

IN THIS ISSUE

ISSN 1463–9076 CODEN PPCPFQ 25(15) 10189–11002 (2023)



Cover

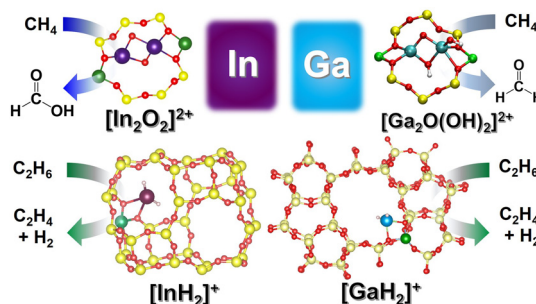
See Marta Pineiro *et al.*, pp. 10263–10277. Image reproduced by permission of Marta Pineiro from *Phys. Chem. Chem. Phys.*, 2023, 25, 10263.

PERSPECTIVES

10211

In- and Ga-oxo clusters/hydrides in zeolites: speciation and catalysis for light-alkane activations/transformations

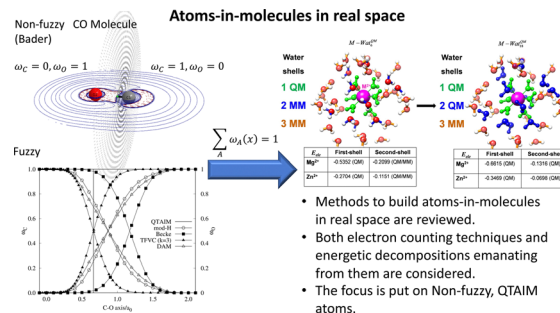
Huang Mengwen, Shinsaku Yasumura, Takashi Toyao, Ken-ichi Shimizu and Zen Maeno*



10231

Atoms in molecules in real space: a fertile field for chemical bonding

Ángel Martín Pendás,* Evelio Francisco, Dimas Suárez, Aurora Costales, Natalia Díaz, Julen Munárriz, Tomás Rocha-Rinza and José Manuel Guevara-Vela



- Methods to build atoms-in-molecules in real space are reviewed.
- Both electron counting techniques and energetic decompositions emanating from them are considered.
- The focus is put on Non-fuzzy, QTAIM atoms.



Editorial Staff

Executive Editor

Michael A. Rowan

Deputy Editor

Vikki Pritchard

Development Editors

Bee Hockin, Andrea Carolina Ojeda Porras

Editorial Production Manager

Gisela Scott

Senior Publishing Editor

Robin Brabham

Publisher

Jeanne Andres

Publishing Editors

Catherine Au, Isobel Darlington, Konoya Das, Alexandre Dumon, Amy Lucas, Charlotte Pugsley, Hugh Ryan

Publishing Assistant

Robert Griffiths

Editorial Assistant

Daphne Houston

For queries about submitted papers, please contact Gisela Scott, Editorial Production Manager, in the first instance. E-mail: pccp@rsc.org

For pre-submission queries, please contact

Michael A. Rowan, Executive Editor.

Email: pccp-rsc@rsc.org

PCCP (electronic ISSN 1463-9084) is published 48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK.

All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to the Royal Society of Chemistry Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF, UK.

Tel +44 (0)1223 432398; E-mail: orders@rsc.org

2023 Annual (electronic) subscription price: £4448; US\$7835.

Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT.

If you take an institutional subscription to any Royal Society of Chemistry journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at www.rsc.org/ip

Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank.

Whilst this material has been produced with all due care, the Royal Society of Chemistry cannot be held responsible or liable for its accuracy and completeness, nor for any consequences arising from any errors or the use of the information contained in this publication. The publication of advertisements does not constitute any endorsement by the Royal Society of Chemistry or Authors of any products advertised. The views and opinions advanced by contributors do not necessarily reflect those of the Royal Society of Chemistry which shall not be liable for any resulting loss or damage arising as a result of reliance upon this material. The Royal Society of Chemistry is a charity, registered in England and Wales, Number 207890, and a company incorporated in England by Royal Charter (Registered No. RC000524), registered office: Burlington House, Piccadilly, London W1J 0BA, UK. Telephone: +44 (0) 207 4378 6556.

Advertisement sales:

Tel +44 (0) 1223 432246;

Fax +44 (0) 1223 426017;

E-mail advertising@rsc.org

For marketing opportunities relating to this journal, contact marketing@rsc.org

PCCP

Physical Chemistry Chemical Physics – An international journal

rsc.li/pccp

PCCP is an international journal for the publication of original research papers, Communications and Perspective articles in the areas of physical chemistry, chemical physics and biophysical chemistry.

Owner Societies

Canadian Society for Chemistry
Deutsche Bunsen-Gesellschaft für
Physikalische Chemie
Institute of Chemistry of Ireland
Israel Chemical Society
Kemisk Forenin
Koninklijke Nederlandse Chemische
Vereniging

Korean Chemical Society
New Zealand Institute of Chemistry
Norsk Kjemisk Selskap
Österreichische Physikalische Gesellschaft
Polskie Towarzystwo Chemiczne
Real Sociedad Española de Química
Royal Australian Chemical Institute
Incorporated

Royal Society of Chemistry
Società Chimica Italiana
Suomen Kemian Seura – Kemiska Sällskapet
I Finland
Svenska Kemisamfundet
Swiss Chemical Society
Türkiye Kimya Derneği

Honorary Board

G Ertl, Berlin, Germany
B Feringa, University of Groningen,
Netherlands
S W Hell, Max Planck Institute for Biophysical
Chemistry, Germany
J Jortner, Tel Aviv, Israel
M Karplus, Harvard University, USA

K Kohse-Hoeinghaus, Universitaet Bielefeld,
Germany
Y T Lee, Academia Sinica, Taiwan
W H Miller, Berkeley, USA
E Neher, Max Planck Institute for Biophysical
Chemistry, Germany
J Polanyi, Toronto, Canada

H Schwarz, Technische Universität Berlin,
Germany
J P Simons, University of Oxford, UK
G A Somorjai, University of California,
Berkeley, USA
J Troe, GWDG, Germany
R N Zare, Stanford, USA

Editorial Board

B Albinsson, Chalmers University of
Technology, Sweden
I Bañares, Universidad Complutense de
Madrid, Spain
M Curri, University of Bari, Italy
C Daniel, Institute of Chemistry, University of
Strasbourg, France
K Gordon, University of Otago, New Zealand

J Janek, Justus Liebig University Giessen,
Germany
H Kondoh, Keio University, Japan
A Krylov, University of Southern California,
USA
P Maiti, Indian Institute of Science, India
R Naaman, Weizmann Institute of Science,
Israel

A Rijs, Vrije Universiteit Amsterdam,
The Netherlands (Chair)
H Schaefer III, University of Georgia, USA
(Deputy Chair)
I Tamblin, University of Ottawa, Canada
Y Xu, University of Alberta, Canada
J Zhang, New York University Shanghai, China

Advisory Board

C Adamo, ENSCP - Chimie ParisTech, France
H Ågren, KTH Royal Institute of Technology,
Sweden
K Ariga, National Institute for Materials
Science, Japan
P Ayers, McMaster University, Canada
A Ajayaghosh, CSIR-National Institute for
Interdisciplinary Science and Technology
(NIIST), India
P Baglioni, University of Florence, Italy
V Barone, Scuola Normale Superiore di Pisa,
Italy
M Biczysko, Shanghai University, China
E Bieske, University of Melbourne, Australia
J Biteen, University of Michigan, USA
D Casanova, Donostia International Physics
Center, Spain
P Casavecchia, University of Perugia, Italy
O Christiansen, University of Aarhus, Denmark
G A Cisneros, University of North Texas, USA
S Coriani, Technical University of Denmark,
Denmark
M DeVries, University of California Santa
Barbara, USA
C Diaz, Universidad Complutense de Madrid,
Spain
J Dupont, University of Nottingham, UK
S Faraji, University of Groningen, Netherlands
D Frenkel, University of Cambridge, UK
A Fujii, Tohoku University, Japan

