

# Dalton Transactions

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## IN THIS ISSUE

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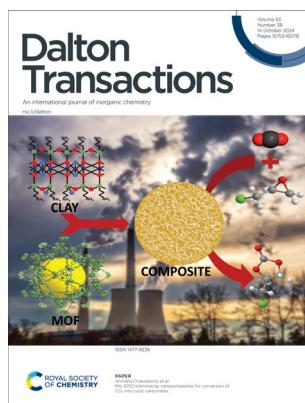


### Cover

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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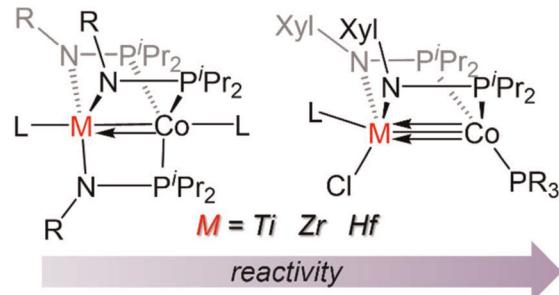
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## PERSPECTIVE

15764

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

Nathanael H. Hunter and Christine M. Thomas\*

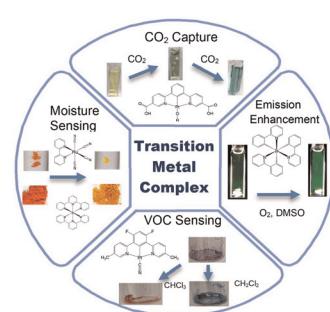


## FRONTIERS

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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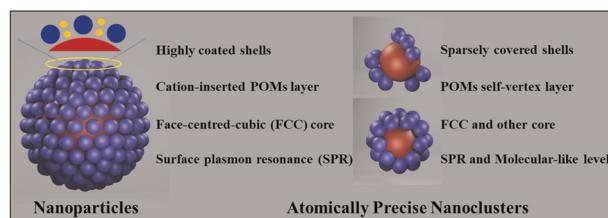
Fundamental questions  
Elemental answers

## 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\*

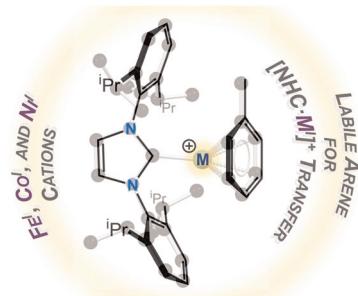


## COMMUNICATION

15795

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

Annika Schulz and Terrance J. Hadlington\*

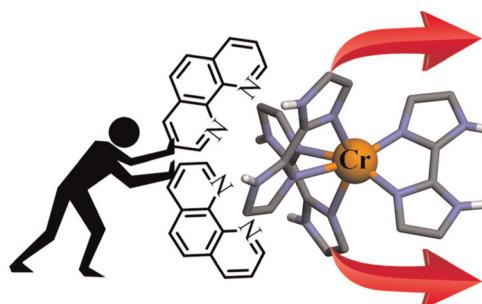


## PAPERS

15801

**Taming 2,2'-biimidazole ligands in trivalent chromium complexes**

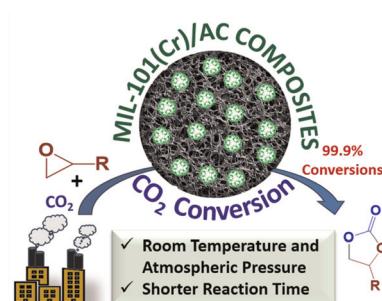
Julien Chong, Amina Benchohra, Céline Besnard,  
 Laure Guénée, Arnulf Rosspeintner, Carlos M. Cruz,  
 Juan-Ramón Jiménez and Claude Piguet\*



