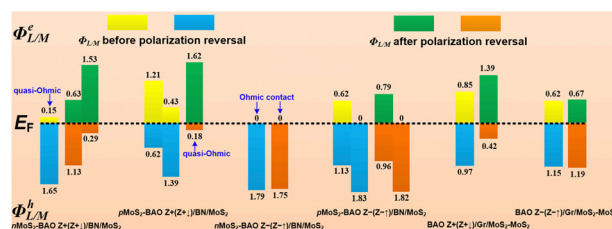
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Polarization-tunable interfacial properties in monolayer-MoS₂ transistors integrated with ferroelectric BiAlO₃(0001) polar surfaces

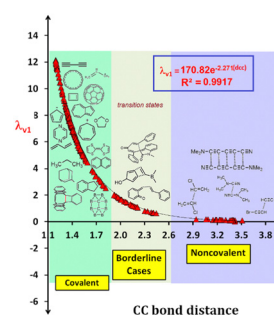
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Topology of electrostatic potential and electron density reveals a covalent to non-covalent carbon-carbon bond continuum

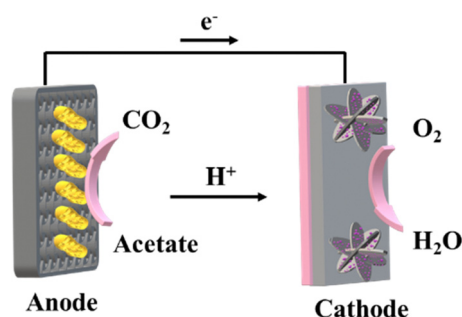
Puthannur K. Anjalikrishna, Shridhar R. Gadre* and Cherumuttathu H. Suresh*



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High power density output and durability of microbial fuel cells enabled by dispersed cobalt nanoparticles on nitrogen-doped carbon as the cathode electrocatalyst

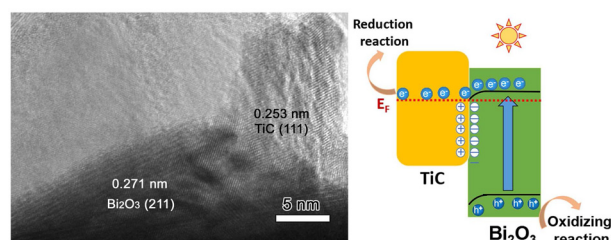
Yuxian Yang, Jialuo Lin, Xin Li, Zhuoyue Chen, Yingyu Lin, Mengqing Xu and Weishan Li*



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Non-noble-metal TiC-nanoparticle-promoted charge separation and photocatalytic degradation performance on Bi₂O₃ microrods: degradation pathway and mechanism investigation

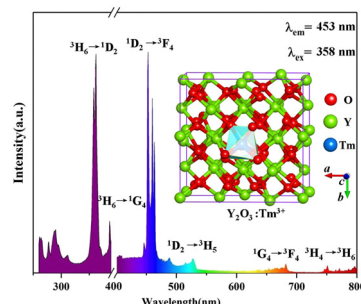
Tao Xian,* Ke Ma, Lijing Di,* Xuelian Ma, Xiaofeng Sun and Hua Yang



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Photoluminescence and energy transfer mechanisms of Tm^{3+} doped Y_2O_3 laser crystals: experimental and theoretical insights

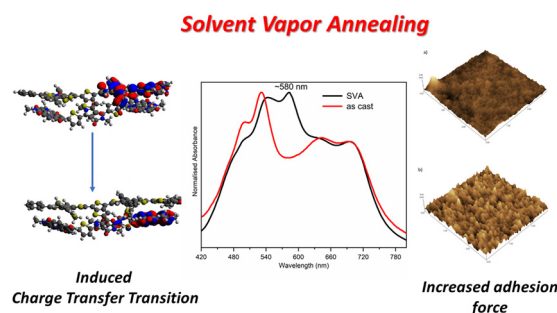
Meng Ju,* Hongkuan Yuan, Wenhao Ji, Lei Zhao,* Yang Xiao and Yauyuen Yeung*



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Effects of solvent vapor annealing on the optical properties and surface adhesion of conjugated D:A thin films

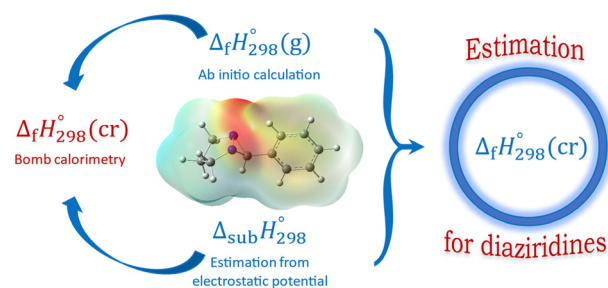
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Enthalpy of formation of 6-phenyl-1,5-diazabicyclo[3.1.0]hexane by combustion calorimetry and theoretical approach for efficient prediction of thermochemistry of diaziridines