S George, Jawaharlal Nehru Centre for
Advanced Scientific Research (JNCASR), India
R B Gerber, Hebrew University Jerusalem,
Israel
D Ghosh, Indian Association for the
Cultivation of Science, India
D Goldfarb, Weizmann Institute of Science,
Israel
S Grimme, University of Bonn, Germany
M Havenith, Ruhr-University Bochum,
Germany
K Holmberg, Chalmers University of
Technology, Sweden
Y Iwasawa, University of Tokyo, Japan
D Jacquemin, Université de Nantes, France
T Jagau, KU Leuven, Belgium
E Johnson, Dalhousie University, Canada
J MacPherson, University of Warwick, UK
S Matsika, Temple University, USA
H Mattoussi, Florida State University, USA
G Meijer, Fritz-Haber-Institut der Max-Planck-
Gesellschaft, Germany
F Neese, Max Planck Institute for Chemical
Energy Conversion, Germany
D Nesbitt, University of Colorado, USA
D Neumaier, University of California, Berkeley,
USA
M Orozco, IRB Barcelona - Parc Científic de
Barcelona, Spain
K Pas, Monash University, Australia

G Patwari, Indian Institute of Technology
Bombay, India
M-P Pileni, Université Pierre et Marie Curie,
France
M Pummer, Nanyang Technological University,
Singapore
P Pyykkö, University of Helsinki, Finland
M Rodgers, Wayne State University, USA
S Sampath, Indian Institute of Science
Bangalore, India
R Signorell, ETH Zurich, Switzerland
T Schmidt, University of New South Wales,
Australia
M Suhm, University of Göttingen, Germany
A Suits, University of Missouri, USA
D Sundholm, University of Helsinki, Finland
T Suzuki, Kyoto University, Japan
A Troisi, University of Warwick, UK
S Vega, Weizmann Institute of Science, Israel
D Waldeck, University of Pittsburgh, USA
L J Wan, Institute of Chemistry, Chinese
Academy of Sciences, China
B Weckhuyzen, Utrecht University,
The Netherlands
X Yang, Dalian Institute of Chemical Physics,
Chinese Academy of Sciences, China
A Zehnacker-Rentien, Université Paris, France

Information for Authors

Full details on how to submit material for publication in PCCP are given in the Instructions for Authors (available from <http://www.rsc.org/authors>). Submissions should be made via the journal's homepage: rsc.li/pccp

Authors may reproduce/republish portions of their published contribution without seeking permission from the Royal Society of Chemistry, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)–Reproduced by permission of the Royal Society of Chemistry.

This journal is © the Owner Societies.

Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted

under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulation 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US copyright law is applicable to users in the USA.

© The paper used in this publication meets the requirements of ANSI/NISO Z39.48–1992 (Permanence of Paper).

Registered charity number: 207890

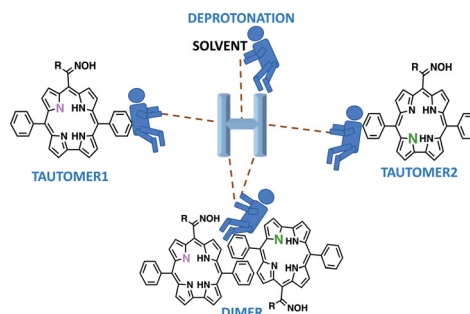


RESEARCH PAPERS

10263

The role of solvents and concentrations in the properties of oxime bearing A₂B corroles

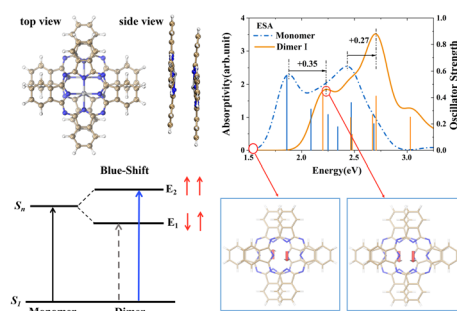
Ana Clara B. Rodrigues, Susana M. M. Lopes, Carla Cunha, João Braz, Teresa M. V. D. Pinho e Melo, J. Sérgio Seixas de Melo and Marta Pineiro*



10278

Effects of aggregation on the structures and excited-state absorption for zinc phthalocyanine

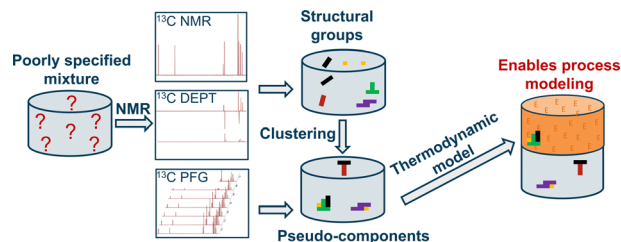
Hongjuan Zhu, Danyang Zhang, Eryin Feng and Xiaowei Sheng*



10288

Rational method for defining and quantifying pseudo-components based on NMR spectroscopy

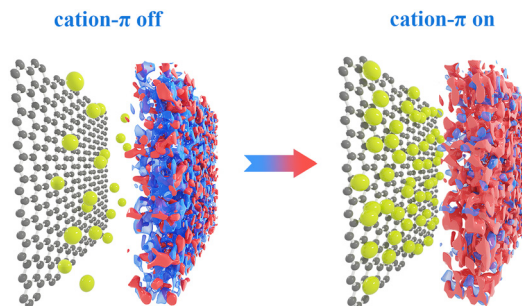
Thomas Specht, Kerstin Münnemann, Hans Hasse and Fabian Jirasek*



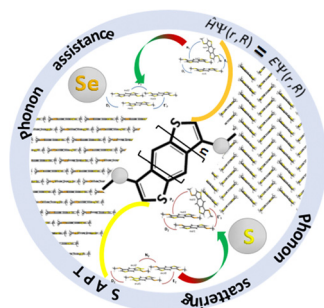
10301

The evolution of anionic nanoclusters at the electrode interface in water-in-salt electrolytes

Lei Zhang, Yuanxi Yu, Liumin Suo, Wei Zhuang, Lunhua He, Xiaohua Zhang,* Liang Hong* and Pan Tan*



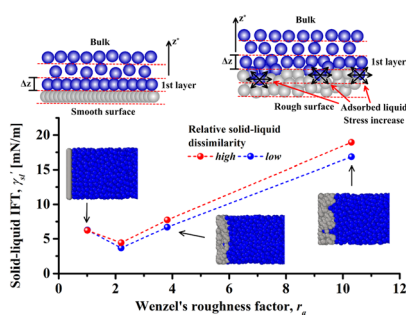
10313



Theoretical study of the tuning role of β -methylthio or β -methylselenyl on the charge-transport properties of acenedithiophenes derivatives

Hui-Yuan Li, Gui-Ya Qin, Pan-Pan Lin, Xiao-Qi Sun, Jian-Xun Fan, Rui Wang, Hui Li, Lu-Yi Zou, Jing-Fu Guo and Ai-Min Ren*

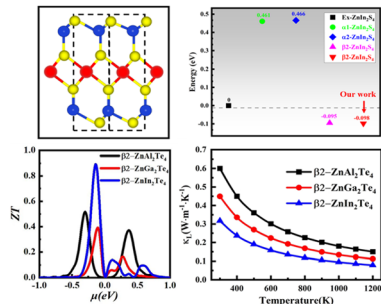
10325



The effective interfacial tensions between pure liquids and rough solids: a coarse-grained simulation study

J. D. Hernández Velázquez,* G. Sánchez-Balderas, A. Gama Goicochea and E. Pérez*

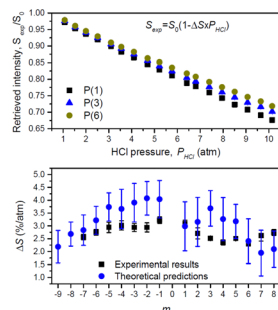
10335



High mobility and excellent thermoelectric performance monolayer ZnX_2Z_4 ($\text{X} = \text{In}, \text{Al}, \text{Ga}$; $\text{Z} = \text{S}, \text{Se}, \text{Te}$) materials