15815

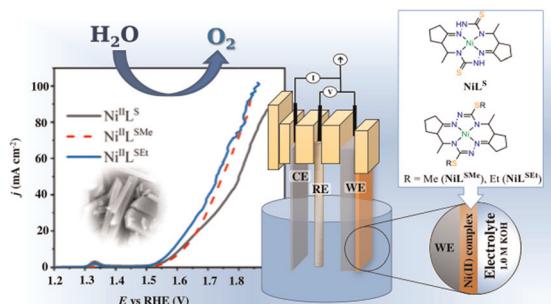
**MIL-101(Cr)/aminoclay nanocomposites for conversion of  $\text{CO}_2$  into cyclic carbonates**

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



## PAPERS

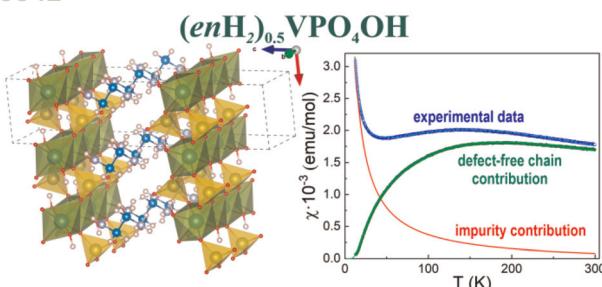
15826



**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\*

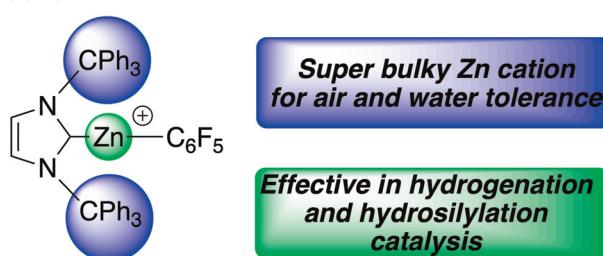
15842



**Observation of Haldane magnetism in organically templated vanadium phosphate (enH₂)₀·₅VPO₄OH**

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\*

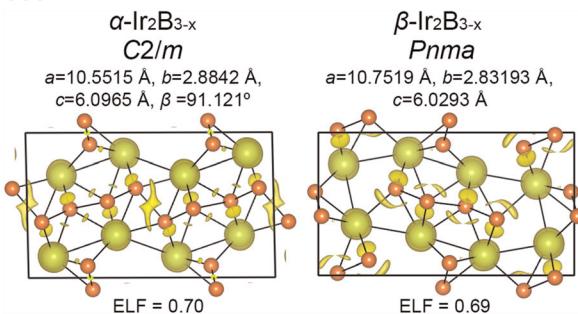
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**Low coordinate Zn(II) organocations bearing extremely bulky NHC ligands: structural features, air-/water-tolerance and use in hydrosilylation and hydrogenation catalysis**

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

15859



**Crystal structures, bonding and electronic structures of  $\alpha$ - and  $\beta$ -Ir<sub>2</sub>B<sub>3-x</sub> compounds**

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

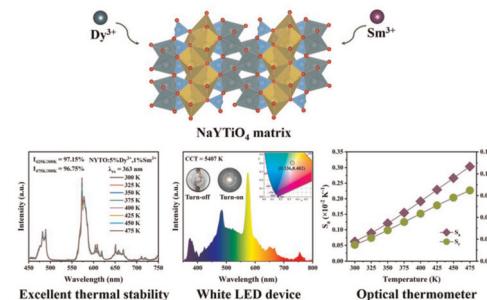


## PAPERS

15872

## Excellent luminescent thermal stability of Dy<sup>3+</sup>/Sm<sup>3+</sup> co-activated multifunctional titanate single-phase phosphors

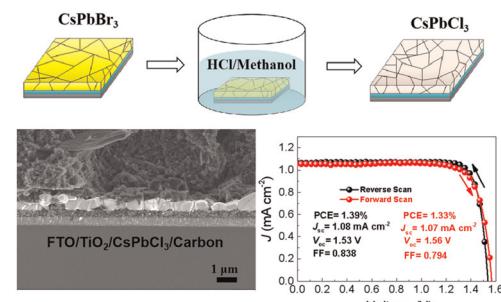
Feiyan Xie,\* Junqiang Gu, Jiao Zou, Zhu Liu, Baojun Chen and Juling Xu



