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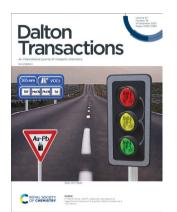
An international journal of inorganic chemistry incorporating Acta Chemica Scandinavica

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ISSN 1477-9226 CODEN DTARAF 52(46) 17045-17584 (2023)



#### Cover

See M. Elena Olmos, José M. López-de-Luzuriaga et al., pp. 17119-17131.

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#### Inside cover

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#### **PERSPECTIVE**

#### 17061

Decoding the puzzle: recent breakthroughs in understanding degradation mechanisms of Li-ion batteries

Aditya Narayan Singh,\* Kamrul Hassan, Chinna Bathula and Kyung-Wan Nam\*

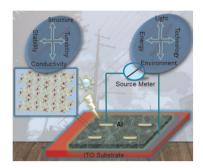


#### **FRONTIER**

#### 17084

Coordination polymers: a promising candidate for photo-responsive electronic device application

Basudeb Dutta,\* Faruk Ahmed\* and Mohammad Hedayetullah Mir\*



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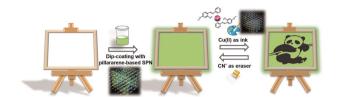


#### **COMMUNICATIONS**

#### 17099

A supramolecular polymer network constructed using a pillararene-based multi-functional monomer and its application as a rewritable fluorescent paper

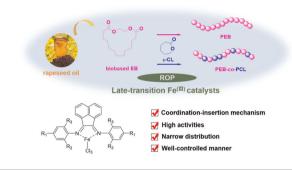
Bicong Liang, Danyu Xia,\* Yujie Cheng, Qiang Zheng\* and Pi Wang\*



#### 17104

Efficient and well-controlled ring opening polymerization of biobased ethylene brassylate by  $\alpha$ -diimine FeCl<sub>3</sub> catalysts *via* a coordination-insertion mechanism

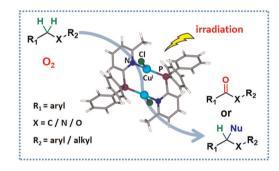
Lijia Liu, Chunyu Zhang, Xuequan Zhang, Heng Liu\* and Feng Wang\*



#### 17109

Photocatalytic C(sp<sup>3</sup>)-H bond functionalization by Cu(ı) halide cluster-mediated O<sub>2</sub> activation

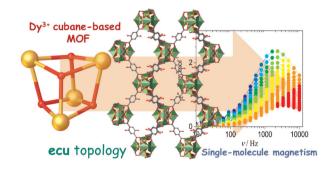
Mingxu Liu, Junkai Cai,\* Lei Huang and Chunying Duan\*



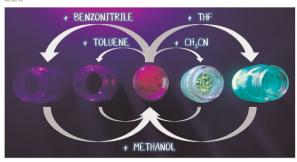
#### 17114

Assembly of dysprosium(III) cubanes in a metal-organic framework with an ecu topology and slow magnetic relaxation

Dong Shao,\* Yi Wan, Jiong Yang, Zhijun Ruan, Junlun Zhu and Le Shi\*



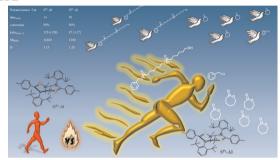
#### 17119



#### Vapochromic behaviour of a gold(ı)-lead(ıı) complex as a VOC sensor

Sonia Moreno, David Royo, Abdel G. El-Hachimi, María Rodríguez-Castillo, Miguel Monge, M. Elena Olmos\* and José M. López-de-Luzuriaga\*

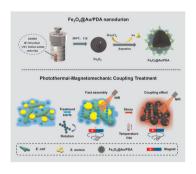
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#### Improvement of catalytic activity of aluminum complexes for the ring-opening polymerization of $\varepsilon$ -caprolactone: aluminum thioamidate and thioureidate systems

Prasanna Kumar Ganta, Mallemadugula Ravi Teja, Chun-Juei Chang, Anandan Sambandam, Rajiv Kamaraj, Yu-Ting Chu, Shangwu Ding, Hsing-Yin Chen and Hsuan-Ying Chen\*

#### 17148



#### Size-dependent magnetomechanically enhanced photothermal antibacterial effect of Fe<sub>3</sub>O<sub>4</sub>@Au/ PDA nanodurian

Yunqi Xu, Kang Wang, Yi Zhu,\* Jing Wang, Dazheng Ci, Min Sang, Qunling Fang, Huaxia Deng, Xinglong Gong,\* Ken Cham-Fai Leung and Shouhu Xuan\*