Li Shi, Chunyan Lv,* Haoran Wei, Wangping Xu,* Rui Wang, Jing Fan and Xiaozhi Wu*

10343



Pressure dependence of the measured line intensity and super-Lorentzian effects in the absorption spectra of pure HCl

Ha Tran,* Gang Li, Ngoc Hoa Ngo and Volker Ebert

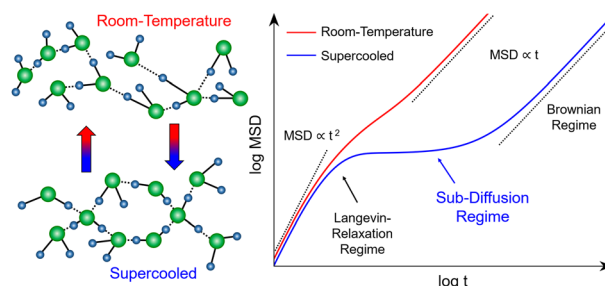


RESEARCH PAPERS

10353

Topology induced crossover between Langevin, subdiffusion, and Brownian diffusion regimes in supercooled water

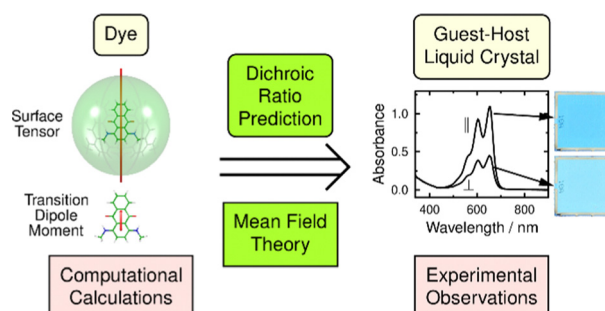
Kaicheng Zhu, Saber Naserifar,
William A. Goddard III* and Haibin Su*



10367

Dyes for guest–host liquid crystal applications: a general approach to the rapid computational assessment of useful molecular designs

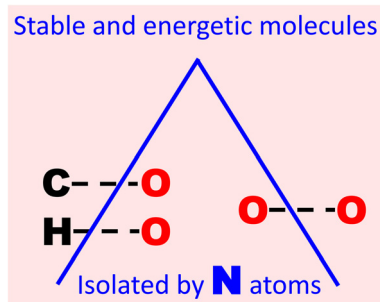
Mark T. Sims, Laurence C. Abbott, Richard J. Mandle,
John W. Goodby and John N. Moore*



10384

Simple rule for linking atoms to construct high energy isomers

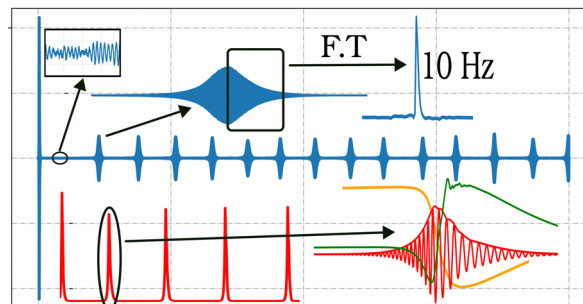
Rong Wang and Chaoyang Zhang*



10392

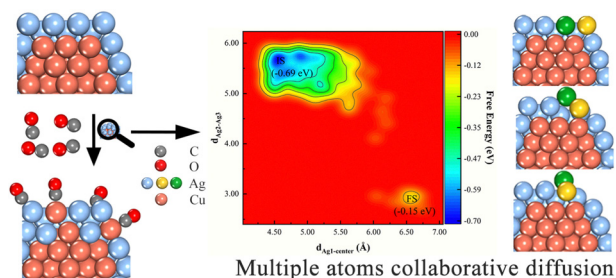
Dipolar field effects in a solid-state NMR maser pumped by dynamic nuclear polarization

Vineeth Francis Thalakkottoor Jose Chacko and
Daniel Abergel*



RESEARCH PAPERS

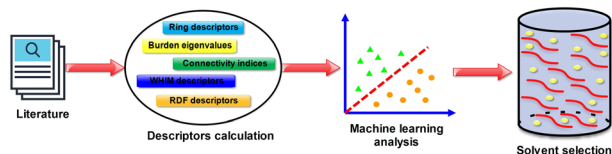
10405



A collaborative diffusion mechanism of multiple atoms during Cu–Ag bimetal surface reconstruction

Xue Yan, Xiangxiang Wang, Jingli Han, Xiangjian Du, Zhongyi Liu and Yongpeng Yang*

10417

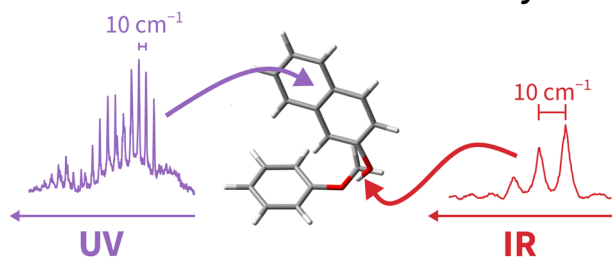


Easy and fast prediction of green solvents for small molecule donor-based organic solar cells through machine learning

Asif Mahmood, Yahya Sandali and Jin-Liang Wang*

10427

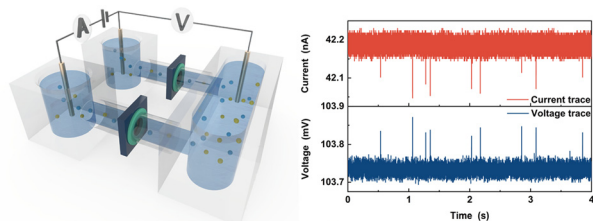
Dual Franck-Condon activity



Subtle hydrogen bond preference and dual Franck–Condon activity – the interesting pairing of 2-naphthol with anisole

Arman Nejad,* Ariel F. Pérez Mellor, Manuel Lange, Ivan Alata, Anne Zehnacker and Martin A. Suhm

10440



Detection of DNA translocations in a nanopore series circuit using a current clamp

Fei Zheng, Yi Tao, Wei Xu and Jingjie Sha*

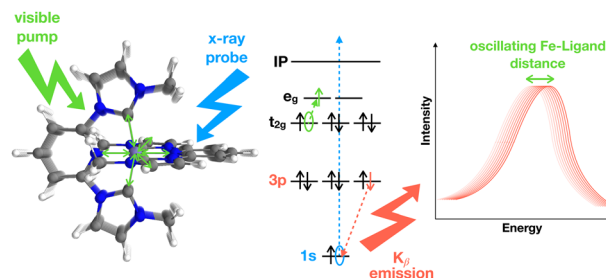


RESEARCH PAPERS

10447

Sensitivity of K β mainline X-ray emission to structural dynamics in iron photosensitizer

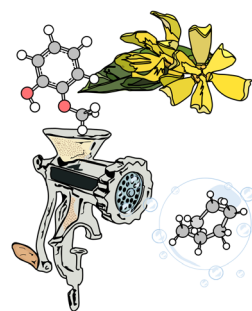
Johanna Rogvall, Roshan Singh, Morgane Vacher* and Marcus Lundberg*



10460

DFT insights into competing mechanisms of guaiacol hydrodeoxygenation on a platinum cluster

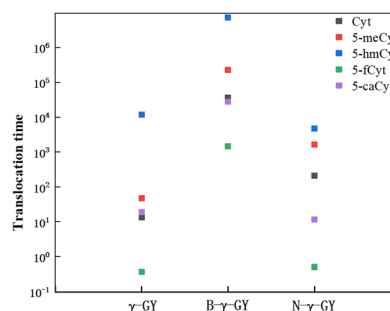
Chiara Nania, Marco Bertini, Laura Gueci, Francesco Ferrante* and Dario Duca