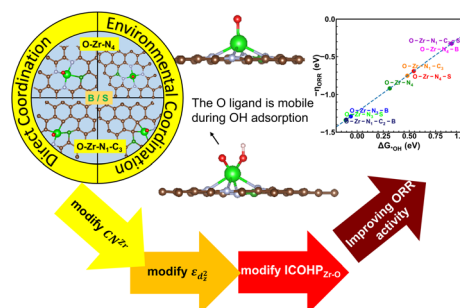
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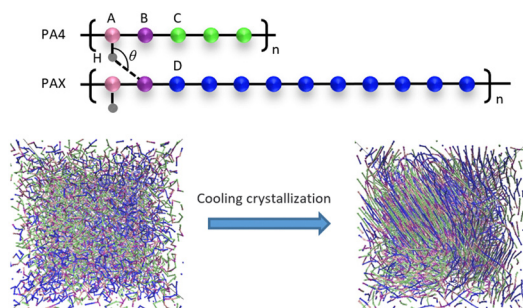
Coordination engineering of atomically dispersed zirconium on graphene for the oxygen reduction reaction

Jessie Manopo, Pangeran Niti Kusumo, Afriyanti Sumboja and Yudi Darma*



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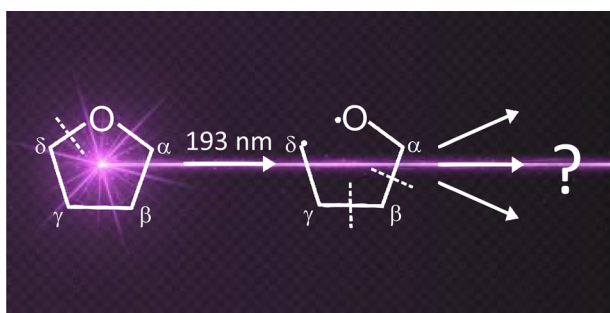
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Molecular dynamics simulation and non-isothermal crystallization kinetics of polyamide 4 and different bio-based polyamide blends

Yajing Zhang, Mingda Wang, Liquan Wang, Tao Chen, Weisheng Feng, Tianyi Wang and Liming Zhao*

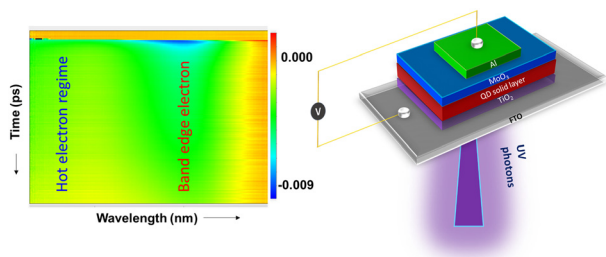
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Photodissociation dynamics of tetrahydrofuran at 193 nm

Dennis Milešević, Joseph Stimson, Divya Popat, Patrick Robertson and Claire Vallance*

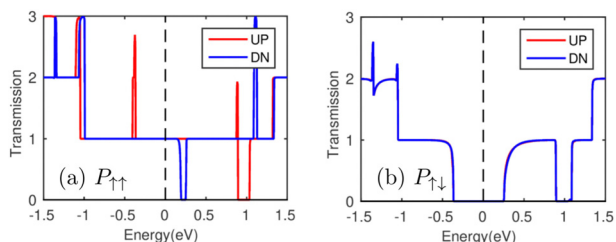
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Induced UV photon sensing properties in narrow bandgap CdTe quantum dots through controlling hot electron dynamics

Thankappan Thrupthika, Devaraj Nataraj,* Subramaniam Ramya, Arumugam Sangeetha and T. Daniel Thangadurai

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Momentum matching induced giant magnetoresistance in two-dimensional magnetic tunnel junctions

Yaohua Qiu, Chun-Sheng Liu, Xingqiang Shi, Xiaohong Zheng* and Lei Zhang*

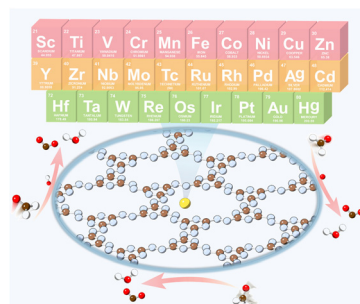


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Efficient degradation of formaldehyde based on DFT-screened metal-doped C_3N_6 monolayer photocatalysts: performance evaluation and mechanistic insights

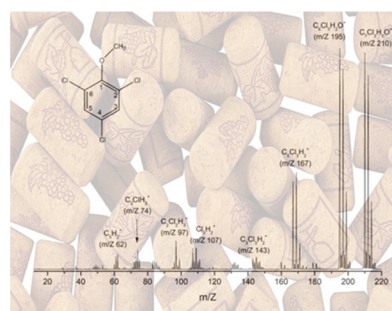
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Electron ionization induced fragmentation pathways of trichloroanisole

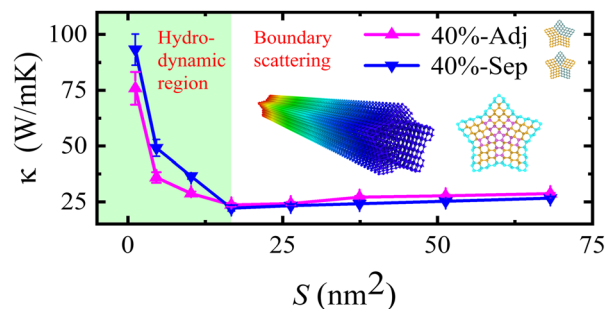
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Thermal conductivity of fivefold twinned silicon-germanium heteronanowires