#### 17163



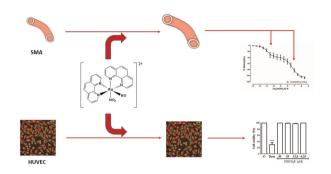
#### A closed-shell phenalenyl-based dinuclear iron(III) complex as a robust cathode for a one-compartment H<sub>2</sub>O<sub>2</sub> fuel cell

Nisha Kamboj, Ayan Dey, Prem Lama, Moumita Majumder,\* Srijan Sengupta\* and Ramesh K. Metre\*

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Ru(II) based dual nitric oxide donors: electrochemical and photochemical reactivities and vasorelaxant effect with no cytotoxicity

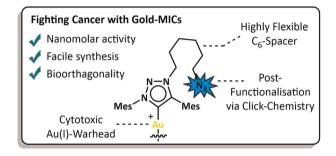
Carlos D. S. da Silva, Kleber Q. Ferreira, Cássio S. Meira, Milena B. P. Soares, Rajana dos Anjos Moraes, Fênix Alexandra Araújo, Darizy Flavia Silva and Denise S. de Sá\*



#### 17185

Exploiting click-chemistry: backbone postfunctionalisation of homoleptic gold(1) 1,2,3triazole-5-ylidene complexes

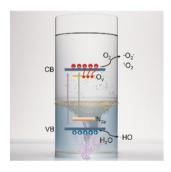
Leon F. Richter, Fernanda Margues, João D. G. Correia, Alexander Pöthig and Fritz E. Kühn\*



#### 17193

Activation of 2D titanate nanosheet photocatalysts by nitrogen doping and solution plasma processing

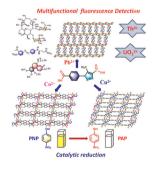
Yanmei Xing, Yiyan Zhang, Changhua Wang,\* Rui Wang, Dashuai Li, Shuang Liang and Xintong Zhang\*



#### 17201

Smart crystalline framework materials with a triazole carboxylic acid ligand: fluorescence sensing and catalytic reduction of PNP

Qiu Lv, Qing Lin Guan, Jin Long Li, Jin Xiao Li, Jing Jin,\* Feng Ying Bai\* and Yong Heng Xing



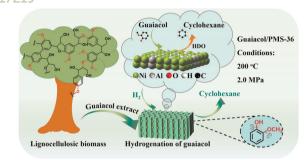
# 17213 N<sub>2</sub> CO<sub>2</sub> CH<sub>4</sub> N<sub>3</sub> CO<sub>2</sub> CH<sub>4</sub> One-step Imine Condensation

ZIF-8/90-PI

## One-step synthesis of a ZIF-8/90-based type I porous liquid

Jingqiu Hu, Zhaofang Liu, Shuangyin Tang, Meng Yao, Dezhen Zhang, Mifen Cui, Dong Yang, Jihai Tang,\* Xu Qiao and Zhuxiu Zhang\*

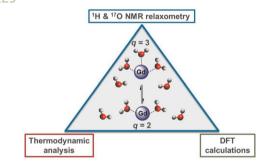
17219



Confining redox-active metal sites in acidic porous scaffolds for the catalytic transformation of lignin-derived phenols to naphthenes

Hang Li, Guan-Ze Chen and Chuan-De Wu\*

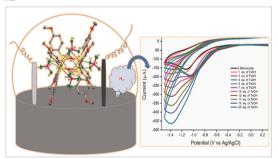
17229



## Effect of hydration equilibria on the relaxometric properties of Gd(III) complexes: new insights into old systems

Alessandro Nucera, Carlos Platas-Iglesias,\* Fabio Carniato and Mauro Botta\*

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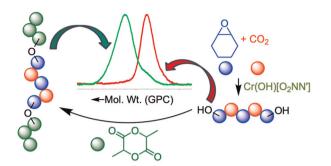
#### Electrocatalytic hydrogen evolution mediated by an organotelluroxane macrocycle stabilized through secondary interactions

Gujju Narsimhulu, Calvin Samuel, Sathishkumar Palani, Sai Hemant Kumar Dasari, Kothandam Krishnamoorthy\* and Viswanathan Baskar\*

#### 17249

Controlled synthesis of polycarbonate diols and their polylactide block copolymers using amino-bis(phenolate) chromium hydroxide complexes

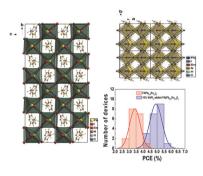
Kaijie Ni, Louise N. Dawe, Amy A. Sarjeant and Christopher M. Kozak\*