10472

***Ab initio* studies on graphyne (GY) for the detection of rare bases in DNA**

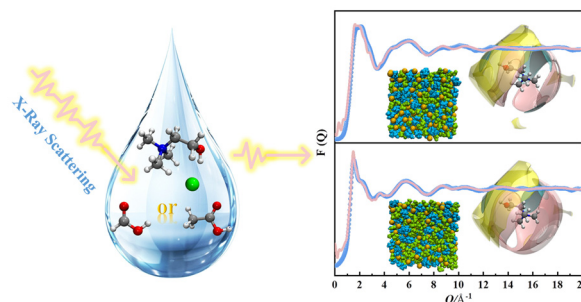
Mengdan Lv, Ruirui Li, Xia Zeng, Lingxia Jin,* Caibin Zhao, Yanhong Gao, Min Jiang, Gongwei Qin, Chen Li and Shengrui Zhang*



10481

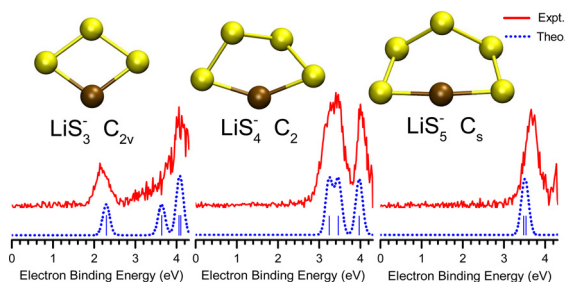
Structure of choline chloride-carboxylic acid deep eutectic solvents by wide-angle X-ray scattering and DFT calculations

Keke Chai, Yongquan Zhou,* Xingmei Lu, Toshio Yamaguchi, Koji Ohara, Hongyan Liu and Fayan Zhu



RESEARCH PAPERS

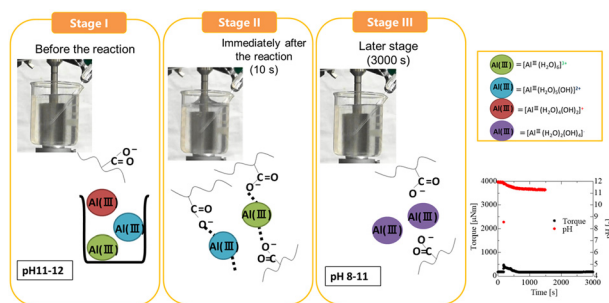
10495



Structures and bonding properties of lithium polysulfide clusters $\text{LiS}_n^{-/0}$ ($n = 3-5$) and $\text{Li}_2\text{S}_4^{-/0}$: size-selected anion photoelectron spectroscopy and theoretical calculations

Zhen-Chao Long, Zhi-You Wei, Kai-Wen Liu, Xi-Long Li, Xi-Ling Xu, Hong-Guang Xu and Wei-Jun Zheng*

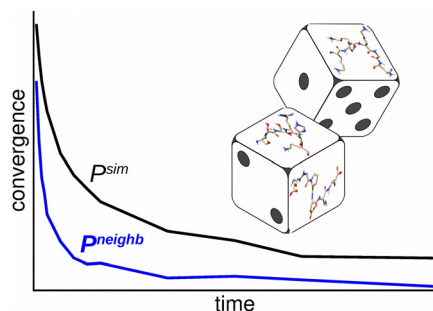
10504



Unpredictable polymeric flow dynamics with reaction between HPAM and Al^{3+} by comparison between pre- and post-reaction fluid properties

Sae Hirano, Yuichiro Nagatsu, Ryuta X. Suzuki and Jun Iijima*

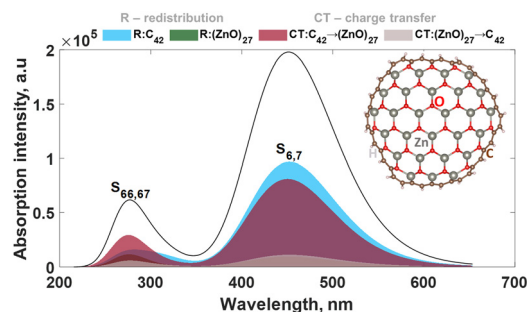
10512



Description of conformational ensembles of disordered proteins by residue-local probabilities

Adolfo Bastida*, José Zúñiga, Beatriz Miguel and Miguel A. Soler*

10525



Nature of photoexcited states in ZnO-embedded graphene quantum dots

Ivan Shtepliuk* and Rositsa Yakimova

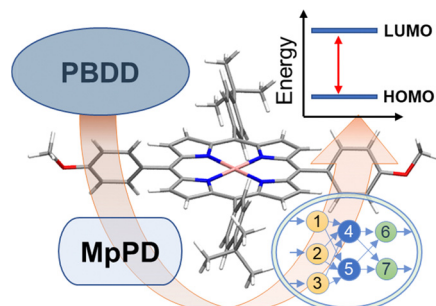


RESEARCH PAPERS

10536

Deep transfer learning for predicting frontier orbital energies of organic materials using small data and its application to porphyrin photocatalysts

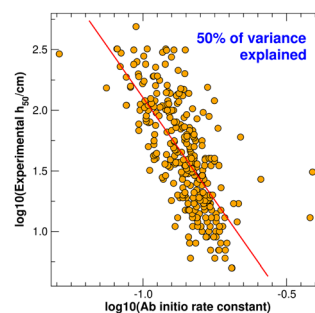
An Su,* Xin Zhang, Chengwei Zhang, Debo Ding, Yun-Fang Yang, Keke Wang and Yuan-Bin She*



10550

Impact sensitivities of energetic materials derived from easy-to-compute *ab initio* rate constants

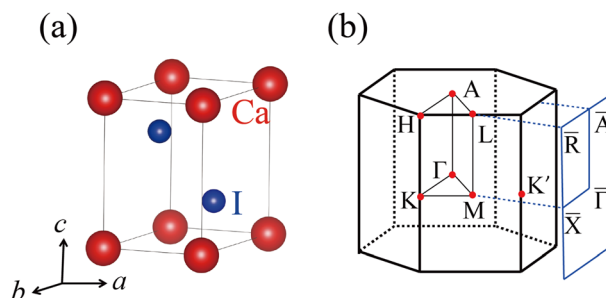
Romain Claveau, Julien Glorian and Didier Mathieu*



10561

Straight and twisted open nodal-line phonon states in the CaI_2 family of materials

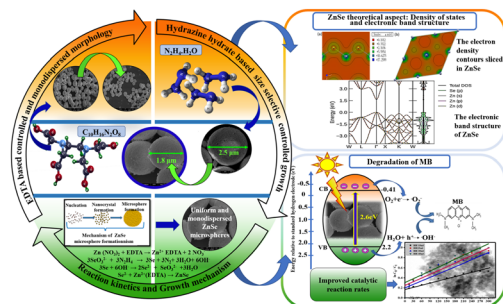
Meng-Xin Wu, Da-Shuai Ma,* Tie Yang, Yu-Hao Wei, Ke Chai, Peng Wang, Biao Wang and Min-Quan Kuang*



10567

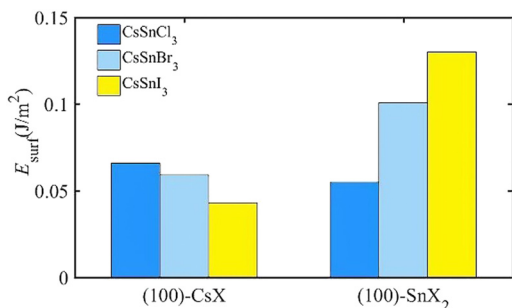
Controlled synthesis of monodispersed ZnSe microspheres for enhanced photo-catalytic application and its corroboration using density functional theory

Prachi Chopade, Vikas Kashid, Niteen Jawale, Sunit Rane, Shweta Jagtap,* Anjali Kshirsagar and Suresh Gosavi*