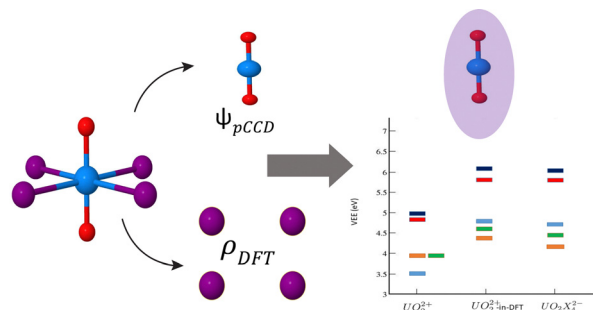
Ziyue Zhou, Jincheng Zeng, Zixuan Song, Yanwen Lin, Qiao Shi, Yongchao Hao, Yuequn Fu,* Zhisen Zhang* and Jianyang Wu*



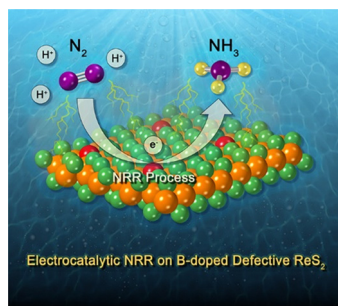
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Static embedding with pair coupled cluster doubles based methods

Rahul Chakraborty, Katharina Boguslawski and Paweł Tecmer*



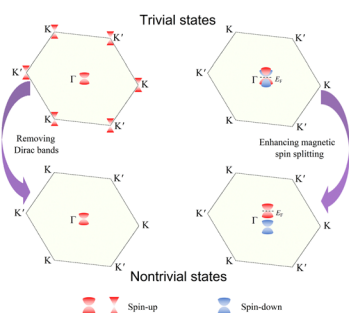
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Unleashing the power of boron: enhancing nitrogen reduction reaction through defective ReS₂ monolayers

Thi H. Ho, Viet Q. Bui,* Quynh Anh T. Nguyen, Yoshiyuki Kawazoe, Seong-Gon Kim and Pham Cam Nam

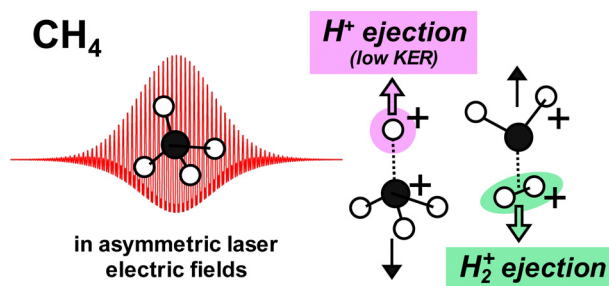
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Engineering topological states in a two-dimensional honeycomb lattice

Yaling Zhang, Jingjing Zhang, Wenjia Yang, Huisheng Zhang* and Jianfeng Jia*

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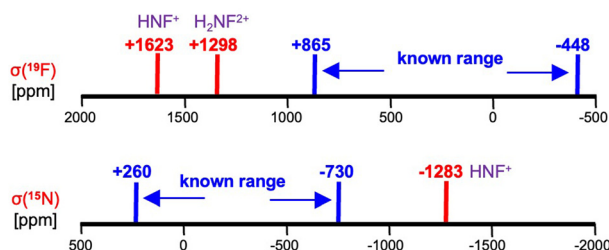


Dissociative ionization and Coulomb explosion of CH₄ in two-color asymmetric intense laser fields

H. Hasegawa, A. Matsuda, T. Morishita, L. B. Madsen, F. Jensen, O. I. Tolstikhin and A. Hishikawa*

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Extreme NMR shielding in fluoro-nitrogen cations

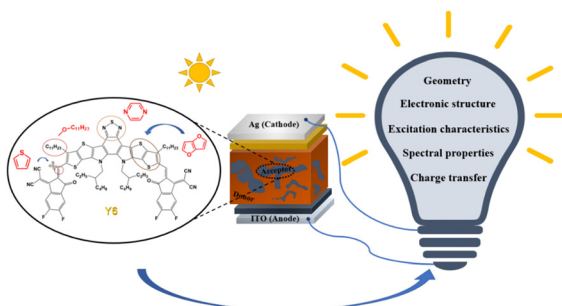


Extreme NMR shielding in fluoro-nitrogen cations

David J. D. Wilson



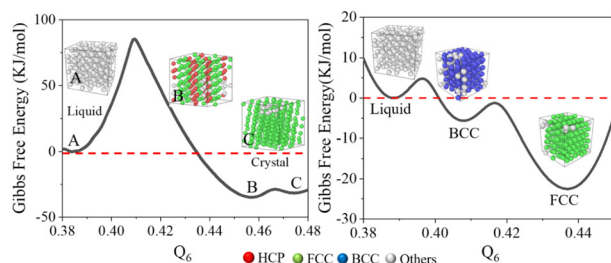
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Modulating the organic photovoltaic properties of non-fullerene acceptors by molecular modification based on Y6: a theoretical study

Cai-Rong Zhang,* Hai-Yuan Yu, Mei-Ling Zhang, Xiao-Meng Liu, Yu-Hong Chen, Zi-Jiang Liu, You-Zhi Wu and Hong-Shan Chen

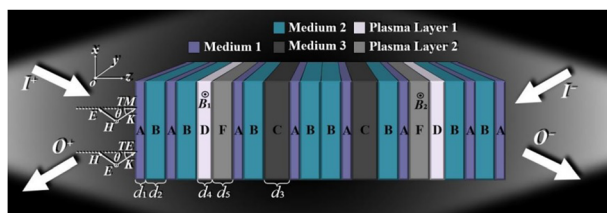
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Controlling polymorph selection during nucleation by tuning the structure of metallic melts

