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ISSN 1477-9226 CODEN DTARAF 52(19) 6197-6590 (2023)



See Korawich Trangwachirachai and Yu-Chuan Lin, pp. 6211-6225.

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#### Inside cover

See Célia S. Bonnet, Olivier Sénèque et al., pp. 6260-6266.

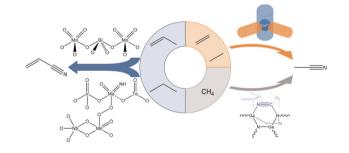
Image reproduced by permission of Kyangwi P. Malikidogo from Dalton Trans., 2023, 52, 6260.

# **PERSPECTIVES**

#### 6211

Light hydrocarbon conversion to acrylonitrile and acetonitrile - a review

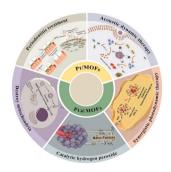
Korawich Trangwachirachai and Yu-Chuan Lin\*



#### 6226

# Current status and prospects of MOFs in controlled delivery of Pt anticancer drugs

Jinyi Chen, Zhixin Zhang, Jiaxin Ma, Alireza Nezamzadeh-Ejhieh, Chengyu Lu, Ying Pan,\* Jiangiang Liu\* and Zhi Bai\*



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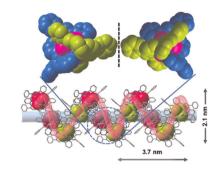


# **COMMUNICATIONS**

#### 6239

Secondary hierarchical complexity in doublestranded cluster helicates covered by NNNNN type pincer ligands

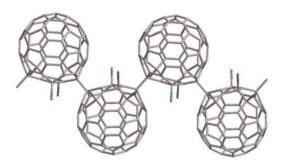
Wang-Chuan Xiao, Qing-Bin Nie\* and Geng-Geng Luo\*



#### 6244

# Dimeric and 1D polymeric low-chlorinated C<sub>60</sub> fullerenes, $(C_{60}Cl_5)_2$ and $(C_{60}Cl_4)_{\infty}$

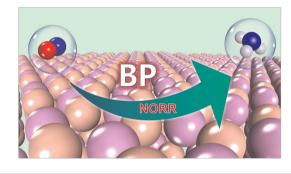
Victor A. Brotsman,\* Nadezhda B. Tamm, Ilya N. Ioffe, Andrei A. Eliseev, Alexey A. Goryunkov, Konstantin A. Lyssenko and Sergey I. Troyanov



#### 6248

# A metal-free catalyst for electrocatalytic NO reduction to NH<sub>3</sub>

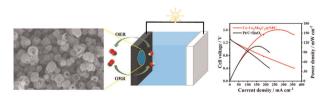
Guike Zhang, Yuying Wan, Hongyan Zhao, Yali Guo and Ke Chu\*



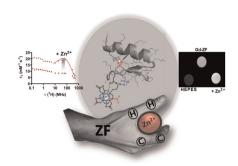
#### 6254

Nano bowl-like cobalt-cobalt molybdenum carbide coated by N,P co-doped carbon as an advanced bifunctional oxygen electrocatalyst for rechargeable Zn-air batteries

Yanqiang Li,\* Huicheng Wang, Hai An, Xuan Liu, Siru Chen and Xue-Zhi Song\*



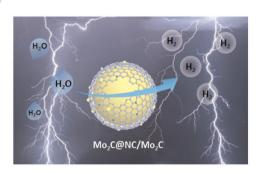
#### 6260



# A phosphorylated zinc finger peptide bearing a gadolinium complex for zinc detection by MRI

Kyangwi P. Malikidogo, Agnès Pallier, Frédéric Szeremeta, Célia S. Bonnet\* and Olivier Sénèque\*

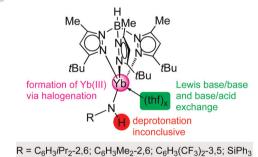
6267



Core-shell Mo<sub>2</sub>C@NC/Mo<sub>2</sub>C hollow microspheres as highly efficient electrocatalysts for the hydrogen evolution reaction

Xuefei Zhang, Tao Lei, Miao Xia, Qiao-Hua Wei\* and Zailai Xie\*

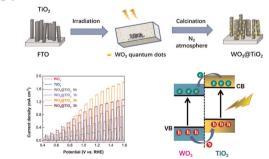
6273



Potential precursors for terminal ytterbium(II) imide complexes bearing the hydrotris(3-tert-butyl-5methylpyrazolyl)borato ligand