15882

## Solution mediated halide exchange engineering for the fabrication of a thick CsPbCl<sub>3</sub> film and its application in photovoltaics with outstanding performance

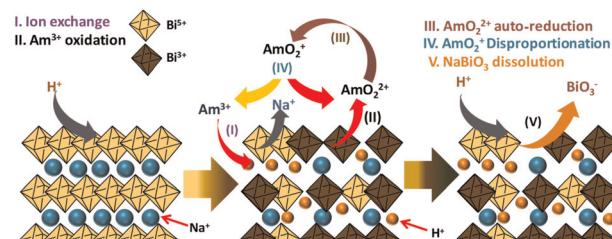
Xiaobing Cao,\* Jian Zhou, Gengyang Su, Weidong Song, Zijin Liu and Jinquan Wei\*



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

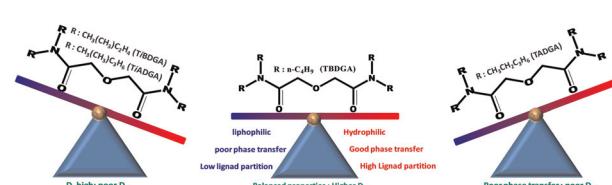
Parveen K. Verma, Arunasis Bhattacharyya\* and Prasanta K. Mohapatra\*



15903

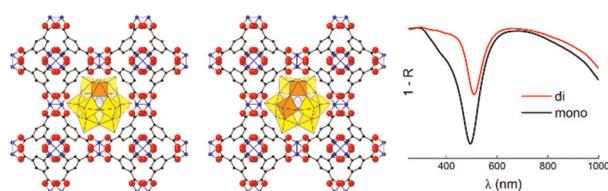
## Effect of branching in the alkyl chain of diglycolamide on the sequestration of tetravalent actinides: solvent extraction and theoretical studies

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



## PAPERS

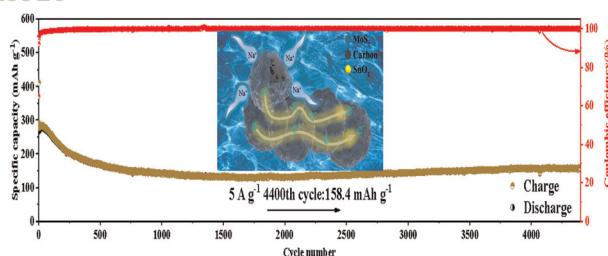
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### Encapsulation of the vanadium substituted Keggin polyoxometalates $[\alpha\text{-PVW}_{11}\text{O}_{40}]^{4-}$ and $[\alpha\text{-PV}_2\text{W}_{10}\text{O}_{40}]^{5-}$ in HKUST-1

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

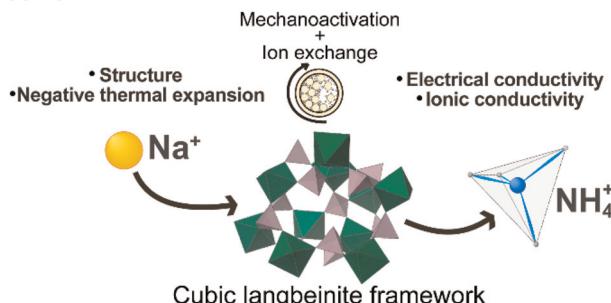
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### Few-layer MoS<sub>2</sub> promotes SnO<sub>2</sub>@C nano-composites for high performance sodium ion batteries

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

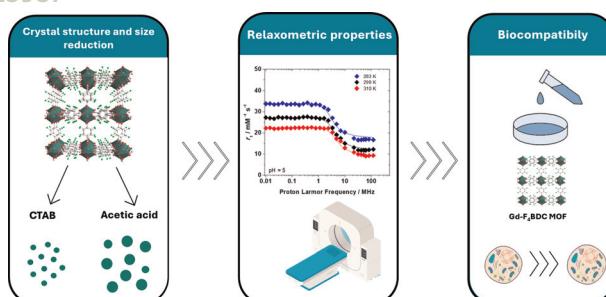
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### $\text{NaZr}_2(\text{PO}_4)_3$ – a cubic langbeinite-type sodium-ion solid conductor