#### 17258

Diammonium spacer-induced stable zigzag type 2D Dion-Jacobson lead/tin-based perovskite solar cells

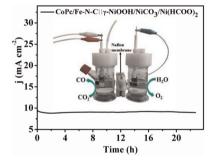
Mi-Hee Jung



#### 17273

Assembly of highly efficient overall  $CO_2 + H_2O$ electrolysis cell with the matchup of CO<sub>2</sub> reduction and water oxidation catalyst

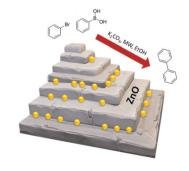
Li Zhang, Hong-Lin Zhu, Zhong-Yi Li and Yue-Qing Zheng\*



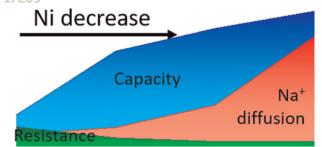
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Controllable deposition of dispersed Pd nanoparticles on ZnO for Suzuki-Miyaura cross-coupling reactions

Viviana Bressi, Thomas Len,\* Daniele Polidoro, Roberto Esposito, Michal Mazur, Maurizio Selva, Claudia Espro and Rafael Luque\*



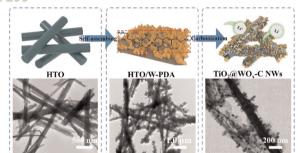
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#### Sustainable, low Ni-containing Mg-doped layered oxides as cathodes for sodium-ion batteries

Pedro Lavela,\* Julia Leyva and José Luis Tirado

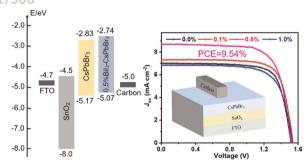
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#### Anchoring tungsten oxide nanorods on TiO2 nanowires coupled with carbon for efficient lithium-ion storage

Teng Wang, Yifan Qin, Renquan Hu, Zehui Wei and Yong Yang\*

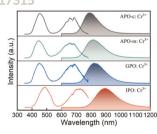
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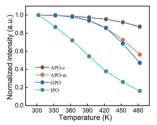


#### Enhanced performance of Bil3-incorporated CsPbBr<sub>3</sub> solar cells

Yuqi He, Zhenyang Li, Manying Liu,\* Saiqi Liu, Junjie Fu, Yange Zhang, Qiuye Li, Yuping Tong\* and Zhi Zheng\*

#### 17315





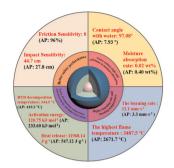
#### Spectrally tunable near-infrared photoluminescence in MP<sub>3</sub>O<sub>9</sub>:Cr<sup>3+</sup> (M = Al, Ga, In) phosphate phosphors

Lipeng Jiang, Xue Jiang,\* Liangliang Zhang, Guocai Lv and Yanjing Su\*

#### 17324

Enhanced thermal, safety and anti-hygroscopicity performance of core-shell ammonium perchlorate with a double coating layer

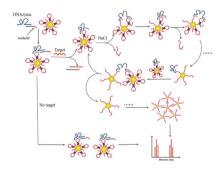
Xiaodong Gou, Wei Liu,\* Jiaxi Zheng, Weigiang Tang, Binggi Xu, Zhongliang Ma, Chong Chen, Fei Xiao and Jiangbo Zhang



#### 17340

Sensitive detection of microRNA by dynamic light scattering based on DNAzyme walker-mediated AuNPs self-assembly

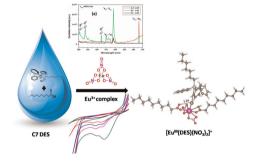
Haiyun Liu,\* Na Ren, Yi Gao, Tingfan Wu, Boren Sui, Zhen Liu, Bin Chang, Man Huang and Hong Liu



#### 17349

Understanding the excited state dynamics and redox behavior of highly luminescent and electrochemically active Eu(III)-DES complex

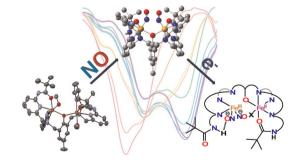
Sushil M. Patil, Ruchi Agrawal, Ruma Gupta,\* Santosh Kumar Gupta, Ayan Ghosh, Sumit Kumar, Kavitha Jayachandran and Tapan K. Ghanty



#### 17360

Exploring second coordination sphere effects in flavodiiron nitric oxide reductase model complexes

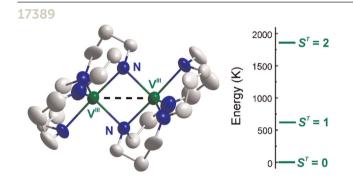
Abigail J. Bracken, Hai T. Dong, Michael O. Lengel and Nicolai Lehnert\*