Markus M. Katzenmayer, Felix Kracht, Cäcilia Maichle-Mössmer and Reiner Anwander\*

6284



Construction of WO<sub>3</sub> quantum dots/TiO<sub>2</sub> nanowire arrays type II heterojunction via electrostatic self-assembly for efficient solar-driven photoelectrochemical water splitting

Ning Zhang, Huili Li, Bo Yao, Shiyan Liu, Jun Ren, Yawei Wang, Zebo Fang,\* Rong Wu\* and Shunhang Wei\*

#### 6290

A strategically synthesized arseno-discriminatory tetra-phenoxido hetero-trinuclear complex envisioned for the recognition of iAs and oAs from Oryza sp. and aquatic crustaceans

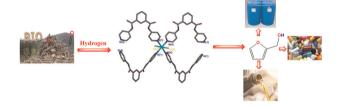
Somrita Nag, Koushik Pramanik, Mohit Kumar Chattopadhyay, Pijush Malpaharia, Swapan K. Chandra\* and Priyabrata Banerjee\*



#### 6300

# Selective Cu and Ni-MOFs as pre-catalysts for the hydrogenation of furfural to furfuryl alcohol

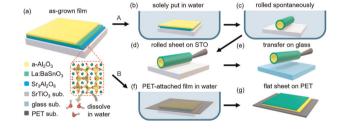
Pamela S. Moyo, Banele Vatsha, Gift Mehlana,\* Leah C. Matsinha\* and Banothile C. E. Makhubela\*



#### 6317

Synthesis and transparent conductivity of crack-free La:BaSnO<sub>3</sub> epitaxial flexible sheets

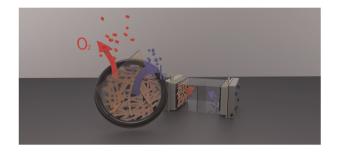
Lizhikun Gong, Rui Yu, Hiromichi Ohta and Tsukasa Katayama\*



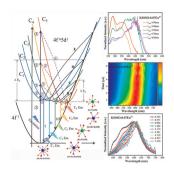
#### 6324

An electrochemically fabricated cobalt iron oxyhydroxide bifunctional electrode for an anion exchange membrane water electrolyzer

Seokjin Hong, Hyunki Kim, Ho Won Jang,\* Soo Young Kim\* and Sang Hyun Ahn\*



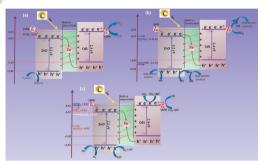
6331



Multiple site occupancy induced yellow-orange emission in an  $Eu^{2+}$ -doped  $KSr_6Sc(SiO_4)_4$  phosphor towards optical temperature sensors

Wenjing Wang, Tao Tan, Shangwei Wang, Taixing Tan, Su Zhang,\* Chengyu Li and Hongjie Zhang

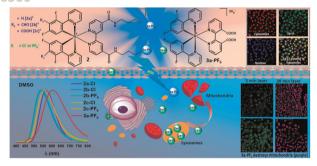
6343



A Cu medium designed Z-scheme ZnO-Cu-CdS heterojunction photocatalyst for stable and excellent  $H_2$  evolution, methylene blue degradation, and  $CO_2$  reduction

Irshad Ahmad,\* Shazia Shukrullah, Muhammad Yasin Naz and Haq Nawaz Bhatti

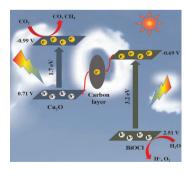
6360



A new family of luminescent iridium complexes: synthesis, optical, and cytotoxic studies

Gonzalo Millán, Mattia Nieddu, Icíar P. López, Cintia Ezquerro, Jesús R. Berenguer, Ignacio M. Larráyoz, José G. Pichel\* and Elena Lalinde\*

6375



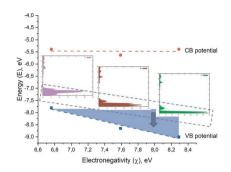
Fabrication and characterization of Z-scheme  $BiOCl/C/Cu_2O$  heterojunction nanocomposites as efficient catalysts for the photocatalytic reduction of  $CO_2$ 

Cheng Xia, Rui-tang Guo,\* Zhe-xu Bi, Zhen-rui Zhang, Chu-fan Li and Wei-guo Pan

#### 6388

Crystal structure and electronic properties of low-dimensional hexamethylenediaminium lead halide perovskites

M. I. Balanov, O. A. Brylev, R. Kevorkyants, A. V. Emeline, N. I. Selivanov, Y. V. Chizhov, A. V. Syuy, D. S. Shtarev\* and V. V. Korochencev