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\*

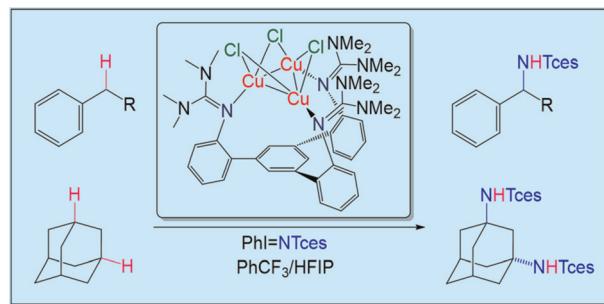


## PAPERS

15946

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

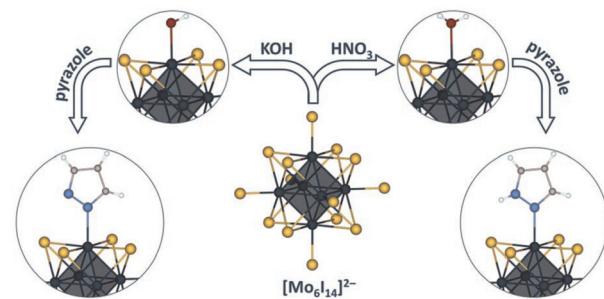
Meenakshi Sharma, Reece M. Fritz, Himanshu Bhatia, Joseph O. Adebanjo, Zhou Lu, Mohammad A. Omary, Thomas R. Cundari,\* Amitava Choudhury and Pericles Stavropoulos\*



15959

**Octahedral molybdenum iodide clusters with pyrazole or pyrazolate ligands**

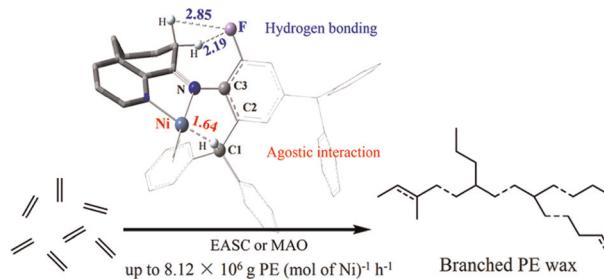
Ksenia S. Kozlova, Alexey S. Berezin, Natalia V. Kuratieva, Michael A. Shestopalov and Anton A. Ivanov\*



15968

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

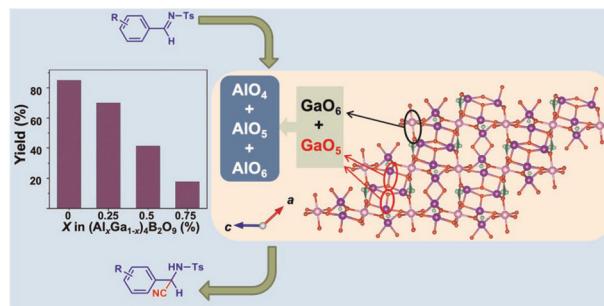
Zhao Ning, Yanping Ma,\* Yanning Zeng,\* Yizhou Wang, Aoqian Xi and Wen-Hua Sun\*



15984

**(Ga<sub>1-x</sub>Al<sub>x</sub>)<sub>4</sub>B<sub>2</sub>O<sub>9</sub>: 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



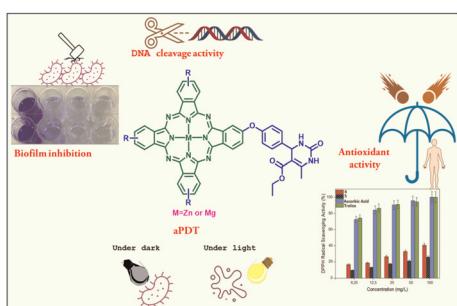
## PAPERS

15992

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

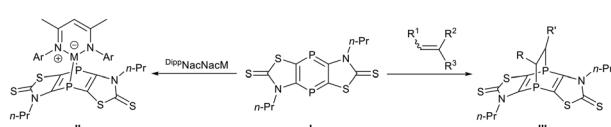
Francesca Scarpelli, Alessandra Crispini,\* Iolinda Aiello,\* Nicolas Godbert, Fabio Marchetti,\* Sonila Xhafa, Giovanni De Filpo, Mariafrancesca Baratta, Riccardo Berardi, Pasquale Alfano and Eugenia Giorno