## 17375 Ar<sup>1</sup>Ar<sup>2</sup>Ar<sup>3</sup> Q PQP-Cu

Evaluation of oxygen-containing pentadentate ligands with pyridine/quinoline/isoquinoline binding sites via the structural and electrochemical properties of mononuclear copper(II) complexes

Yuji Mikata,\* Mizuho Uchida, Hinata Koike, Sunao Shoji, Yutaka Ohsedo, Yasushi Kawai and Takashi Matsuo



#### Experimental and computational study of the exchange interaction between the V(III) centers in the vanadium-cyclal dimer

Andreas Reiß, Maximilian Kai Reimann, Chengyu Jin, Martha Wachter-Lehn, Reinhard K. Kremer, Rainer Pöttgen, Karin Fink, Wim Klopper\* and Claus Feldmann\*

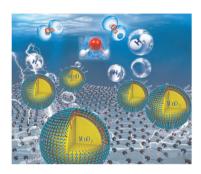
17398



#### Unveiling the electronic and structural consequences of removing two electrons from B<sub>12</sub>H<sub>12</sub><sup>2</sup>

Gerardo Hernández-Juárez, Alejandro Vásquez-Espinal, Fernando Murillo, Alan Quintal, Filiberto Ortíz-Chi, Ximena Zarate, Jorge Barroso and Gabriel Merino\*

17407



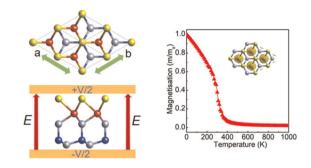
#### Cation-doped sea-urchin-like MnO<sub>2</sub> for electrocatalytic overall water splitting

Haolu Sun, Songlin Chen, Bo Zhang, Jing Wang, Jun Yao,\* Deming Li\* and Guojun Yuan\*

#### 17416

Two-dimensional Janus SVAN<sub>2</sub> (A = Si, Ge) monolayers with intrinsic semiconductor character and room temperature ferromagnetism: tunable electronic properties via strain and an electric field

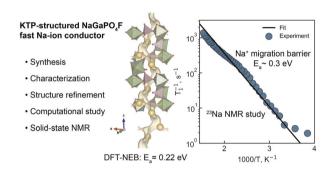
Zhen Gao, Yao He\* and Kai Xiong



#### 17426

#### NaGaPO<sub>4</sub>F - a KTiOPO<sub>4</sub>-structured solid sodium-ion conductor

Sergey N. Marshenya,\* Artem D. Dembitskiy, Dmitry S. Fedorov, Alexey G. Scherbakov, Ivan A. Trussov, Olga Emelianova, Dmitry A. Aksyonov, Anton L. Buzlukov, Nikolai A. Zhuravlev, Tatiana A. Denisova, Nadezhda I. Medvedeva, Artem M. Abakumov, Evgeny V. Antipov and Stanislav S. Fedotov



#### 17438

#### Electrocatalytic hydrogenation of indigo by NiMoS: energy saving and conversion improving

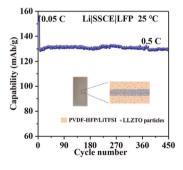
Zihao Liu, Xunkai Yu, Jie Li, Dong Wei, Junjun Peng, Huiyu Jiang, Huihong Liu\* and Sakil Mahmud



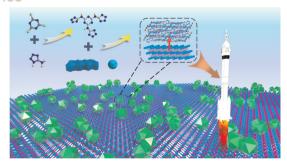
#### 17449

Uniting Young's modulus and the flexibility of solid-state electrolytes for high-performance Li-batteries at room temperature

Haitao Zhao, Yan Zhang, Zehua Zhao, Zhuangzhuang Xue and Lei Li\*



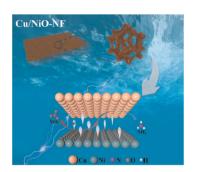
#### 17458



In situ growth of copper-based energetic complexes on GO and an MXene to synergistically promote the thermal decomposition of ammonium perchlorate

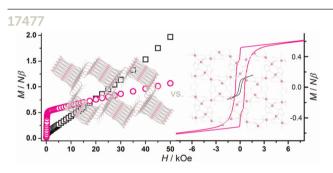
Shuting Li, Min Li, Jinxi Han, Zhengqiang Xia, Sanping Chen,\* Gang Xie, Shengli Gao, Jack Y. Lu and Qi Yang\*