#### 6398

Solvent-free oxidation of benzyl C-H to ketone with Co-Ni layered double hydroxide as the catalyst and O2 as the sole oxidant

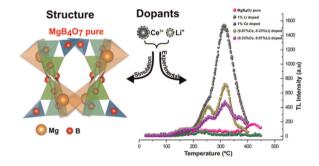
Jiali Ren, Yan Zhou, Hui Miao,\* Chaogun Wang, Shanshan Lv, Manman Song, Feng Li, Mengmeng Feng and Zheng Chen\*



#### 6407

Unlocking the effect of Li and Ce ions on the thermoluminescence and optically stimulated luminescence signals of the MgB<sub>4</sub>O<sub>7</sub> compound

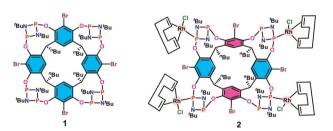
João V. B. Batista, Henrique Trombini, André Otsuka, Iury S. Silveira, Linda V. E. Caldas, Antonio O. de Souza, Adelmo S. Souza, Jorge L. O. Santos, Vinicius Coelho and Heveson Lima\*



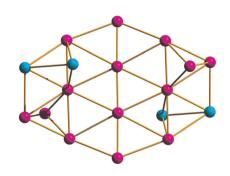
#### 6420

Synthesis and characterization of the cyclodiphosphazane embedded macrocycle tetrabromo-resorcin[4]arenetetrakis(cyclodiphosphazane) and its tetra-rhodium(1) complex

Madhusudan K. Pandey, Sonu Sheokand and Maravanji S. Balakrishna\*



#### 6426



## Tetra-, tetradeca- and octadecametallic clusters of Mn

Eleftheria Agapaki, Angelos B. Canaj, Gary S. Nichol and Euan K. Brechin\*

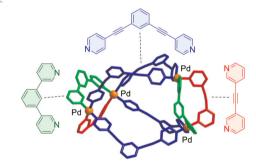
# 6435

Strongly light-absorbing dyes for DSSC

# Tailoring the $\pi$ -system of benzimidazole ligands towards stable light-harvesting cyclometalated iridium(III) complexes

Sergei V. Tatarin, Daniil E. Smirnov, Ilya V. Taydakov, Mikhail T. Metlin, Victor V. Emets and Stanislav I. Bezzubov\*

#### 6451

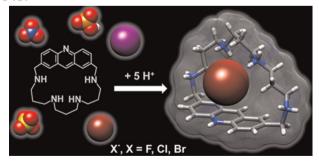


Access to unique complexes

# Construction of Pd-based coordination cages with three geometrically distinct ligands

Ru-Jin Li, Jean de Montmollin, Farzaneh Fadaei-Tirani, Rosario Scopelliti and Kay Severin\*

#### 6457



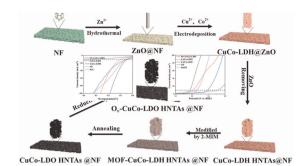
# Inorganic anion recognition in aqueous solution by coupling nearby highly hydrophilic and hydrophobic moieties in a macrocyclic receptor

Giammarco M. Romano, Matteo Savastano, Carla Bazzicalupi, Riccardo Chelli, Vito Lippolis and Andrea Bencini\*

#### 6473

Structure and oxygen vacancy engineered CuColayered double oxide nanotube arrays as advanced bifunctional electrocatalysts for overall water splitting

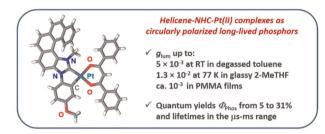
Zifeng Zeng, Zhifeng Gao, Zicheng Guo, Xiaowei Xu,\* Yian Chen, Ying Li,\* Dandan Wu,\* Lin Lin,\* Runping Jia and Sheng Han



#### 6484

Enantiopure cycloplatinated pentahelicenic N-heterocyclic carbenic complexes that display long-lived circularly polarized phosphorescence

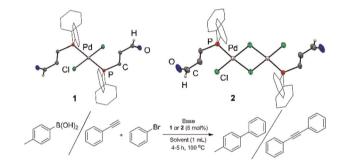
Debsouri Kundu, Natalia del Rio, Marie Cordier, Nicolas Vanthuyne, Emma V. Puttock, Stefan C. J. Meskers, J. A. Gareth Williams,\* Monika Srebro-Hooper\* and Jeanne Crassous\*