RESEARCH PAPERS

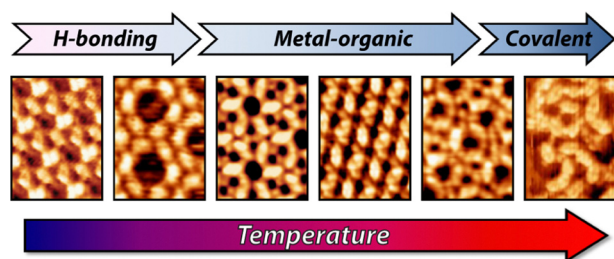
10583



Surface energy and surface stability of cesium tin halide perovskites: a theoretical investigation

Yan-Jin Chen, Chunju Hou and Yi Yang*

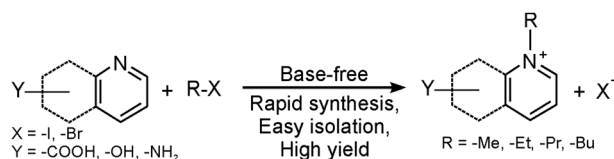
10591



Self-assembly of *s*-indacene-tetrone on Cu(111): molecular trapping and patterning of Cu adatoms

Nataliya Kalashnyk, Adam Hassan Denawi, Frédéric Dumur, Didier Gigmes, Xavier Bouju* and Sylvain Clair*

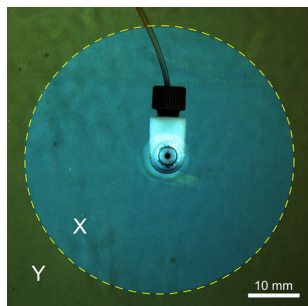
10599



Ground-state intramolecular proton transfer inhibits the selective methylation on quinoline and pyridine derivatives

Supphachok Chanmungkalakul, Shiqing Huang, Xia Wu, Esther Cai Xia Ang, Zi-Qi Yang, Yongxin Li, Xiaoyu Yan, Choon-Hong Tan, Davin Tan* and Xiaogang Liu*

10604



Effect of radial advection on autocatalytic reaction–diffusion fronts

Alessandro Comolli, L. Negrojević, Fabian Brau and A. De Wit*

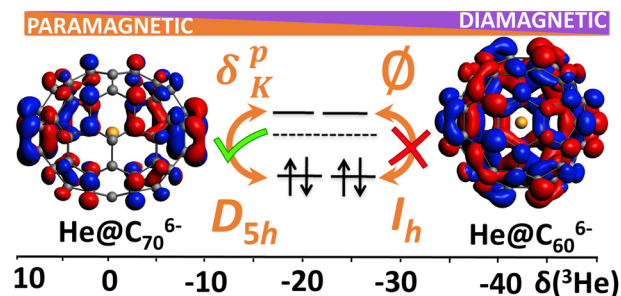


RESEARCH PAPERS

10620

The essential role of symmetry in understanding ^3He chemical shifts in endohedral helium fullerenes

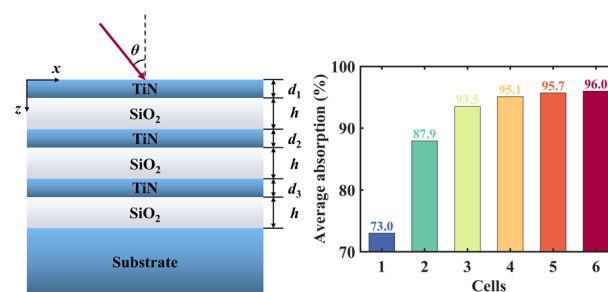
Jan Vicha,* Juha Vaara* and Michal Straka



10628

Pattern-free solar absorber driven by superposed Fabry–Perot resonances

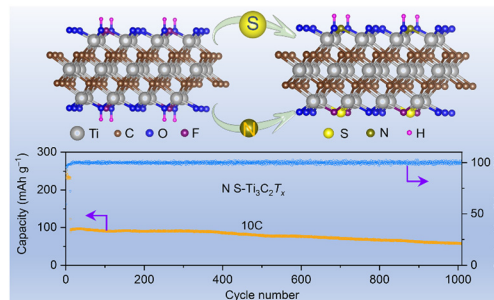
Haotuo Liu, Kun Yu, Kaihua Zhang, Qing Ai,* Ming Xie and Xiaohu Wu*



10635

Nitrogen and sulfur co-doped $\text{Ti}_3\text{C}_2\text{T}_x$ MXenes for high-rate lithium-ion batteries

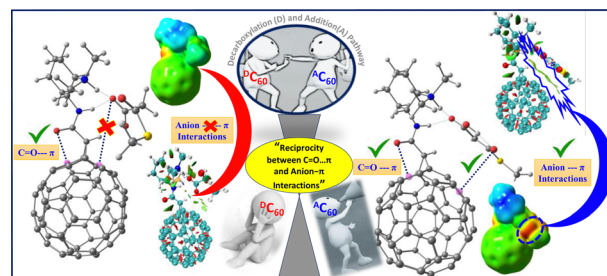
Renfei Cheng, Tao Hu, Jinxing Yang, Zuohua Wang, Weizhen Wang, Yan Liang, Zhiqing Yang, Hongwang Zhang and Xiaohui Wang*



10647

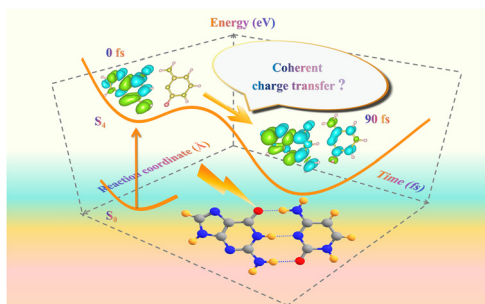
Reciprocity of $\text{C}=\text{O} \cdots \pi$ interactions with the dominant anion– π on fullerene (C_{60})– amine-based organocatalysts: a mechanistic elucidation for addition vs. decarboxylation reaction

Murugesan Panneerselvam, Hiregange Akash and Archita Patnaik*



RESEARCH PAPERS

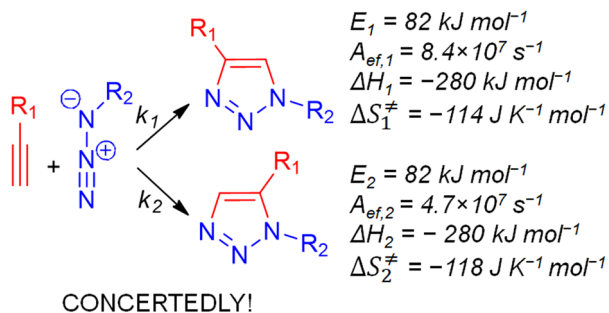
10661



The dynamical temporal behaviors of guanine–cytosine coherent charge transfer

Lixia Zhu, Qiao Zhou, Yongfeng Wan, Qi Li, Yu Wan, Hang Yin and Ying Shi*

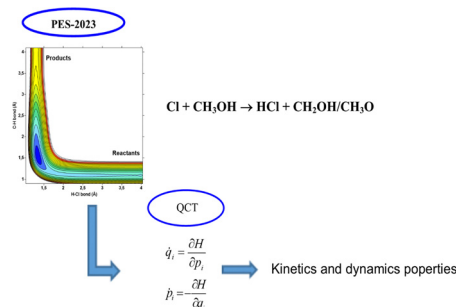
10671



Probing kinetic and mechanistic features of bulk azide–alkyne cycloaddition

Andrey Galukhin,* Roman Aleshin, Roman Nosov and Sergey Vyazovkin*

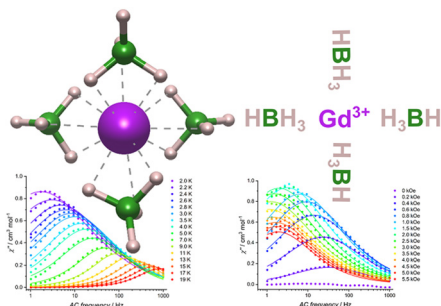
10678



Kinetics and dynamics study of the $\text{Cl}(^2\text{P}) + \text{CH}_3\text{OH}$ reaction based on an analytical potential energy surface