Qi Zhang, Junjie Li, Zhijun Wang and Jincheng Wang*

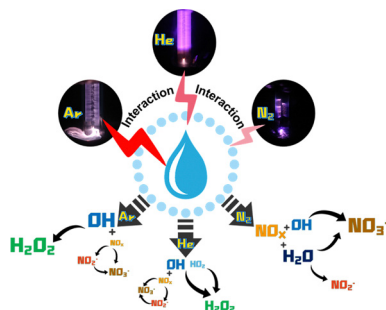
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A theoretical study based on coherent perfect absorption and polarization separation in one-dimensional magnetized plasma photonic crystals

Fu Pei Wu, Jia Tao Zhang and Hai Feng Zhang*

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Repetitive pulsed gas–liquid discharge in different atmospheres: from discharge characteristics to plasma–liquid interactions

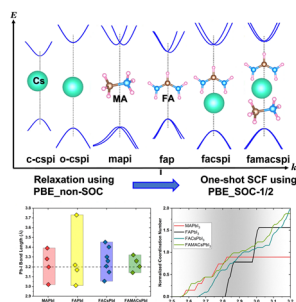
Xu Lu, Li Zhang, Sen Wang* and Zhi Fang



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Electronic and structural properties of mixed-cation hybrid perovskites studied using an efficient spin-orbit included DFT-1/2 approach

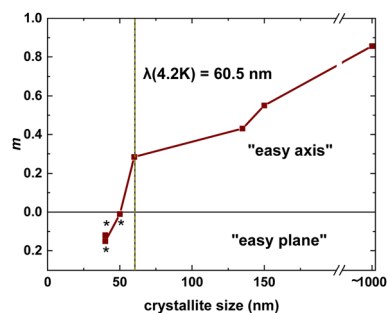
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The size effect of BiFeO₃ nanocrystals on the spatial spin modulated structure

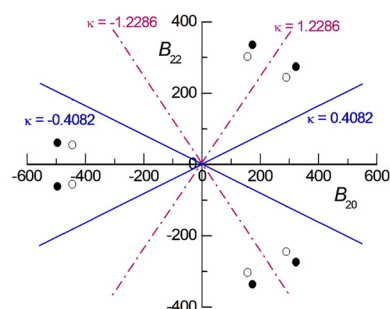
N. E. Gervits,* A. V. Tkachev, S. V. Zhurenko, A. V. Gunbin, A. V. Bogach, N. A. Lomanova, D. P. Danilovich, I. S. Pavlov, A. L. Vasiliev and A. A. Gippius



25537

Eu³⁺ ions as a crystal-field probe for low-symmetry sites in doped phosphors – a case study: Eu³⁺ at triclinic sites in Li₆RE(BO₃)₃ (RE = Y, Gd), YBO₃ and ZnO and at trigonal sites in YAl₃(BO₃)₄

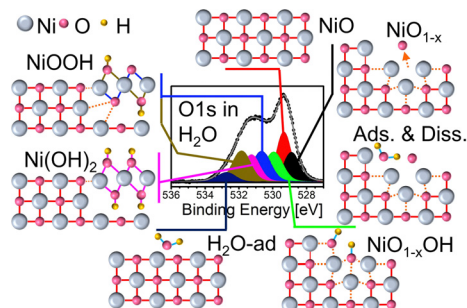
Riti Ghosh, Shankhanil Sarkar, Yatramohan Jana,* Danuta Piwowarska, Paweł Gnutek and Czesław Rudowicz



25552

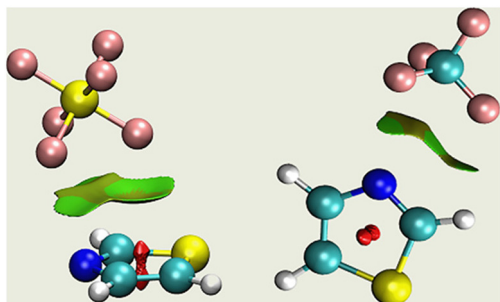
Structural and chemical properties of NiO_x thin films: the role of oxygen vacancies in NiOOH formation in a H₂O atmosphere

A. Raoul Blume,* Wolfram Calvet, Aliakbar Ghafari, Thomas Mayer, Axel Knop-Gericke and Robert Schlögl



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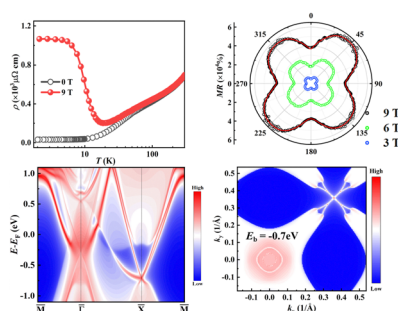
25566



Noncovalent interactions of aromatic heterocycles: rotational spectroscopy and theoretical calculations of the thiazole–CF₄ and thiazole–SF₆ complexes

Tingting Yang, Yugao Xu, Zhen Wang, Chunmei Feng and Gang Feng*

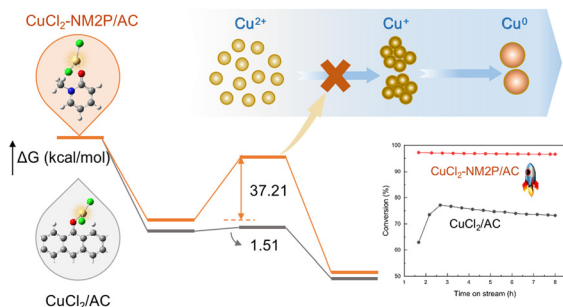
25573



Anisotropic magnetoresistance and electronic features of the candidate topological compound praseodymium monobismuthide