## 6494

Metal phosphine aldehyde complexes and their application in Cu-free Sonogashira and Suzuki-Miyaura cross-coupling reactions

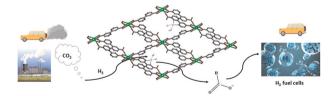
Saral Baweja, Tom Gabler, Peter Lönnecke and Evamarie Hey-Hawkins\*



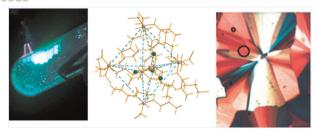
#### 6501

Two novel metal-organic frameworks functionalised with pentamethylcyclopentadienyl iridium(III) chloride for catalytic conversion of carbon dioxide to formate

Maureen Gumbo, Banothile C. E. Makhubela\* and Gift Mehlana\*



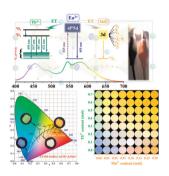
#### 6515



# Enhanced stability and complex phase behaviour of organic-inorganic green-emitting ionic manganese halides

Brando Adranno, Veronica Paterlini, Volodymyr Smetana, Guillaume Bousrez, Alexander Ovchinnikov and Anja-Verena Mudring\*

6527



Single-component full-color emitting Ca<sub>6</sub>Y<sub>2</sub>Na<sub>2</sub>(PO<sub>4</sub>)<sub>6</sub>F<sub>2</sub>:Eu<sup>2+</sup>,Tb<sup>3+</sup>,Mn<sup>2+</sup> phosphors with superior performance: color-tunable and energy transfer study

Bingye Zhang,\* Ying Li, Jingli Liu, Yanli Ren, Shitian Ying, Jinsu Zhang\* and Baojiu Chen

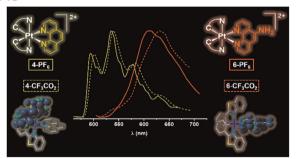
6536



# Carbon dioxide sequestration by mineral carbonation via iron complexation using bipyridine chelating ligands

Javier F. Reynes,\* Guy Mercier, Jean-François Blais and Louis-César Pasquier

6543



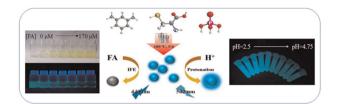
# Phosphorescent 2-phenylbenzothiazole Pt<sup>IV</sup> bis-cyclometalated complexes with phenanthrolinebased ligands

Andrea Corral-Zorzano, David Gómez de Segura, Elena Lalinde\* and M. Teresa Moreno\*

#### 6551

High luminescent N,S,P co-doped carbon dots for the fluorescence sensing of extreme acidity and folic acid

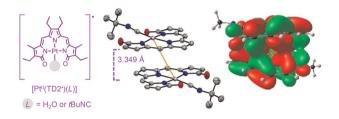
Wenjuan Dong, Lu Wang, Rongrong Zhang, Chaochao Wen, Ren Su,\* Xiaojuan Gong and Wenting Liang\*



#### 6559

Multicenter interactions and ligand field effects in platinum(II) tripyrrindione radicals

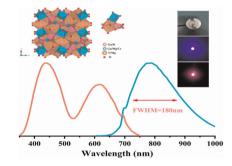
Elisa Tomat,\* Clayton J. Curtis, Andrei V. Astashkin, Jeanet Conradie and Abhik Ghosh\*



#### 6569

Novel broadband NIR phosphors  $Y_2Mg_2Ga_2Si_2O_{12}$ :  $xCr^{3+}$  for NIR LED applications

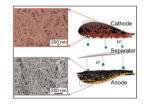
Shihao Wu, Heng Liang, Yan Li, Wanfang Zou, Zhijian Liao, Wei Wang\* and Xinyu Ye\*

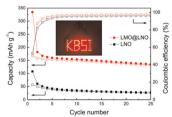


#### 6578

Rechargeable Li-ion full batteries based on one-dimensional Li-rich Li<sub>1.13</sub>Mn<sub>0.26</sub>Ni<sub>0.61</sub>O<sub>2</sub> cathode and nitrogen-doped carbon-coated NiO anode materials

Jong Guk Kim, Yuseong Noh and Youngmin Kim\*





# CORRECTION

6588

Correction: Self-assembly of tripyrazolate-linked  $[M_6L_2]$  cages for the selective sensing of  $HSO_3^-$  and gaseous  $SO_2$  by turn-on fluorescence

Peipei Wang, Jin Tong,\* Cong Meng, Qing Yuan, Wei Deng, Shu-Yan Yu\* and Hong-Wei Ma