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ISSN 1477-9226 CODEN DTARAF 52(21) 6947–7356 (2023)



### Cover

See Constantina Papatriantafyllopoulou, Yiannis Sanakis, Anastasios J. Tasiopoulos *et al.*, pp. 6997–7008.

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### Inside cover

See Zehra Altuntaş Bayır *et al.*, pp. 7009–7020.

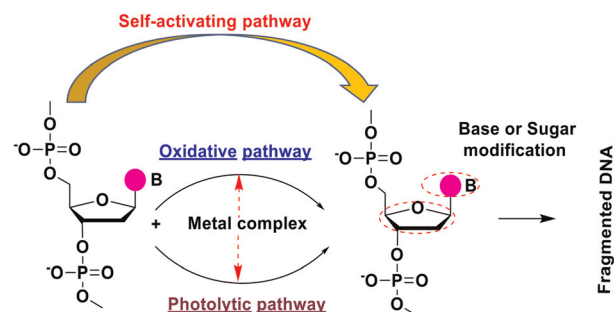
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## PERSPECTIVE

6961

### Transition metal complexes as self-activating chemical nucleases: proficient DNA cleavage without any exogenous redox agents

Pramod Kumar,\* Sunil Tomar, Krishan Kumar and Sushil Kumar\*

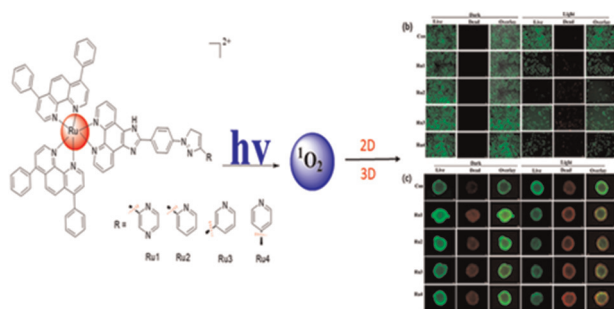


## COMMUNICATIONS

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### Synthesis and evaluation of four novel nitrogen-heterocyclic ruthenium polypyridyl complexes as photosensitizers for one and two-photon photodynamic therapy

Junfeng Kou,\* Jinchao Shen, Mingwei Lin, Kai Xiong, Lili Wang, Fangmian Wei and Junfeng Zhang



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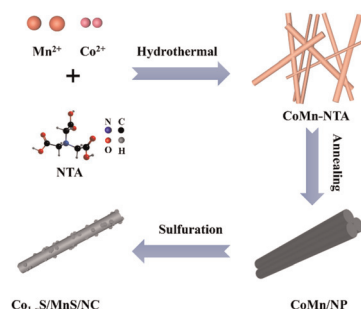


## COMMUNICATIONS

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**1D hybrid metal coordination polymer-derived hierarchical  $\text{Co}_{1-x}\text{S}/\text{MnS}/\text{NC}$  nanowires for advanced sodium-ion batteries**

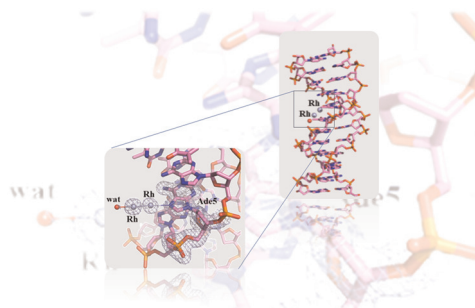
Haibin Wang, Lantao Chen, Feng Xu, Yufei Zhang\* and Haosen Fan\*



6992

**Dirhodium tetraacetate binding to a B-DNA double helical dodecamer probed by X-ray crystallography and mass spectrometry**

Gabiella Tito, Romualdo Troisi, Giarita Ferraro, Andrea Geri, Lara Massai, Luigi Messori, Filomena Sica and Antonello Merlino\*

