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IN THIS ISSUE

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Cover
See Claude Piguet *et al.*, pp. 15801–15814.

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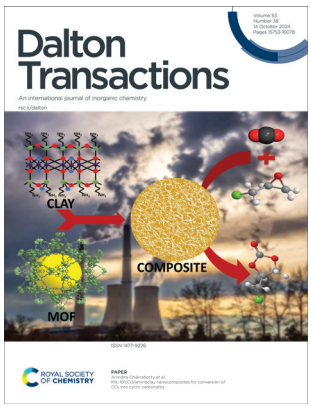

Inside cover
See Anindita Chakraborty *et al.*, pp. 15815–15825.

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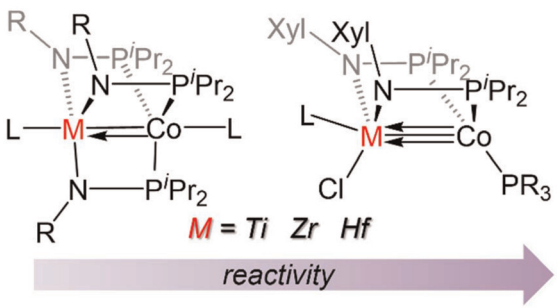
PERSPECTIVE

15764

Polarized metal–metal multiple bonding and reactivity of phosphinoamide-bridged heterobimetallic group IV/cobalt compounds

Nathanael H. Hunter and Christine M. Thomas*

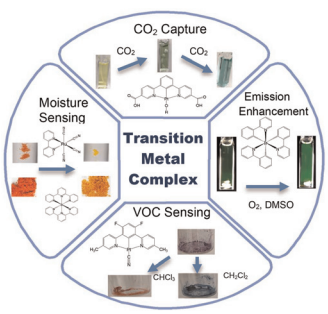


FRONTIERS

15782

Colour/luminescence changes of transition metal complexes induced by gaseous small molecules for monitoring reaction progress and environmental changes

Kazuteru Shinozaki



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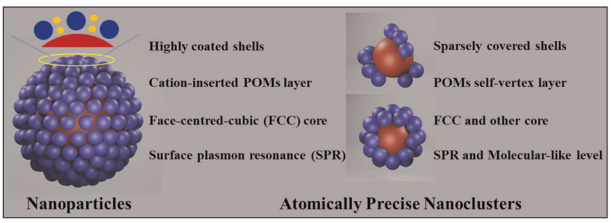
FRONTIERS

15787

Au/Ag@polyoxometalate core–shell structures: from nanoparticles to atomically precise nanoclusters

Xiu-Xia Ding, Wen-Zhu Yang, Sheng-Jie Yao, Xin-Yu Tong, Yan-Xiang Ling, Zhan-Guo Jiang,* Chun-Feng Wang* and Cai-Hong Zhan*

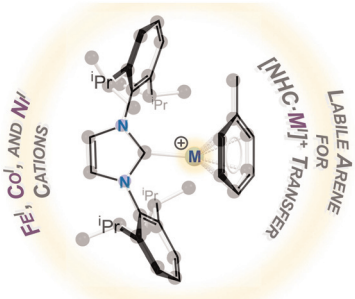


COMMUNICATION

15795

Analogous carbene-stabilised $[M^{I}\text{-}(\eta^{6}\text{-tol})]^{+}$ cations (M = Fe, Co, Ni): synthetic access and $[\text{carbene}\cdot M^{I}]^{+}$ transfer

Annika Schulz and Terrance J. Hadlington*

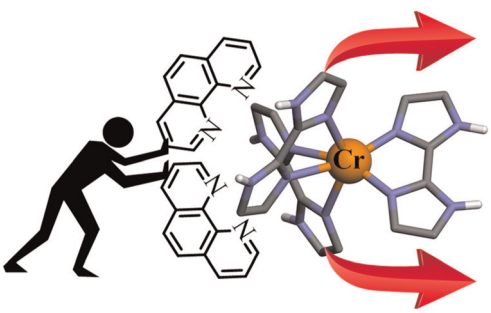


PAPERS

15801

Taming 2,2′-biimidazole ligands in trivalent chromium complexes

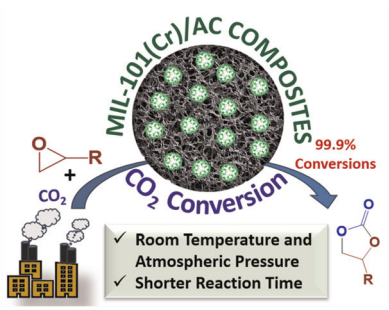
Julien Chong, Amina Benchohra, Céline Besnard, Laure Guénée, Arnulf Rosspeintner, Carlos M. Cruz, Juan-Ramón Jiménez and Claude Piguet*