Cipriano Rangel and Joaquin Espinosa-Garcia*

10689



Approaching the free-ion limit in magnetically isotropic gadolinium(III) via borohydride ligands

Michał Magott* and Wojciech Wegner*

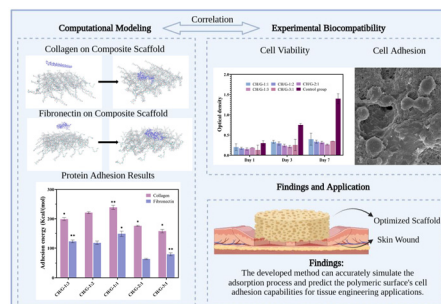


RESEARCH PAPERS

10697

Investigating the correlation between the protein adhesion simulation and the biocompatibility of polymeric substrate for skin-tissue-engineering applications

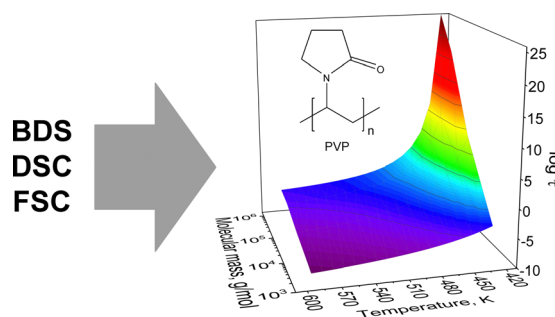
Saeed Seifi, Mohammad Ali Bakhtiari, Hossein Shaygani, Amir Shamloo* and Aram Almasi-Jaf



10706

Some aspects of the glass transition of polyvinylpyrrolidone depending on the molecular mass

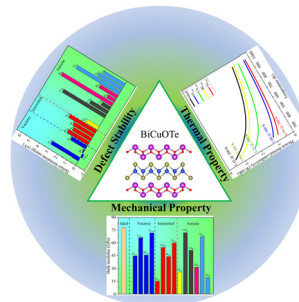
Semen Lapuk, Marina Ponomareva, Marat Ziganshin, Radik Larionov, Timur Mukhametzyanov, Christoph Schick, Ivan Lounev and Alexander Gerasimov*



10715

The effects of point defects on thermal-mechanical properties of BiCuOTe: a first-principles study

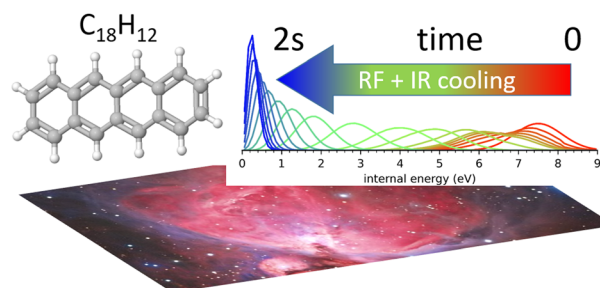
Ming Jiang, Xing-Can Guo, Xiao-Tao Zu* and Chandra Veer Singh*



10726

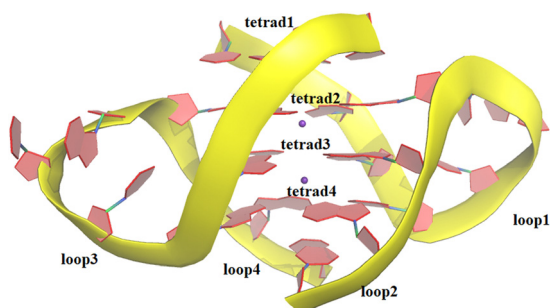
Efficient radiative cooling of tetracene cations $C_{18}H_{12}^+$: absolute recurrent fluorescence rates as a function of internal energy

Jérôme Bernard,* MingChao Ji, Suvasthika Indrajith, Mark H. Stockett, José E. Navarro Navarrete, Naoko Kono, Henrik Cederquist, Serge Martin, Henning T. Schmidt and Henning Zettergren



RESEARCH PAPERS

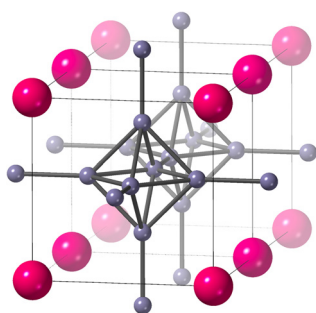
10741



Binding of berberine derivatives to G-quadruplex: insight from a computational study

Mengxin Li, Yalong Cong, Yifei Qi* and John Z. H. Zhang*

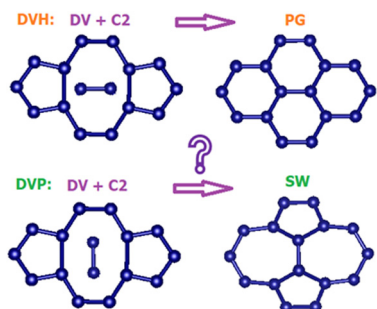
10749



The contribution of phonons to the thermal expansion of some simple cubic hexaboride structures: SmB_6 , CaB_6 , SrB_6 and BaB_6

Li Li, Keith Refson and Martin T Dove*

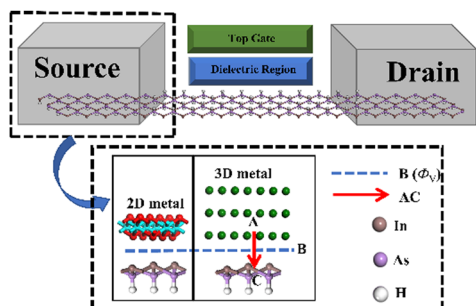
10759



Healing double vacancy defects on graphene: reconstruction by C_2 adsorption

Parisa Alamdari, Farhad Sharif,* Saeedeh Mazinani, German Sastre* and Hermenegildo Garcia

10769



Systematic investigation of the mechanical, electronic, and interfacial properties of high mobility monolayer InAs from first-principles calculations

Wenjing Yu, Jingzhen Li,* Yi Wu, Jing Lu and Yongzhe Zhang*

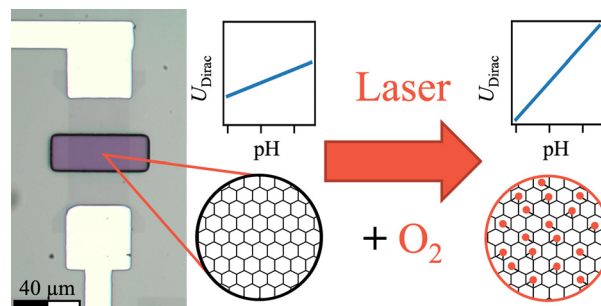


RESEARCH PAPERS

10778

Laser-induced tuning of graphene field-effect transistors for pH sensing

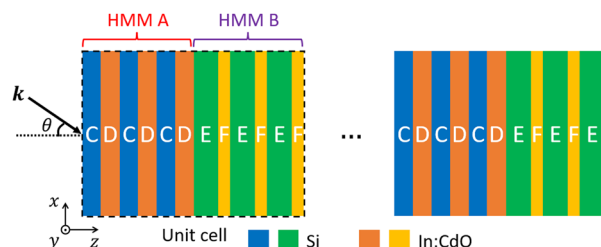
Aku Lampinen, Erich See, Aleksei Emelianov,
Pasi Myllyperkiö, Andreas Johansson and
Mika Pettersson*



10785

A redshifted photonic bandgap and wide-angle polarization selection in an all-hyperbolic-metamaterial one-dimensional photonic crystal