16005

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

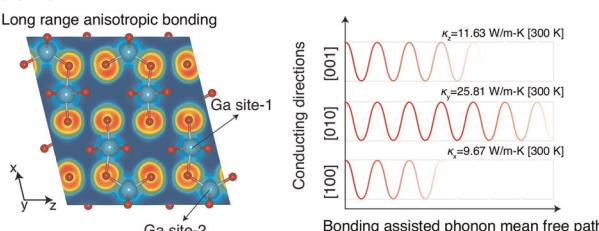
Kevser Harmandar, Esra Nur Kaya, Gülsah Tolu, Ibrahim F. Sengul, Sadin Özdemir and Devrim Atilla\*

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. Nikonorov and Rainer Streubel\*

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**Role of phonon scattering and bonding in resolving lattice thermal conductivity ambiguities of  $\beta$ -Ga<sub>2</sub>O<sub>3</sub>**

Ashutosh Srivastava, Madhubanti Mukherjee and Abhishek Kumar Singh\*

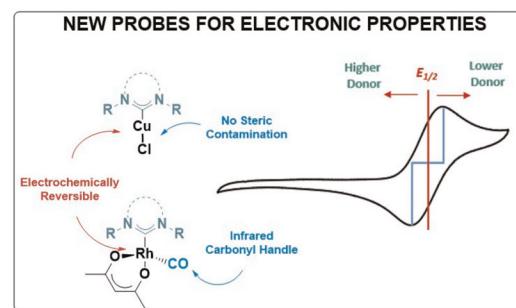


## PAPERS

16030

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

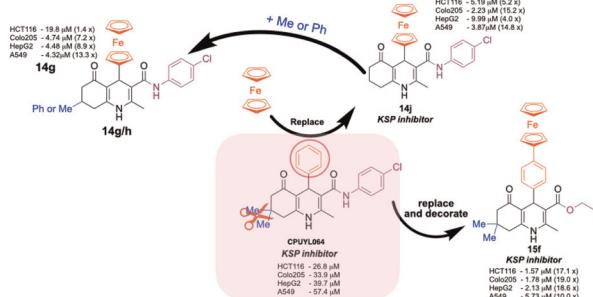
Francis Bru, Rex S. C. Charman, Laurens Bourda, Kristof Van Hecke, Laurence Grimaud, David J. Liptrot and Catherine S. J. Cazin\*



16038

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

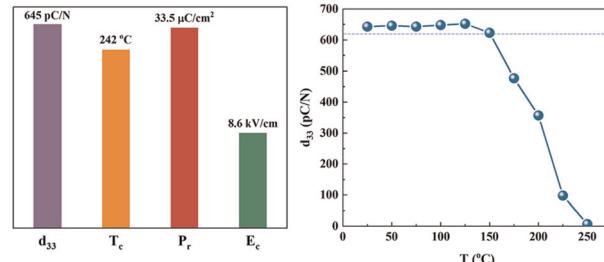
Karolina Kowalczyk, Andrzej Błażuś, Krzysztof Krawczyk, Błażej Rychlik and Damian Plażuk\*



16054

## Significant effects of minor chemical composition changes on the structure and property of $(\text{Pb}_{1-y}\text{Sr}_y)(\text{Mg}_{1/3}\text{Nb}_{2/3})_{0.07}\text{Zr}_x\text{Ti}_{0.93-x}\text{O}_3:\text{zLa}$

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



16066

## In situ fabrication of a plasmonic $\text{Bi}@\text{Bi}_2\text{O}_2\text{CO}_3$ core–shell heterostructure for photocatalytic $\text{CO}_2$ reduction: structural insights into selectivity modulation

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