15815

MIL-101(Cr)/aminoclay nanocomposites for conversion of CO_2 into cyclic carbonates

Jyoti, Sarita Kumari, Samiran Chakraborty, Prakash Kanoo, Vinod Kumar and Anindita Chakraborty*



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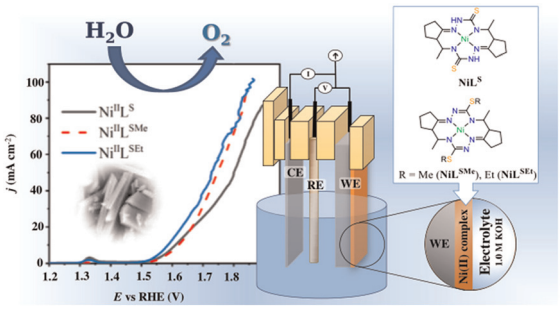
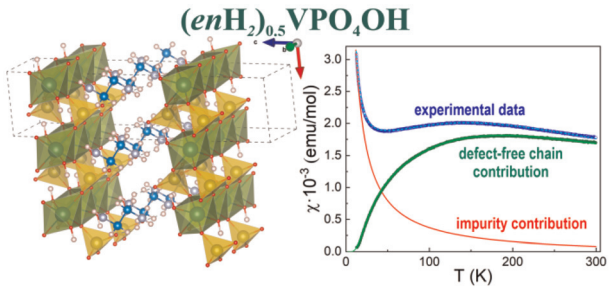
15826



Nickel(II) complexes with 14-membered bis-thiosemicarbazide and bis-isothiosemicarbazide ligands: synthesis, characterization and catalysis of oxygen evolution reaction

Iuliana Besleaga, Anastasia A. Fesenko, Anup Paul, Biljana Šljukić, Peter Rapta,* Armando J. L. Pombeiro,* Anatoly D. Shutalev* and Vladimir B. Arion*

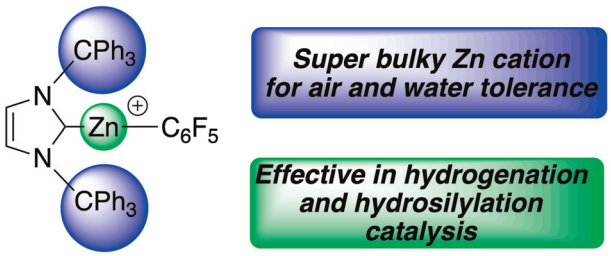
15842



Observation of Haldane magnetism in organically templated vanadium phosphate $(enH_2)_{0.5}VPO_4OH$

A. Sh. Samarin, S. S. Fedotov, H.-J. Koo, M.-H. Whangbo, A. A. Gippius, S. V. Zhurenko, A. V. Tkachev, L. V. Shvanskaya* and A. N. Vasiliev*

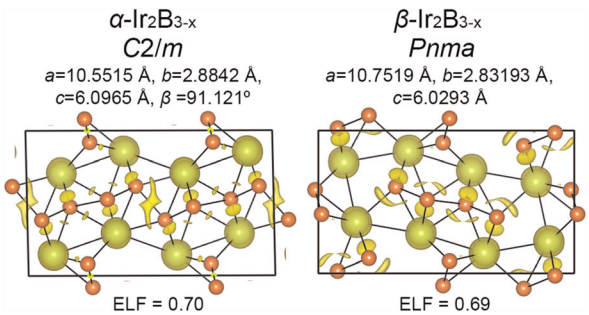
15849



Low coordinate Zn(II) organocations bearing extremely bulky NHC ligands: structural features, air-/water-tolerance and use in hydrosilylation and hydrogenation catalysis

Xuejuan Xu, Jordan Parmentier, Christophe Gourlaouen, Béatrice Jacques and Samuel Dagorne*

15859



Crystal structures, bonding and electronic structures of α- and β-Ir_2B_{3-x} compounds