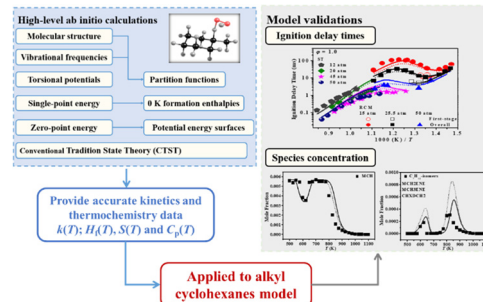
Feng Wu,* Dejun Liu, Hongju Li and Mingku Feng



10795

From electronic structure to model application for alkyl cyclohexane combustion chemistry: H-atom abstraction reactions by HO₂ radical

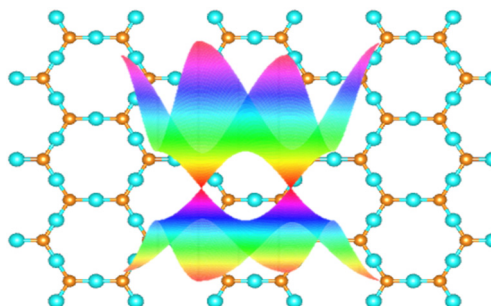
Mingxia Liu, Xin Hui, Xin Xue, Yuzhen Lin and
Chong-Wen Zhou*



10811

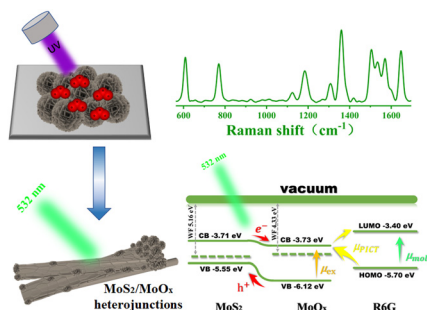
A family of robust Dirac cone materials: two-dimensional hexagonal M₃X₂ (M = Zn/Cd/Hg, X = Si/Ge)

Qiuyang Li, Cuixia Yan,* Chenchen Qi, Shi Qiu,
Ting Yang and Jinming Cai



RESEARCH PAPERS

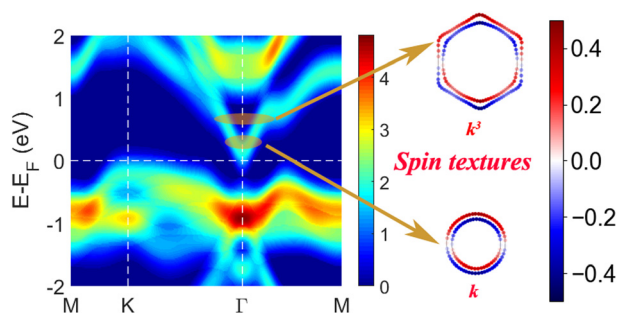
10820



Ultraviolet-ozone concomitantly induced MoS₂/MoO_x heterostructures with improved SERS performance

Zhao Wei, Songyang Xie, Wei Xiong,* Shuwen Zen, Dong Chen,* Tao Jiang, Da Chen, Jun Zhou and Chenjie Gu*

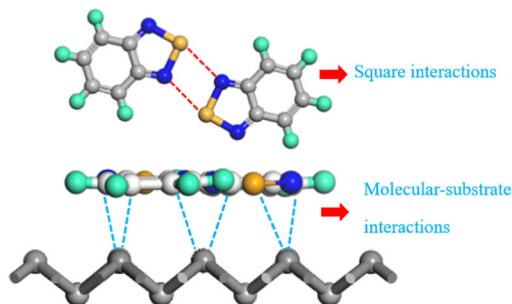
10827



Hexagonal warping effect in the Janus group-VIA binary monolayers with large Rashba spin splitting and piezoelectricity

Shao-Bo Chen, San-Dong Guo, Wan-Jun Yan, Zhao-Yi Zeng,* Mei Xu,* Xiang-Rong Chen* and Hua-Yun Geng

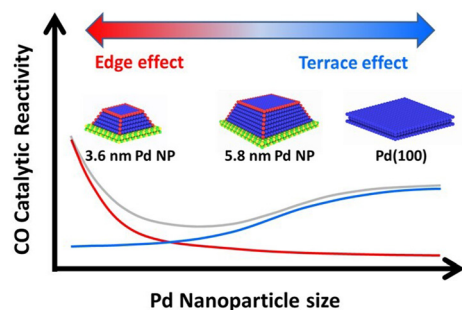
10836



First-principles study of square chalcogen bond interactions and its adsorption behavior on silver surface

Hui Wang,* Bin Li, Xiaoting Wang, Fu Yin, Qiaoyu Wei, Xudong Wang, Yuxiang Ni and Hongyan Wang

10845



In situ study of catalytic CO oxidation on ultrathin MgO film supported Pd nanoparticles by sum frequency generation: size and site effects

Jijin Wang,* Aimeric Ouvrard, Wanquan Zheng, Serge Carrez, Ahmed Ghalgaoui and Bernard Bourguignon

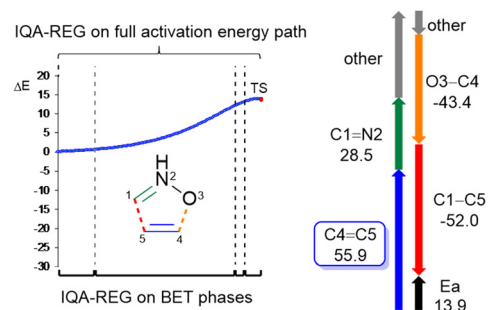


RESEARCH PAPERS

10853

A combined BET and IQA-REG study of the activation energy of non-polar zw-type [3+2] cycloaddition reactions

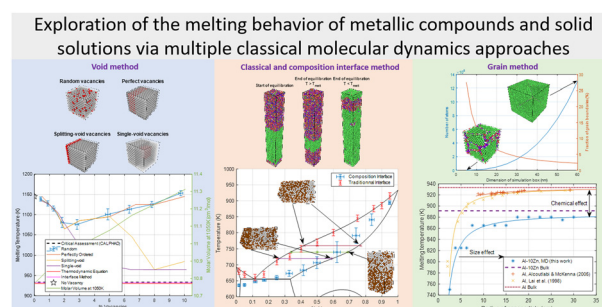
Mar Ríos-Gutiérrez,* Fabio Falcioni, Luis R. Domingo and Paul L. A. Popelier*



10866

On the exploration of the melting behavior of metallic compounds and solid solutions via multiple classical molecular dynamics approaches: application to Al-based systems

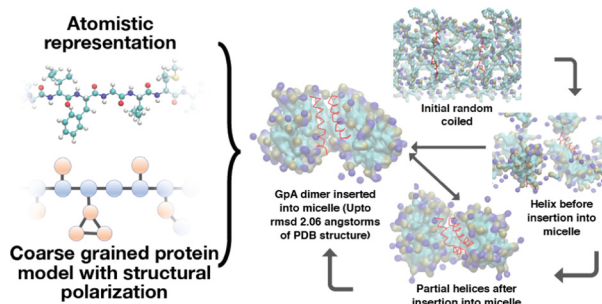
Camille Rincet, Juan-Ricardo Castillo-Sánchez, Aïmen E. Gheribi and Jean-Philippe Harvey*



10885

Folding and modulation of the helical conformation of Glycophorin A by point mutations

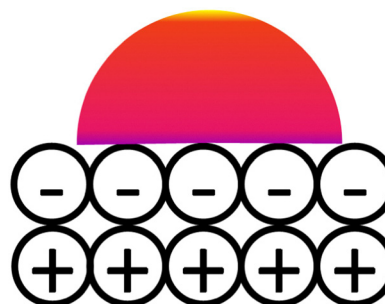
Pei-Yin Lee, Abhilash Sahoo and Silvina Matysiak*



10894

Accelerating water evaporation from salty droplets on polar substrate: a molecular dynamics study