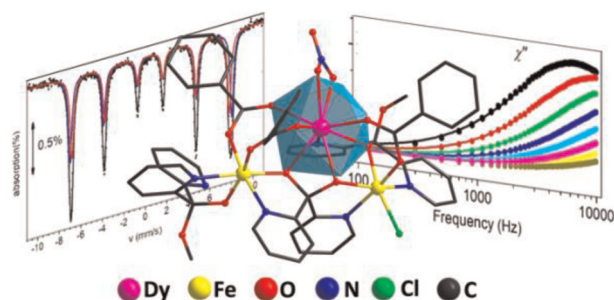


## PAPERS

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**Heterometallic clusters based on an uncommon asymmetric "V-shaped"  $[\text{Fe}^{3+}(\mu\text{-OR})\text{Ln}^{3+}(\mu\text{-OR})_2\text{Fe}^{3+}]^{6+}$  ( $\text{Ln} = \text{Gd}, \text{Tb}, \text{Dy}, \text{Ho}$ ) structural core and the investigation of the slow relaxation of the magnetization behaviour of the  $[\text{Fe}_2\text{Dy}]$  analogue**

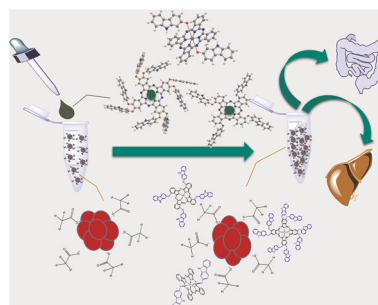
Maria Savva, Dimitris I. Alexandropoulos, Michael Pissas, Spyros P. Perlepes, Constantina Papatriantafyllopoulou,\* Yiannis Sanakis\* and Anastasios J. Tasiopoulos\*



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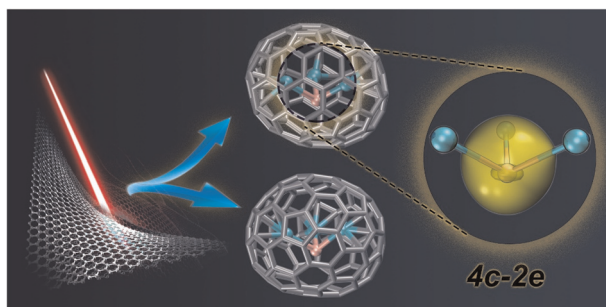
**The effect of phthalocyanine's periphery on the biological activities of carbazole-containing metal phthalocyanines**

Nazli Farajzadeh, H. Yasemin Yenilmez, Dilek Bahar, Nilgün Güler Kuşçulu, Emine Kılıçkaya Selvi and Zehra Altuntaş Bayır\*



## PAPERS

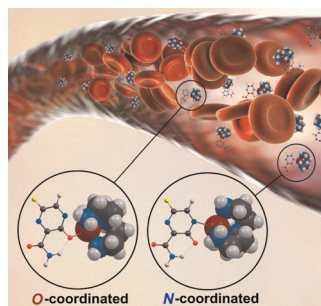
7021



### Structure and bonding properties of the platinum-mediated tetrametallic endohedral fullerene $\text{La}_3\text{Pt}@C_{98}$

Yameng Hou, Lei Mu, Sijin Zhou, Yicheng Xu and Xianglei Kong\*

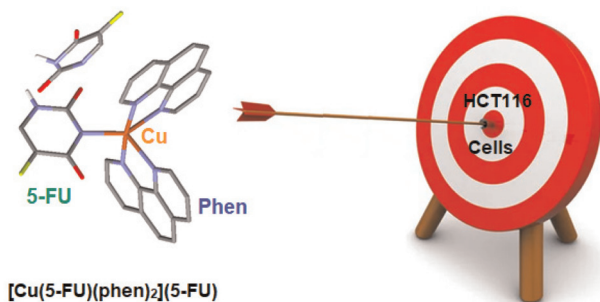
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### A tris(2-aminoethyl)amine-based zinc complex as a highly water-soluble drug carrier for the anti-COVID-19 drug favipiravir: a joint experimental and theoretical study