Oksana Sologub,* Leonid P. Salamakha, Berthold Stöger, Takao Mori, Neven Barisic, Peter F. Rogl, Herwig Michor and Ernst Bauer

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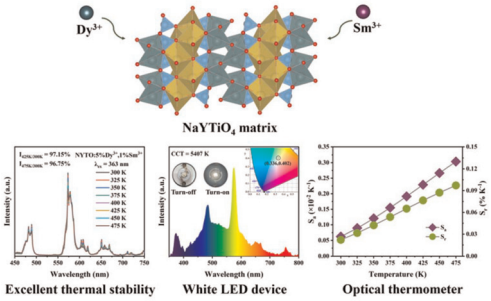
PAPERS

15872

Excellent luminescent thermal stability of Dy^{3+}/Sm^{3+} co-activated multifunctional titanate single-phase phosphors

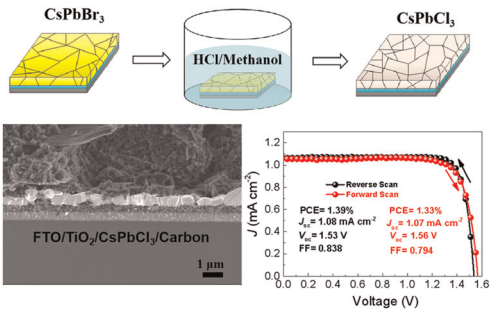
Feiyan Xie,* Junqiang Gu, Jiao Zou, Zhu Liu, Baojun Chen and Juling Xu



15882

Solution mediated halide exchange engineering for the fabrication of a thick $CsPbCl_3$ film and its application in photovoltaics with outstanding performance

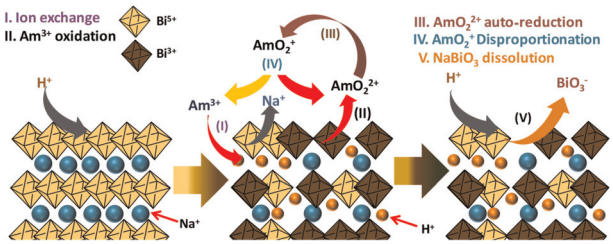
Xiaobing Cao,* Jian Zhou, Gengyang Su, Weidong Song, Zijin Liu and Jinquan Wei*



15890

Interlayer confinement mediated oxidation of americium by sodium bismuthate and stability of its higher redox states in acidic solution

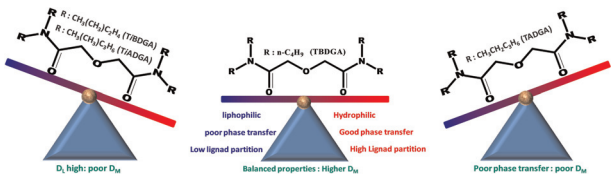
Parveen K. Verma, Arunasis Bhattacharyya* and Prasanta K. Mohapatra*



15903

Effect of branching in the alkyl chain of diglycolamide on the sequestration of tetravalent actinides: solvent extraction and theoretical studies

Rajesh B. Gujar, Parveen K. Verma, Arunasis Bhattacharyya, Prasanta K. Mohapatra,* Richard J. M. Egberink, Jurriaan Huskens and Willem Verboom*



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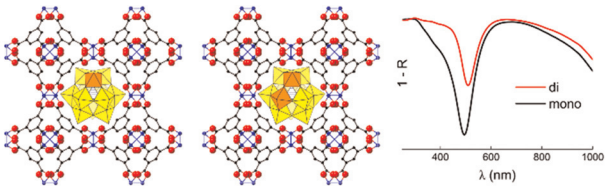
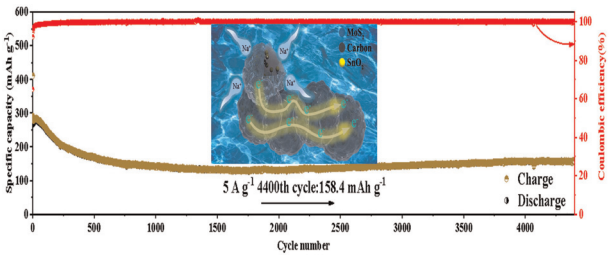


Encapsulation of the vanadium substituted Keggin polyoxometalates $[\alpha\text{-}PVW_{11}O_{40}]^{4-}$ and $[\alpha\text{-}PV_2W_{10}O_{40}]^{5-}$ in HKUST-1