F. Tang, Y. Chen, X.-L. Ge, W.-Z. Meng, Z.-D. Han, B. Qian, W. Zhao, X.-F. Jiang, Y. Fang* and S. Ju*

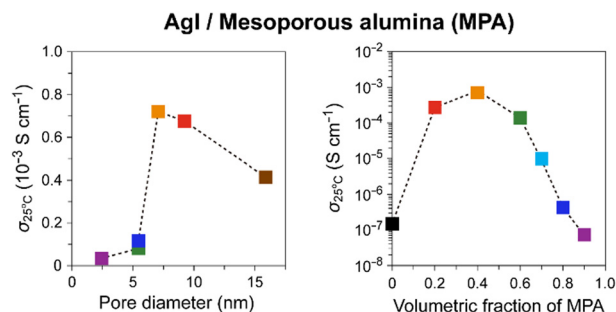
25581



Efficient and stable N-heterocyclic ketone–Cu complex catalysts for acetylene hydrochlorination: the promotion effect of ligands revealed from DFT calculations

Yilin Zhang, Sen Li, Xianliang Qiao, Qingxin Guan* and Wei Li*

25594



Systematic study of ionic conduction in silver iodide/mesoporous alumina composites 1: effects of pore size and filling level

Yoko Fukui,* Yukihiko Yoshida,* Hiroshi Kitagawa and Yohei Jikihara

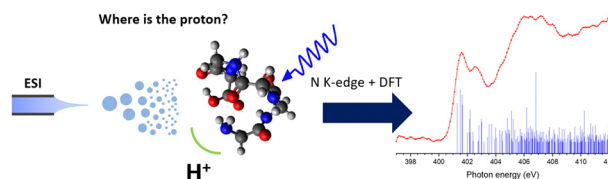


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25603

Mapping the electronic transitions of protonation sites in peptides using soft X-ray action spectroscopy

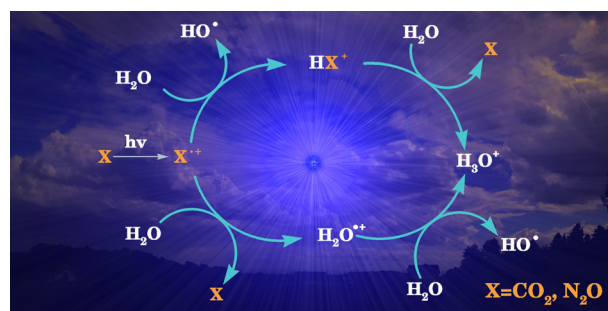
Juliette Leroux,* Amir Kotobi, Konstantin Hirsch, Tobias Lau, Carlos Ortiz-Mahecha, Dmitrii Maksimov, Robert Meißner, Bart Oostenrijk, Mariana Rossi, Kaja Schubert, Martin Timm, Florian Trinter, Isaak Unger, Vicente Zamudio-Bayer, Lucas Schwob and Sadia Bari*



25619

Formation of H_3O^+ and OH^- by CO_2 and N_2O trace gases in the atmospheric environment

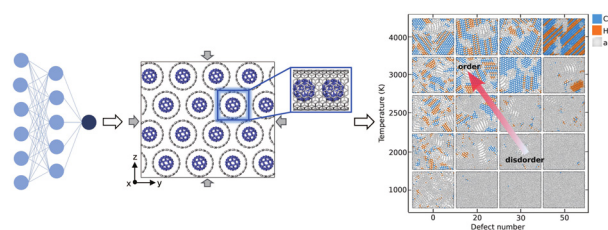
Daniele Catone, Mattea Carmen Castrovilli, Francesca Nicolanti, Mauro Satta* and Antonella Cartoni*



25629

Vacancy defects impede the transition from peapods to diamond: a neuroevolution machine learning study

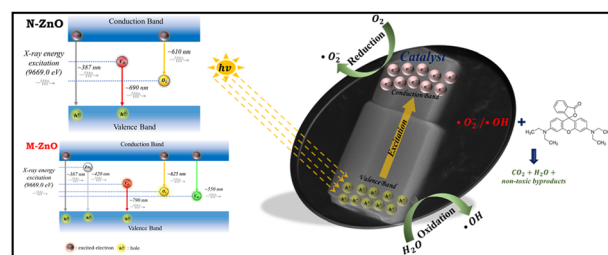
Yu Li and Jin-Wu Jiang*



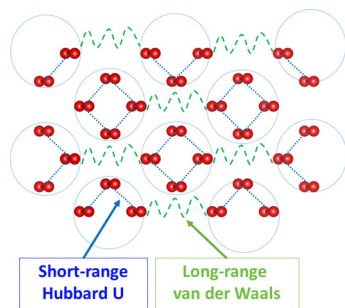
25639

Probing size-dependent defects in zinc oxide using synchrotron techniques: impact on photocatalytic efficiency

Ankit Kadian,* V. Manikandan, Kapil Dev, Vishnu Kumar, Cheng-Jie Yang, Bi-Hsuan Lin, C. L. Chen, C. L. Dong, K. Asokan and S. Annapoorni*