Farshid Hajibabaei, Samaneh Sanei Movafagh, Sadegh Salehzadeh\* and Robert William Gable

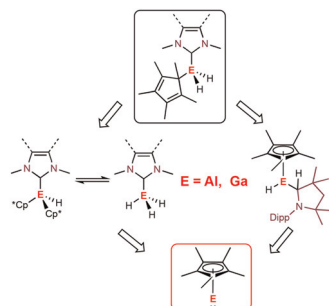
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### Water-soluble copper(II) 5-fluorouracil complexes bearing polypyridyl co-ligands: synthesis, structures and anticancer activity

Ceyda Içsel,\* Veysel T. Yılmaz, Muhittin Aygun, Merve Erkisa and Engin Ulukaya

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### Subvalent group 13 molecules by carbene-induced hydrogen abstraction

Luis Werner, Andreas Hock, Christian Luz, Melanie Riethmann and Udo Radius\*



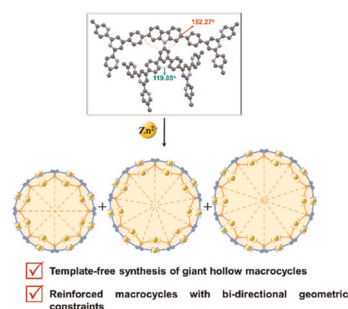


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**Bi-directional geometric constraints in the construction of giant dual-rim nanorings**

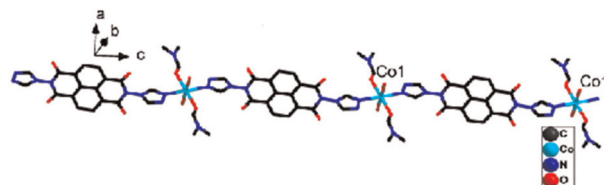
Wanying Zhong, Zhantao Wang, Wei-Dong Yu, Ning Wang, Fan Fu, Jun Wang, He Zhao, Die Liu, Zhilong Jiang,\* Pingshan Wang\* and Mingzhao Chen\*



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**A one-dimensional cobalt-based coordination polymer as a cathode material of lithium-ion batteries**

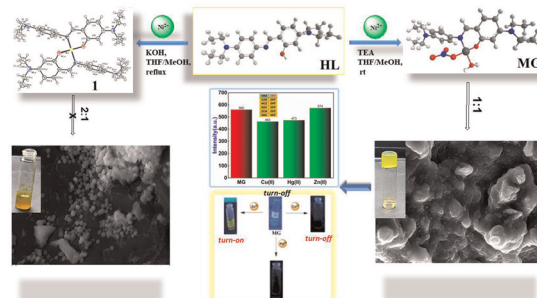
Daozhen Shen, Yanyong Sha, Chen Chen, Xiaojuan Chen, Qingyan Jiang, Hongjiang Liu,\* Wenlong Liu\* and Qi Liu\*



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**A multi-cation responsive Ni(II)-supramolecular metallogel mimics a molecular keypad lock via reversible fluorescence switching**

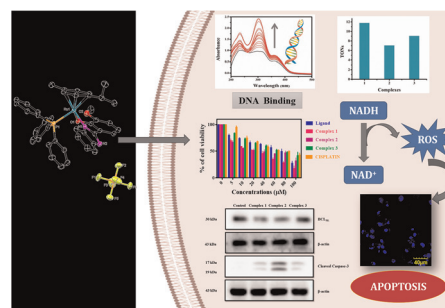
Vaishali Singh, Shubhra Kala, Tanmay Rom, Avijit Kumar Paul and Rampal Pandey\*



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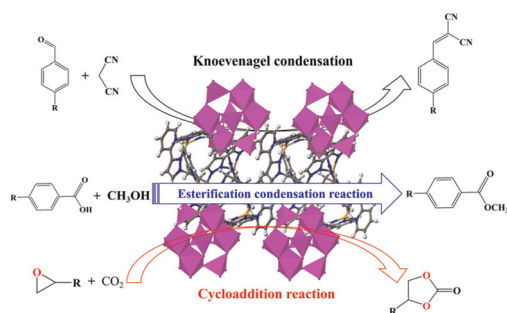
**Studies on anticancer properties with varying co-ligands in a Ru(II) arene benzimidazole system**