José C. Orozco, Damola T. Shuaib, LaSalle Swenson, Ying-Pin Chen, Yu-Sheng Chen and M. Ishaque Khan*

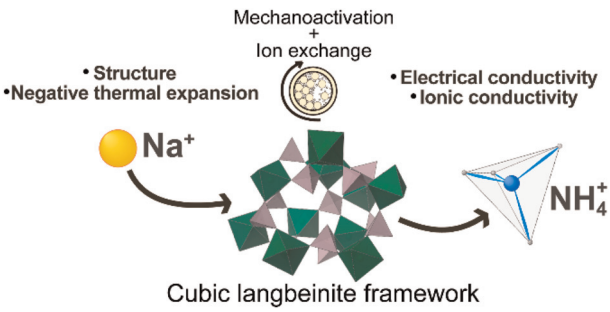
15920



Few-layer MoS_2 promotes SnO_2@C nano-composites for high performance sodium ion batteries

Zhilong Wu, Zhiqiang Huang, Maoxin Yu, Yanan Du, Junwen Li, Hai Jia, Zhiya Lin, Xiaohui Huang* and Shaoming Ying*

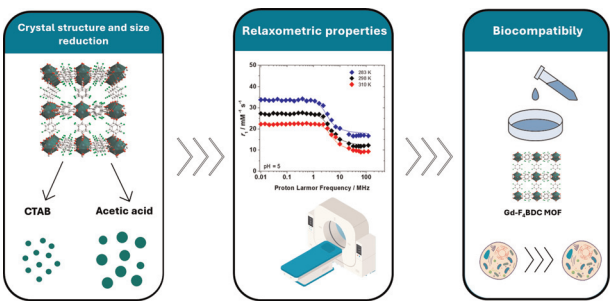
15928



$NaZr_2(PO_4)_3$ – a cubic langbeinite-type sodium-ion solid conductor

Sergey N. Marshenya,* Alexey G. Scherbakov, Artem D. Dembitskiy, Alexander A. Golubnichiy, Ivan A. Trussov, Aleksandra A. Savina, Sergey M. Kazakov, Dmitry A. Aksyonov, Evgeny V. Antipov and Stanislav S. Fedotov

15937



Relaxometric properties and biocompatibility of a novel nanostructured fluorinated gadolinium metal–organic framework

Letizia Trovarelli, Alessandra Mirarchi, Cataldo Arcuri,* Stefano Bruscoli, Oxana Bereshchenko, Marta Febo, Fabio Carniato* and Ferdinando Costantino*

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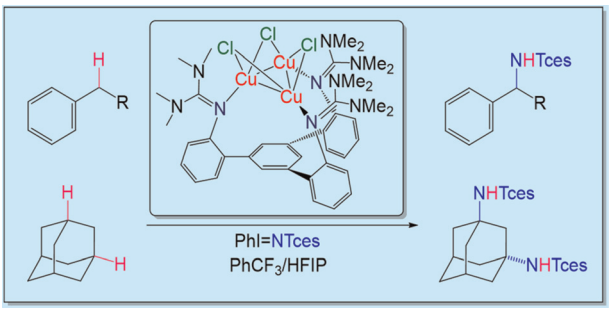
PAPERS

15946

C–H amination chemistry mediated by trinuclear Cu(I) sites supported by a ligand scaffold featuring an arene platform and tetramethylguanidinyl residues

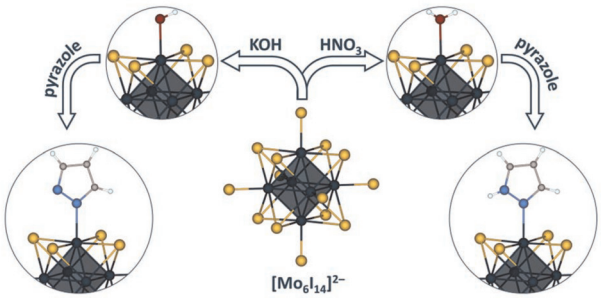
Meenakshi Sharma, Reece M. Fritz, Himanshu Bhatia, Joseph O. Adebanjo, Zhou Lu, Mohammad A. Omary, Thomas R. Cundari,* Amitava Choudhury and Pericles Stavropoulos*