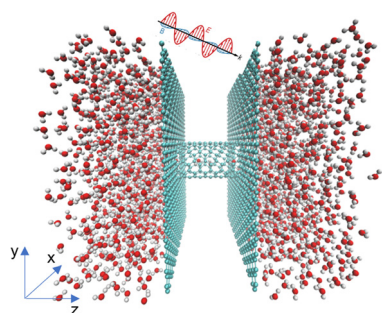
25654



The impact of Hubbard and van der Waals corrections on the DFT calculation of epsilon–zeta transition pressure in solid oxygen

Le The Anh

25659

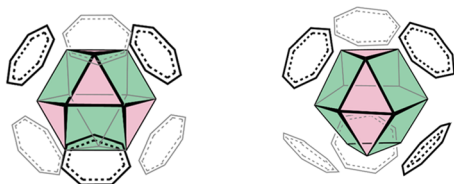


Effect of terahertz electromagnetic field on single-file water transport through a carbon nanotube

Yunzhen Zhao,* Keda Yang and Jiaye Su*

25670

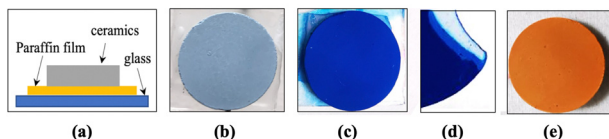
Pd₁₃ Core: Cuboctahedral vs Anti-cuboctahedral



Palladium cluster complex [Pd₁₃(μ₄-C₇H₇)₆]²⁺ (C₇H₇ = tropylium) with an fcc-close-packed cuboctahedral Pd₁₃ core and isomers: theoretical insight into ligand-control of the Pd₁₃ core structure

Bo Zhu, Tetsuro Murahashi* and Shigeyoshi Sakaki*

25681



Hematite photoanodes for water splitting from directed assembly of Prussian blue onto CuO–Sb₂O₅–SnO₂ ceramics

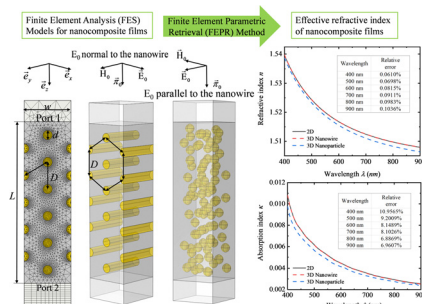
Alexander N. Bondarchuk* and Frank Marken



25689

A novel theoretical method to determine the effective optical properties of high refractive index nanocomposites

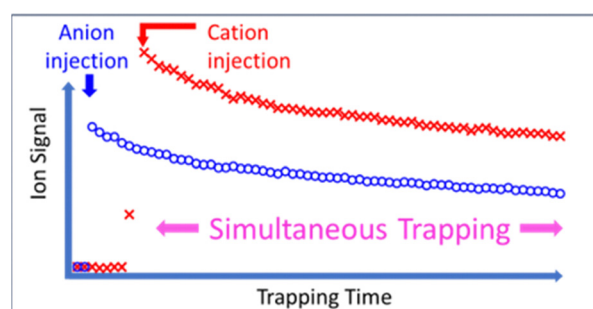
Xiaoning Li, Chengwei Jia, Chengchao Wang,* Lanxin Ma and Linhua Liu*



25701

Simultaneous electrostatic trapping of merged cation & anion beams

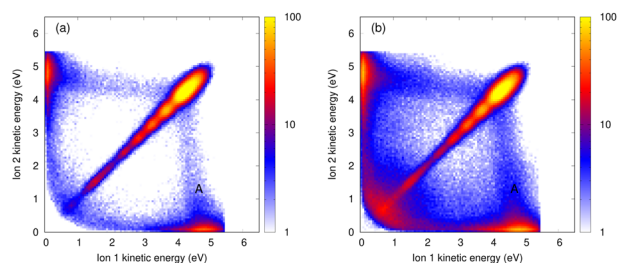
Alon Bogot, Oleg Lioubashevski, Oded Heber, Daniel Zajfman and Daniel Strasser*



25711

Interatomic Coulombic decay in small helium clusters

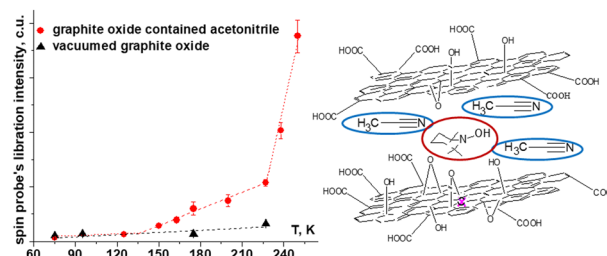
Sévan Kazandjian, Max Kircher, Gregor Kastirke, Joshua B. Williams, Markus Schöffler, Maksim Kunitski, Reinhard Dörner, Tsveta Miteva, Selma Engin, Florian Trinter,* Till Jahnke* and Nicolas Sisourat*



25720

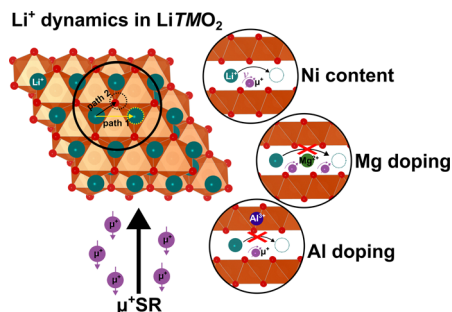
Glass-like behavior of intercalated organic solvents in graphite oxide detected by spin-probe EPR

Victoria N. Syryamina,* Dmitry A. Astvatsaturov, Sergei A. Dzuba and Natalia A. Chumakova