Pragti, Sreshtha Nayek, Satyam Singh, Avinash Sonawane, Ivo Grabchev, Rakesh Ganguly and Suman Mukhopadhyay\*



## PAPERS

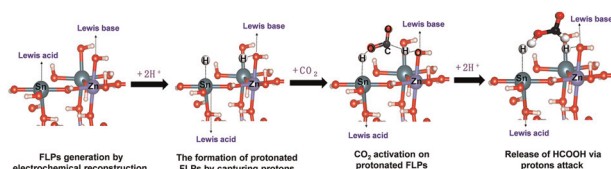
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**$\theta$ -[Mo<sub>8</sub>O<sub>26</sub>]<sup>4-</sup>-based multifunctional hybrid material for high catalytic performance on the cycloaddition of CO<sub>2</sub>, esterification and knoevenagel condensation**

Zhengguo Zhang, Hongxiao Lv, Kun Yang\* and Xiutang Zhang\*

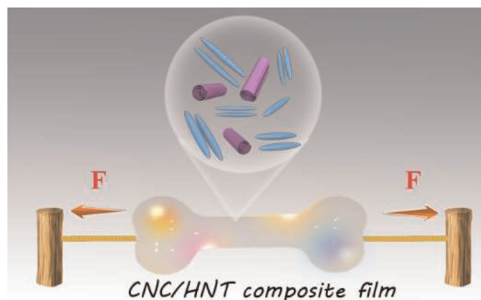
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**Electrochemically stable frustrated Lewis pairs on dual-metal hydroxides for electrocatalytic CO<sub>2</sub> reduction**

Weining Zhang, Yuandong Yan, Jing Wang, Zhenhua Yang, Taozhu Li, Hu Li, Shicheng Yan,\* Tao Yu, Weiliu Fan and Zhigang Zou

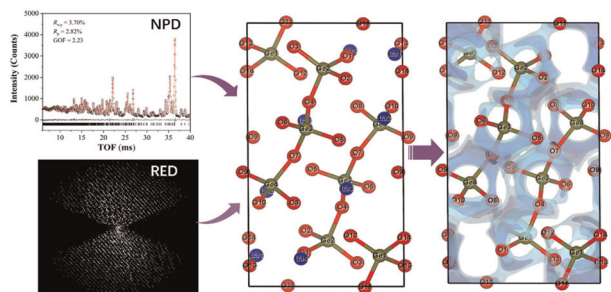
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**Halloysite nanotubes enhance the mechanical properties and thermal stability of iridescent cellulose nanocrystal films**

Huan Gao, Miguel A. Soto, Joanna K. Szymkowiak, Lucas J. Andrew, Wadood Y. Hamad and Mark J. MacLachlan\*

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**Mixed electronic and oxide ionic conduction and migration mechanisms in digermanate La<sub>2-x</sub>Ca<sub>x</sub>Ge<sub>2</sub>O<sub>7-x/2</sub>**

Lu Liang, Xiaohui Li,\* Xiaoge Wang, Zhaoji Luo, Kun Lin, Qiang Li, Sihao Deng, Lunhua He, Xiaojun Kuang and Xianran Xing\*

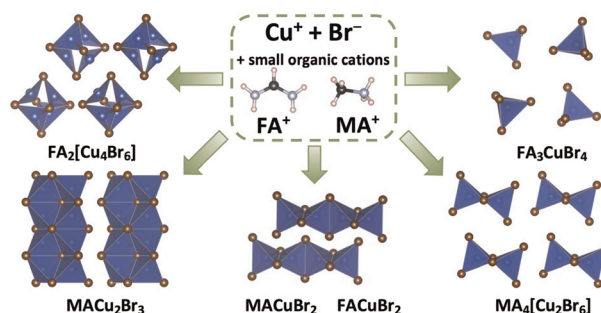


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### Exceptional structural diversity of hybrid halocuprates(II) with methylammonium and formamidinium cations