17470



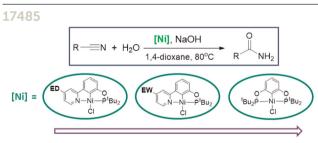
## Cu/NiO nanorods for efficiently promoting the electrochemical nitrate reduction to ammonia

Xu Liu, Yun Duan, Xue-Tao Cheng, Hui-Lin Zhao, Zhiliang Liu and Yan-Qin Wang\*



Interlayer interaction-force-tuned magnetic responses in Co<sup>II</sup>-tetrazolate-carboxylate system from canted antiferromagnet to field-induced metamagnet

Bo Ding, Zhong-Yi Liu, Xin-Jing Gong, Hui-Min Tang, Xiu-Guang Wang, Zheng-Yu Liu, Hui-Ming Dong, Jing Liu and En-Cui Yang\*



the Ni-Cl bond length decrease; the catalytic activity decrease

Structures of nickel chloride and thiolate complexes supported by PCN and POCOP pincer ligands and catalytic reactivity of the chloride complexes

Jia-Xue Mao, Jiarui Chang, Jie Zhang\* and Xuenian Chen\*

#### 17493

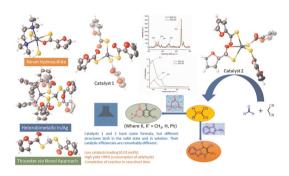
#### 1,3-C-H bond activation on a transient gallium(ı)/isocyanate adduct

Sruthi S. Puthiyaveetil, Aishabibi Kassymbek, Anton Dmitrienko, Melanie Pilkington and Georgii I. Nikonov\*

#### 17499

Synthesis and structural features of indium(III) furan-2-thiocarboxylates showing efficient catalytic activity toward multicomponent reactions via Knoevenagel condensation

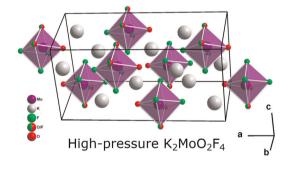
Krishna Kumar, Raj Kumar Sahani, Somenath Garai and Subrato Bhattacharya\*



#### 17514

#### A new high-pressure polymorph of K<sub>2</sub>MoO<sub>2</sub>F<sub>4</sub>

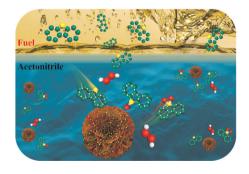
Fabian Zimmerhofer and Hubert Huppertz\*



#### 17524

Defective silicotungstic acid-loaded magnetic floral N-doped carbon microspheres for ultra-fast oxidative desulfurization of high sulfur liquid fuels

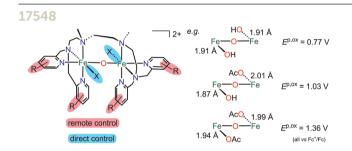
Yefeng Liu,\* Xiaojie Yin, Chuan Li, Zhong Xie, Fuyan Zhao, Jing Li, Jinpei Hei, Yang Han, Nannan Wang\* and Peng Zuo\*



## 

#### Influence of the organic cation on the formation of hexahalotechnetates: X-ray, thermal and comparative analyses of non-covalent interactions

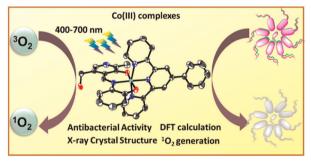
Anton P. Novikov, Karim A. Zagidullin,\* Mikhail A. Volkov, Konstantin E. German, Iurii M. Nevolin and Mikhail S. Grigoriev



## Direct and remote control of electronic structures and redox potentials in $\mu\text{-}oxo$ diferric complexes

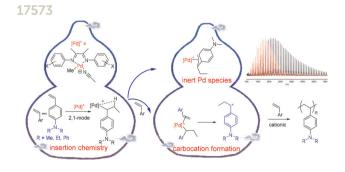
Sebastian Finke, Anja Stammler, Jan Oldengott, Stephan Walleck and Thorsten Glaser\*

#### 17562



#### Polypyridyl-based Co(III) complexes of vitamin B<sub>6</sub> Schiff base for photoactivated antibacterial therapy

Apurba Mandal, Rohit Rai, Sukanta Saha, Rajesh Kushwaha, Li Wei, Hemonta Gogoi, Arif Ali Mandal, Ashish Kumar Yadav, Huayi Huang,\* Arnab Dutta, Prodyut Dhar\* and Samya Banerjee\*



# Experimental and theoretical insights into palladium-mediated polymerization of para-N,N-disubstituted aminostyrene

Chi Shing Cheung, Zonglin Qiu, Donghui Li, Huiyun Deng, Handou Zheng\* and Haiyang Gao\*