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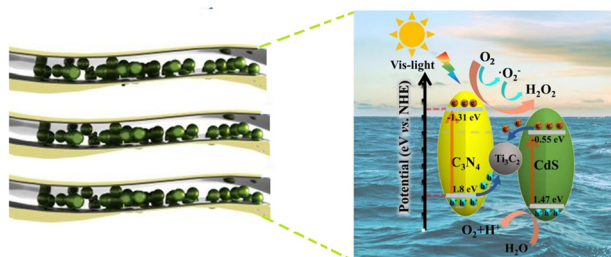
25728



Elucidating local diffusion dynamics in nickel-rich layered oxide cathodes

Beth I. J. Johnston,* Innes McClelland, Peter J. Baker and Serena A. Cussen*

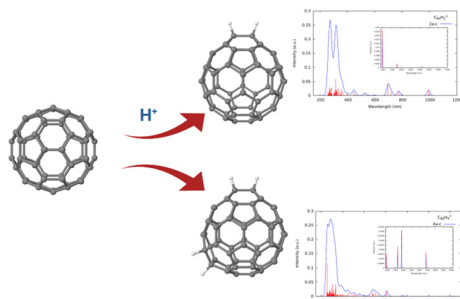
25734



In situ fabrication of Z-scheme C₃N₄/Ti₃C₂/CdS for efficient photocatalytic hydrogen peroxide production

Jianrui Cao, Suyu Zhou, Junhao Cai, Junhe Han, Junhui Liu,* Ruoping Li and Mingju Huang*

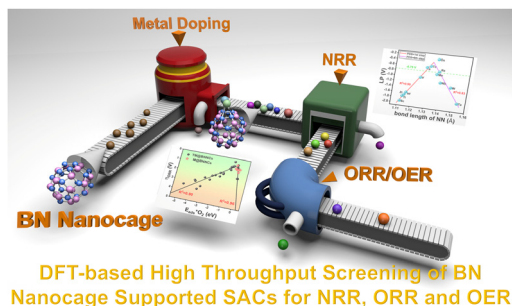
25746



Gas-phase C₆₀H_n^{+q} (n = 0–4, q = 0,1) fullerenes and fulleranes: spectroscopic simulations shed light on cosmic molecular structures

Ricardo R. Oliveira,* Germán Molpeceres,* Ricardo Montserrat, Felipe Fantuzzi, Alexandre B. Rocha and Johannes Kästner

25761



d- and p-Block single-atom catalysts supported by BN nanocages toward electrochemical reactions of N₂ and O₂

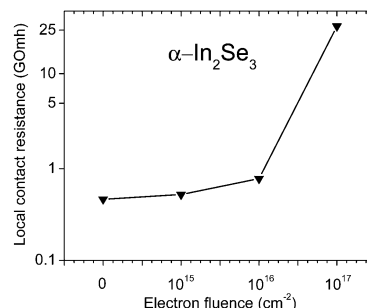
Chenhui Wang, Fan Huang, Haikuan Liang, Wei Nong, Fei Tian,* Yan Li* and Chengxin Wang



25772

Effect of 10 MeV electron irradiation on the electrical properties of bulk α - In_2Se_3 crystals

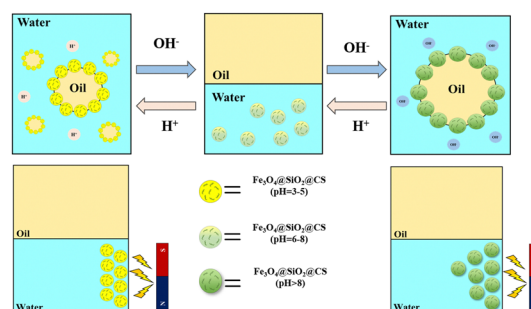
Alexey D. Lobanov,* Yulia V. Korkh, Evgeny I. Patrakov, Vasily S. Gaviko, Maxim N. Sarychev, Vladimir Yu. Ivanov and Tatyana V. Kuznetsova



25780

pH/magnetic dual responsive Pickering emulsion stabilized by $\text{Fe}_3\text{O}_4@ \text{SiO}_2@ \text{chitosan}$ nanoparticles

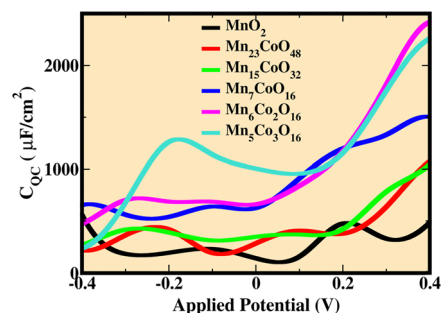
Runna He, Shuangqing Sun,* Jianpeng Cui, Mingshuo Chi, Zhikun Wang and Songqing Hu



25789

Theoretical investigation of quantum capacitance of Co-doped α - MnO_2 for supercapacitor applications using density functional theory

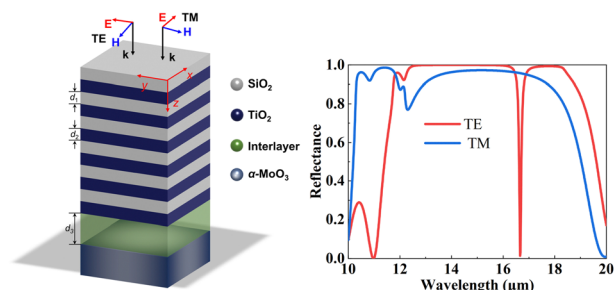
Ariya K. Vijayan, Sreehari M. S, Simran Kour, Saptarshi Ghosh Dastider, Krishnakanta Mondal and A. L. Sharma*