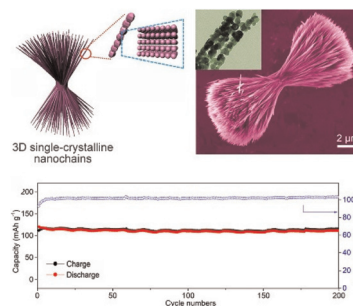
Daria E. Belikova, Sergey A. Fateev, Victor N. Khrustalev, Ekaterina I. Marchenko, Eugene A. Goodilin, Shenghao Wang\* and Alexey B. Tarasov\*



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### A single-crystalline Co<sub>3</sub>O<sub>4</sub> nanoparticle-assembled three-dimensional chain as an ultra-stable magnesium-ion battery cathode at different temperatures

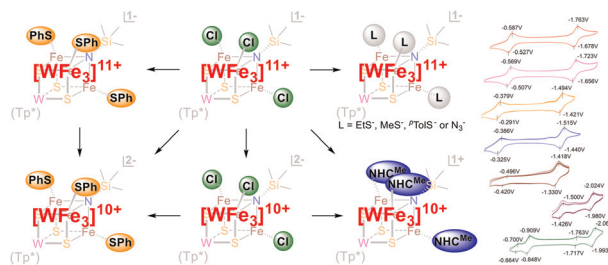
Qian Ding, Tianli Han, Xirong Lin, Ting Zhou, Jinyun Liu\* and Huigang Zhang\*



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### Cubane-type tungsten–iron–sulfur clusters with a nitrogen atom in the core: terminal ligand substitutions and redox behaviors

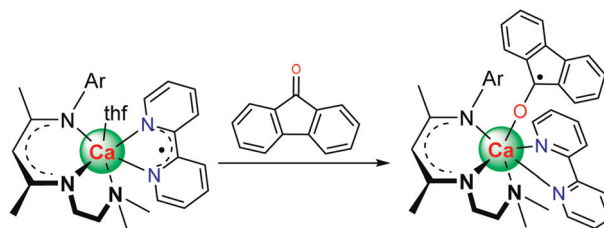
Hong-Ying Zhang, Shu-Juan Qiu, Huan-Huan Yang, Meng-Ting Wang, Jie Yang, Han-Bin Wang, Nai-Hao Liu and Xu-Dong Chen\*



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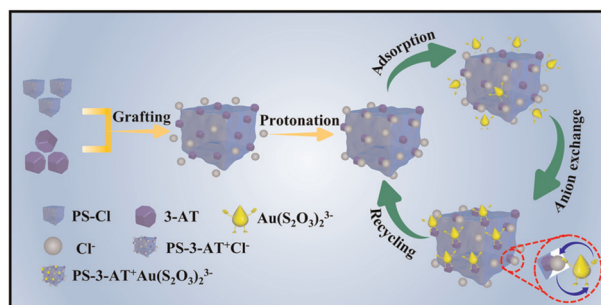
### A 2,2'-bipyridyl calcium complex: synthesis, structure and reactivity studies

Lingfeng Wu, Zhenghui Wang, Yumiao Liu, Liang Chen\* and Wenshan Ren\*



## PAPERS

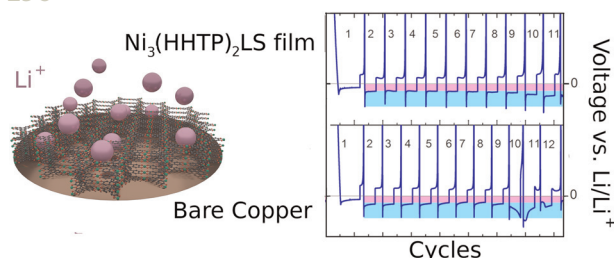
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### Synthesis of azole-functionalized microspheres and their adsorption properties for gold(I) thiosulfate complex