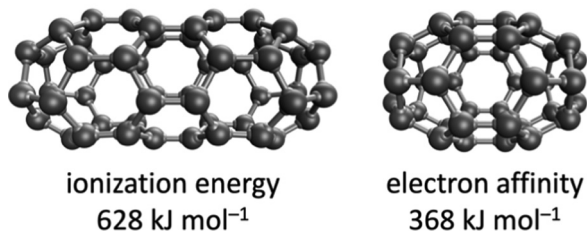
Yongfeng Huang,* Yingzong Liang and Shun Xu*



RESEARCH PAPERS

10899

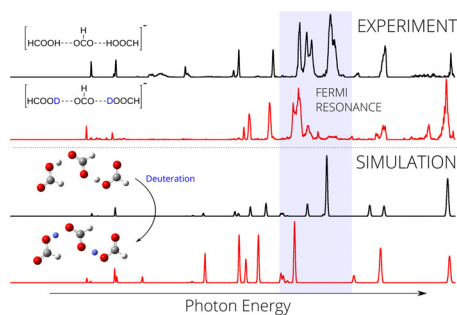
searching for small fullerenes with advantageous electronic properties



Computational insights into the singlet–triplet energy gaps, ionization energies, and electron affinities for a diverse set of 812 small fullerenes (C₂₀–C₅₀)

Bun Chan* and Amir Karton

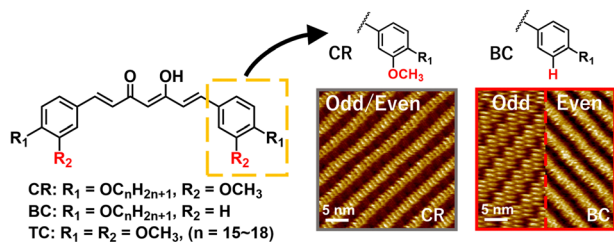
10907



Infrared action spectroscopy of the deprotonated formic acid trimer, trapped in helium nanodroplets

Martin I. Taccone, Daniel A. Thomas, Katja Ober, Sandy Gewinner, Wieland Schöllkopf, Gerard Meijer and Gert von Helden*

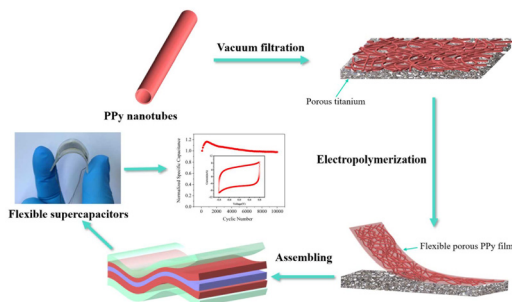
10917



Tuning the odd–even effect on two-dimensional assemblies of curcumin derivatives by alkyl chain substitution: a scanning tunnelling microscopy study

Suyi Liu, Yasuo Norikane,* Seiji Tsuzuki, Shotaro Ito and Yoshihiro Kikkawa*

10925



Fabrication of a flexible porous polypyrrole film with a 3D micro-nanostructure and its electrochemical properties

Jingping Wang,* Jinan Cao, Youlong Xu,* Haixia An and Xifei Li*

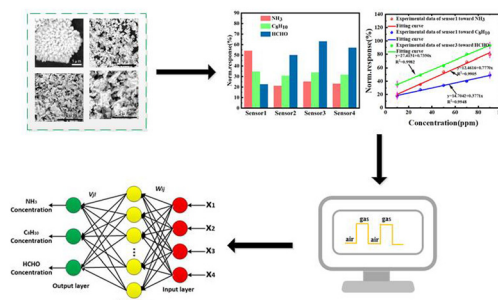


RESEARCH PAPERS

10935

Quantitative prediction of ternary mixed gases based on an SnO₂ sensor array and an SSA-BP neural network model

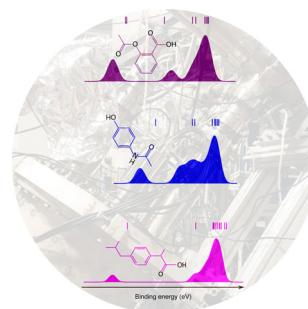
Meihua Li,* Yunlong Gu, Yunfan Zhang, Xiaodong Gao, Shikun Ge and Guangfen Wei



10946

A photoelectron spectroscopic investigation of aspirin, paracetamol and ibuprofen in the gas phase

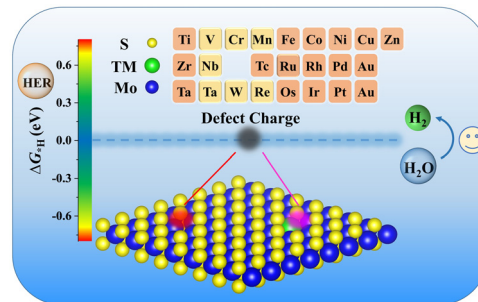
Hanan Sa'adeh,* Kevin C. Prince, Robert Richter, Vladislav Vasilyev, Delano P. Chong and Feng Wang*



10956

The charge effects on the hydrogen evolution reaction activity of the defected monolayer MoS₂

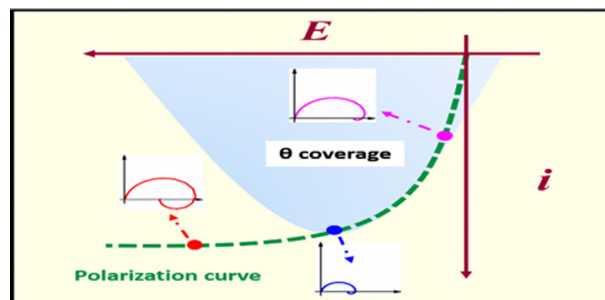
Jing Zhang, Dongying Li, Lin Ju, Gui Yang, Di Yuan, Zhenzhen Feng and Wentao Wang*



10966

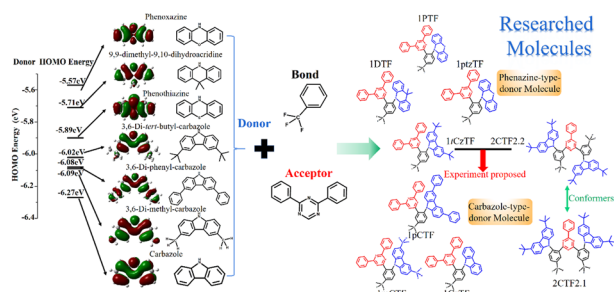
Low-frequency inductive features in the electrochemical impedance spectra of mass-transport limited redox reactions

Debittree Choudhury, Rubul Das, Rajan Maurya, Geetanksha Gupta and Manoj Neergat*



RESEARCH PAPERS

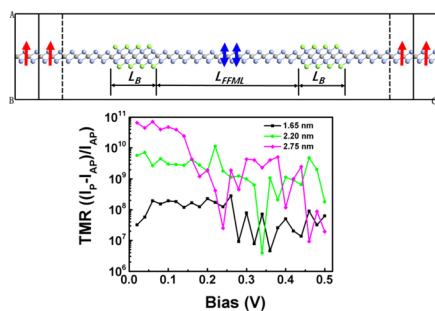
10977



Regulating through space charge transfer in thermally activated delayed fluorescence molecules *via* donor architectures: theoretical perspective and molecular design

Xiaorui Wang, Haipei Zou, Huanling Liu, Qingfang Mu, Kai Zhang, Yuanyuan Xu* and Jianzhong Fan*

10991



Giant tunneling magnetoresistance in in-plane double-barrier magnetic tunnel junctions based on MXene Cr₂C

Hailin Yu, Mingyan Chen, Zhenguang Shao, Yongmei Tao, Xuefan Jiang, Yaojun Dong, Jie Zhang, Xifeng Yang and Yushen Liu*

CORRECTION

10998

Correction: High-throughput computational screening of hypothetical metal–organic frameworks with open copper sites for CO₂/H₂ separation

Mengmeng Li, Weiquan Cai,* Chao Wang and Xuanjun Wu*

RETRACTION

10999

Retraction: Comparing gas transport in three polymers *via* molecular dynamics simulation

Luke R. Anderson,* Quan Yang and Andrew M. Ediger