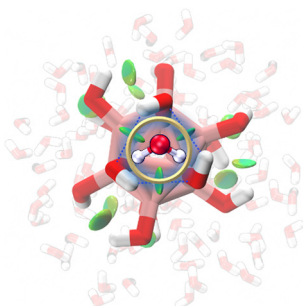
25803

A polarization-dependent perfect absorber with high Q-factors enabled by Tamm phonon polaritons in hyperbolic materials

Didi Song, Biyuan Wu, Yufang Liu, Xiaohu Wu* and Kun Yu*



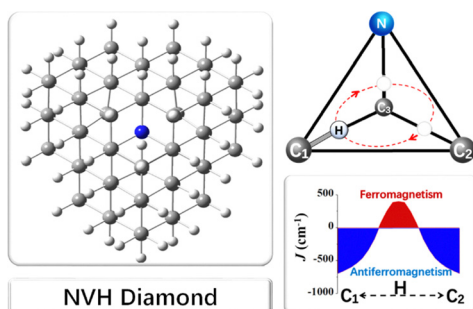
25810



Locking water molecules *via* ternary O–H...O intramolecular hydrogen bonds in perhydroxylated *closo*-dodecaborate

Yanrong Jiang, Zhubin Hu, Cheng Zhong, Yan Yang, Xue-Bin Wang, Zhenrong Sun, Haitao Sun,* Zhi Liu* and Peng Peng*

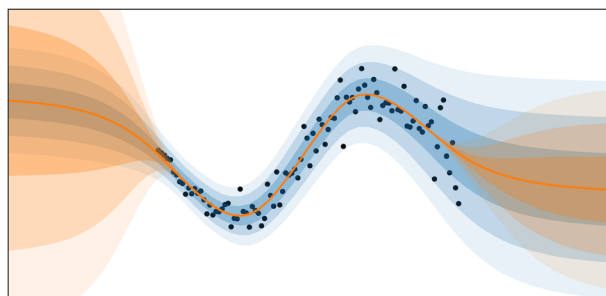
25818



Hydrogen-migration governed dynamic magnetic coupling characteristics in nitrogen-vacancy-hydrogen nanodiamonds

Yamin Song, Xuexing Lin, Shaofen Yu, Yuxiang Bu and Xinyu Song*

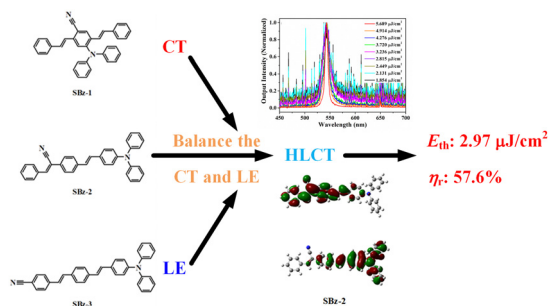
25828



Graph neural network interatomic potential ensembles with calibrated aleatoric and epistemic uncertainty on energy and forces

Jonas Busk,* Mikkel N. Schmidt, Ole Winther, Tejs Vegge and Peter Bjørn Jørgensen

25838



Tailoring D–π–A architectures with hybridized local and charge transfer fluorophores exhibiting high electroluminescence exciton utilization and low threshold amplified spontaneous emission

Lin Ma, Yue Yu,* Daokun Zhong, Chunrong Zhu, Xiaolong Yang, Zhao Feng, Guijiang Zhou* and Zhaoxin Wu*

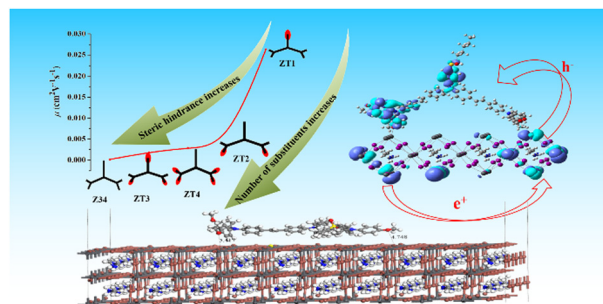


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25850

Effect of steric hindrance and number of substituents on the transfer and interface properties of Y-shaped hole-transporting materials for perovskite solar cells

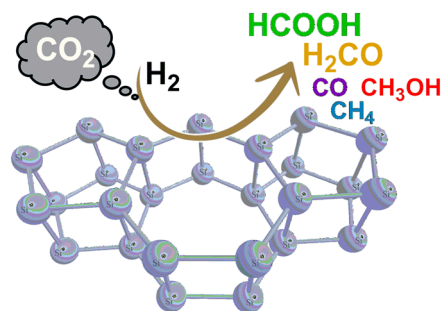
Zemin Zhang,* Zetian Tang, Keliang Wang,* Ping Wang and Jianfa Yang



25862

Enhancing CO₂ reduction through the catalytic effect of a novel silicon haeckelite-inspired 2D material

Wilmer Esteban Vallejo Narváez,* Cesar Gabriel Vera de la Garza and Serguei Fomine*



25871

Investigating the influence of substituent groups in TTM based radicals for the excitation process: a theoretical study

Lu-ran Fei, Jian Wang, Fu-quan Bai, Shi-ping Wang, Bin Hu, Chui-peng Kong* and Hong-xing Zhang*