Li Zhao, Shuliang Chen, Xianzhi Hu\* and Futing Zi\*

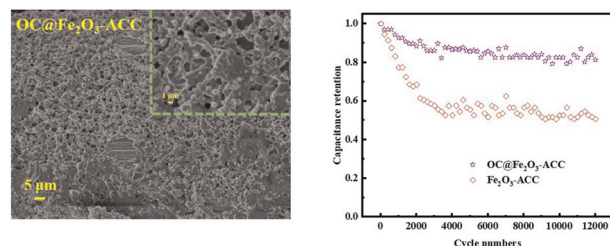
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### Evaluation of triphenylene-based MOF ultrathin films for lithium batteries

Isabel Ciria-Ramos, Inés Tejedor, Lucía Caparros, Beatriz Doñagueda, Oscar Lacruz, Ainhoa Urtizberea, Olivier Roubeau, Ignacio Gascón and Marta Haro\*

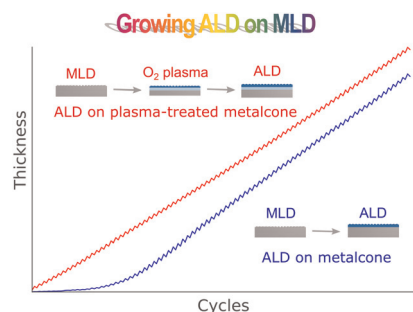
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### Fishnet-like double active layer-loaded carbon fiber for electrical double-layer capacitors

Yanli Fang, Xianguo Ma,\* Jianwei Ren and Hui Wang\*

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### Depositing ALD-oxides on MLD-metalcones: enhancing initial growth through O<sub>2</sub> plasma densification

Juan Santo Domingo Peñaranda, Matthias M. Minjauw, Sofie S. T. Vandenbroucke, Robin Petit, Jin Li, Jolien Dendooven and Christophe Detavernier\*



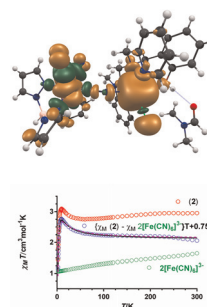


## PAPERS

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# Experimental and theoretical magnetostructural studies on discrete heterometallic cyanide-bridged dinuclear $\text{Fe}^{\text{III}}\text{Mn}^{\text{II}}$ and tetranuclear $\text{Fe}_2^{\text{III}}\text{Cu}_2^{\text{II}}$ complexes bearing tripodal pyrazolyl borate and tetradentate phenolate-based ligands

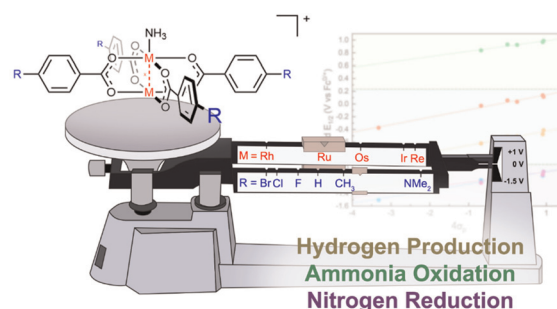
Akhilesh Kumar, Amit Rajput, Pawanjeet Kaur, Indresh Verma, Rohan D. Erande, Saleem Javed, Julia Ktak,\* Shefa' F. Alrebei, Antonio J. Mota,\* Enrique Colacio\* and Himanshu Arora\*



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# Computational analysis of metal–metal bonded dimetal tetrabenzoate redox potentials in the context of ammonia oxidation electrocatalysis

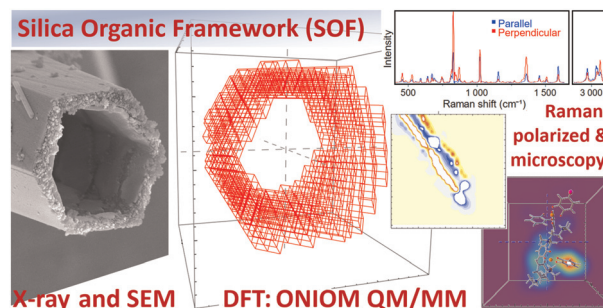
Alex M. Pavelic, Michael J. Trenerry and John F. Berry\*