15959

Octahedral molybdenum iodide clusters with pyrazole or pyrazolate ligands

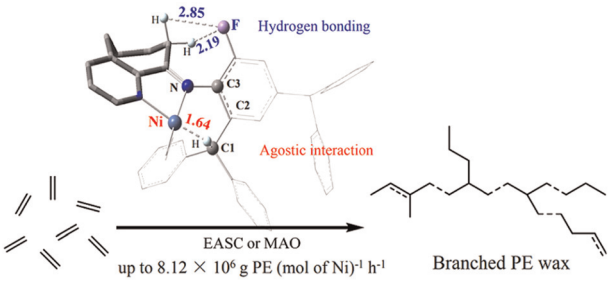
Ksenia S. Kozlova, Alexey S. Berezin, Natalia V. Kuratieva, Michael A. Shestopalov and Anton A. Ivanov*



15968

Synthesis of low-molecular weight and branched polyethylenes *via* ethylene polymerization using 9-(arylimino)-5,6,7,8-tetrahydrocyclohepta-pyridylnickel precatalysts

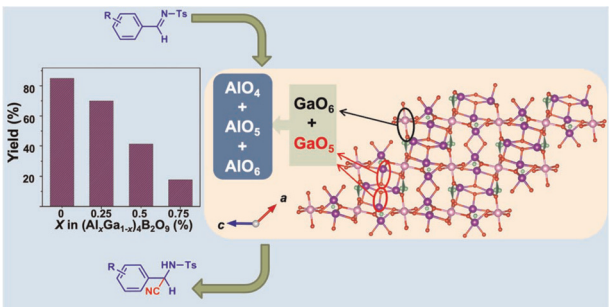
Zhao Ning, Yanping Ma,* Yanning Zeng,* Yizhou Wang, Aoqian Xi and Wen-Hua Sun*



15984

$(Ga_{1-x}Al_x)_4B_2O_9$: controlled surface acid–base properties and catalytic behavior towards the Strecker reaction

Weilu Wang,* Zhong Fan, Shiji Tang, Yun Wu, Ke Xu, Binbin Luo* and Steven L. Suib



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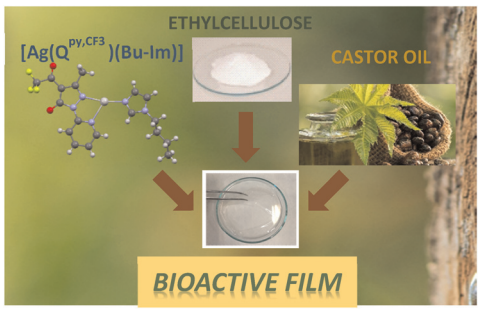
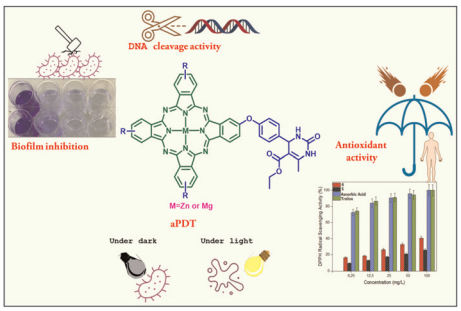


Bioactive Ag(I) coordination complexes as dopants for castor oil plasticized ethylcellulose films

Francesca Scarpelli, Alessandra Crispini,* Iolinda Aiello,* Nicolas Godbert, Fabio Marchetti,* Sonila Xhafa, Giovanni De Filpo, Mariafrancesca Baratta, Riccardo Berardi, Pasquale Alfano and Eugenia Giorno

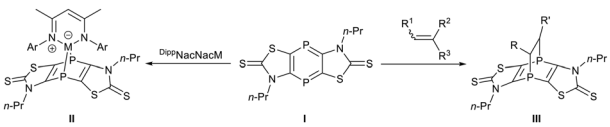
16005



Synthesis, photo-physicochemical and biological properties of novel tetrahydropyrimidone-substituted metallo-phthalocyanines

Kevser Harmandar, Esra Nur Kaya, Gülşah Tollu, Ibrahim F. Sengul, Sadin Özdemir and Devrim Atilla*