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# Quantitative Raman microscopy to describe structural organisation in hollow microcrystals built from silicon catecholates and amines

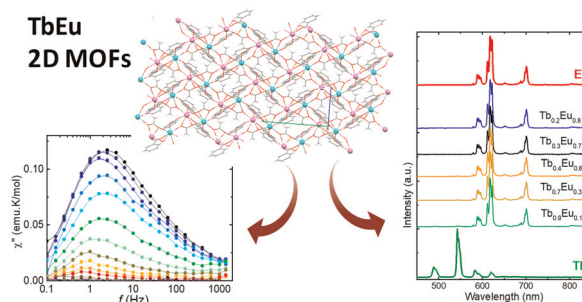
Victor V. Volkov, Toby J. Blundell, Stephen Argent and Carole C. Perry\*



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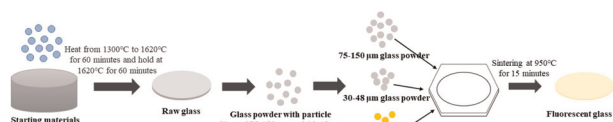
# Luminescent and magnetic [TbEu] 2D metal–organic frameworks

E. Bartolomé,\* A. Arauzo, S. Fuertes, L. Navarro-Spreafico, P. Sevilla, H. Fernández Cortés, N. Settineri, S. J. Teat and E. C. Sañudo\*



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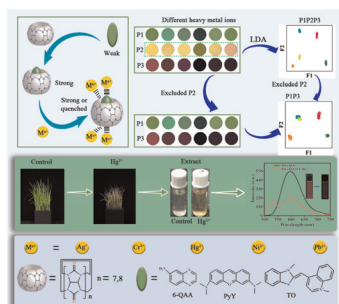
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## Improved optical properties of phosphors-in-glass through the optimal size distribution of glass powder

Mingdong Hong, Chao Chen, Huanping Wang,\*  
Ruoshan Lei,\* Youjie Hua, Zhiyang Wang, Zhiwei Mo  
and Shiqing Xu

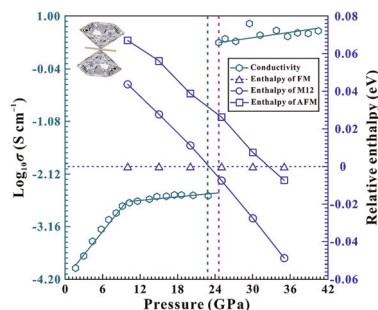
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## A supramolecular fluorescence array sensor for toxic heavy metal ion detection in environmental water and rice seedling extracts

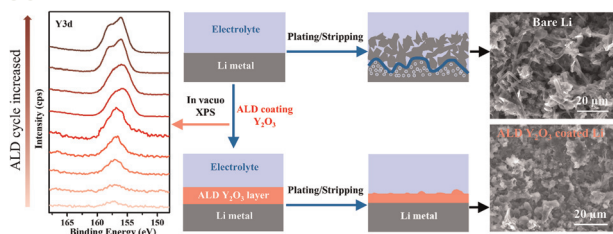
Ru-Pei Yang, Shu-Zhen Huang, Kai-Ni Wei, Qing Tang,  
Zhu Tao, Ying Huang\* and An-Ting Zhao\*

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Pressure-driven structural phase transitions and metallization in the two-dimensional ferromagnetic semiconductor CrBr<sub>3</sub>

Meiling Hong, Lidong Dai,\* Haiying Hu,\* Xinyu Zhang,  
Chuang Li and Yu He

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## Atomic layer deposition of yttrium oxide as a protective coating for lithium metal anodes

Bo Zhao, Jin Li, Maxime Guillaume, Véronique Cremers,  
Lowie Henderick, Jolien Dendooven and  
Christophe Detavernier\*

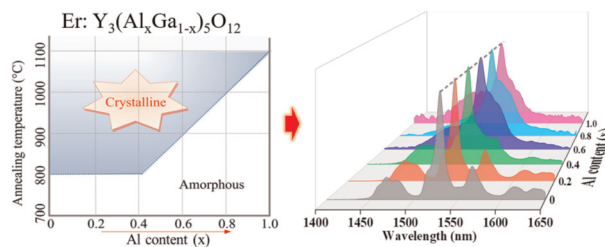


## PAPERS

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## Atomic layer deposition of Er-doped yttrium aluminum gallium garnet nanofilms with tunable crystallization and electroluminescence properties

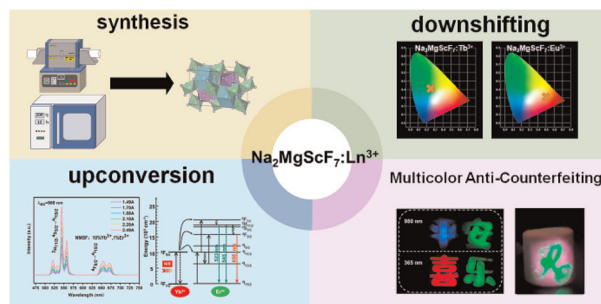
Zhimin Yu, Kang Yuan, Yang Yang\* and Jiaming Sun\*



7322

Lanthanide-doped  $\text{Na}_2\text{MgScF}_7$  exhibiting downshifting and upconversion emissions for multicolor anti-counterfeiting

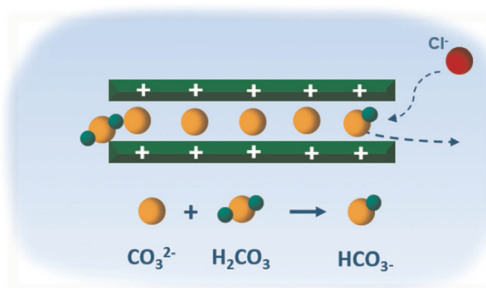
Chengyu Zhuo, Zeyu Lyu,\* Dashuai Sun, Sida Shen, Taixing Tan, Shuai Wei, Zhijun Li, Pengcheng Luo and Hongpeng You\*



7330

## Decarbonating layered double hydroxides using a carbonated salt solution

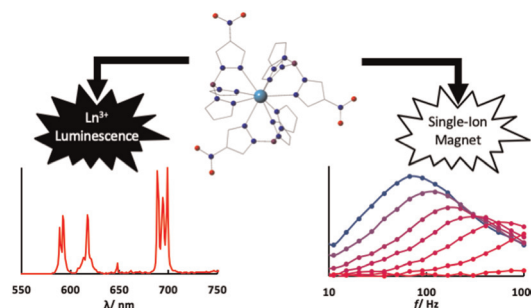
Luofu Min, Jingying Duan, Chuan Song, Yanan Chen, Wen Zhang and Yuxin Wang\*



7336

## Tuning the optical and magnetic properties of lanthanide single-ion magnets using nitro-functionalized trispyrazolylborate ligands

Christopher Hossack, Folasade Abdul, Christopher Cahill and Claire Besson\*



## CORRECTIONS

7352

**Correction: A double responsive fluorescent platform for sensing heavy metal ions based on a dual-emitting fluorescent covalent organic framework hydrogel film**

Yinghua Jia, Jinmin Wang, Limin Zhao and Bing Yan\*

7353

**Correction: Iridium-( $\kappa^2$ -NSi) catalyzed dehydrogenation of formic acid: effect of auxiliary ligands on the catalytic performance**

Alejandra Gomez-España, Jorge L. Lopez-Morales, Belinda Español-Sanchez, Pilar García-Orduña, Fernando J. Lahoz, Manuel Iglesias and Francisco J. Fernández-Alvarez\*