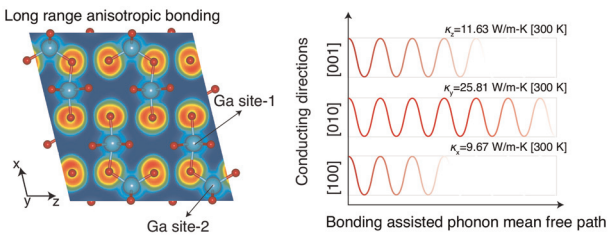
16018



[4 + 1]- and [4 + 2]-cycloadditions of a thiazole-2-thione-based 1,4-diphosphinine – broadening the scope

Tim Kalisch, Gregor Schnakenburg, Georgii I. Nikonov and Rainer Streubel*

16023



Role of phonon scattering and bonding in resolving lattice thermal conductivity ambiguities of β-Ga_2O_3

Ashutosh Srivastava, Madhubanti Mukherjee and Abhishek Kumar Singh*

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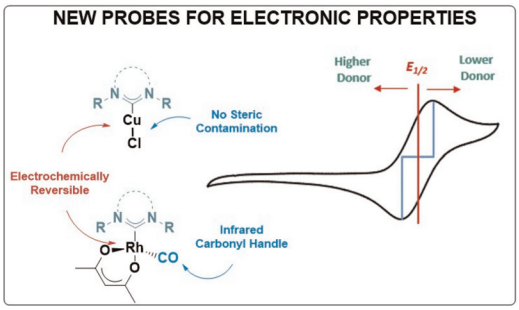
PAPERS

16030

A simply accessible organometallic system to gauge electronic properties of N-heterocyclic carbenes

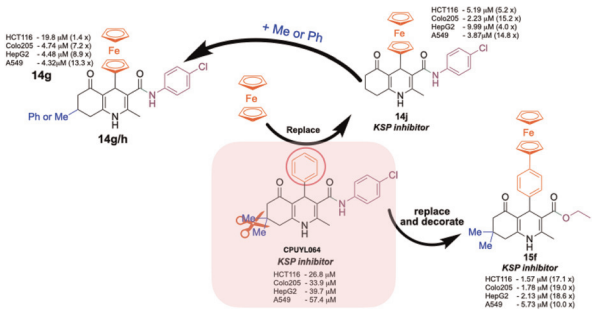
Francis Bru, Rex S. C. Charman, Laurens Bourda, Kristof Van Hecke, Laurence Grimaud, David J. Liptrot and Catherine S. J. Cazin*



16038

Design and synthesis of ferrocenyl 1,4-dihydropyridines and their evaluation as kinesin-5 inhibitors

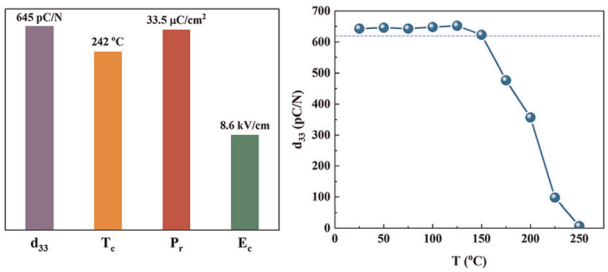
Karolina Kowalczyk, Andrzej Błauż, Krzysztof Krawczyk, Błażej Rychlik and Damian Plażuk*



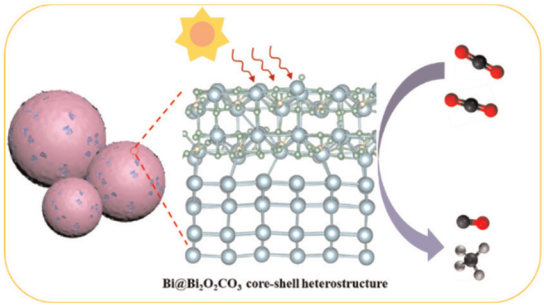
16054

Significant effects of minor chemical composition changes on the structure and property of $(Pb_{1-y}Sr_y)(Mg_{1/3}Nb_{2/3})_{0.07}Zr_xTi_{0.93-x}O_3$:zLa

Jian Guo, Ming-Yuan Yan, Hao-Ran Yu, Ji Zhang,* Guoliang Yuan and Shan-Tao Zhang*



16066

In situ fabrication of a plasmonic $Bi@Bi_2O_2CO_3$ core–shell heterostructure for photocatalytic CO_2 reduction: structural insights into selectivity modulation

Yannan Zhou, Jingyun Jiang, Hang Yin* and Shouren Zhang*