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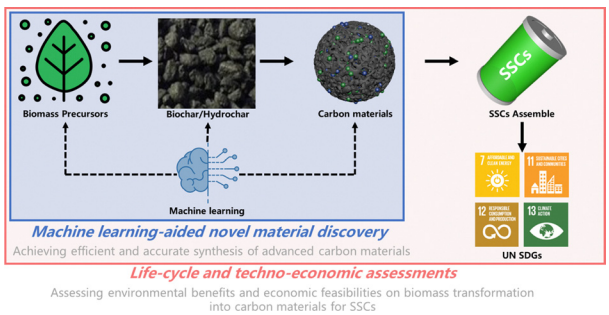
Inside cover
See Montree Sawangphruk *et al.*, pp. 14380-14383. Image reproduced by permission of Montree Sawangphruk from *Chem. Commun.*, 2024, **60**, 14380.

HIGHLIGHTS

14303

Sustainably transforming biomass into advanced carbon materials for solid-state supercapacitors: a review

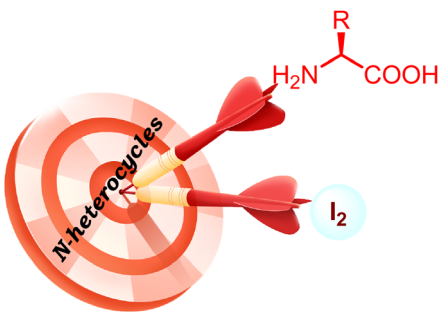
Ruibo Fan, Beichen Xue, Pengfei Tian, Xuesong Zhang, Xiangzhou Yuan* and Huiyan Zhang



14318

Recent advances in the synthesis of N-heterocycles from α-amino acids mediated by iodine

Dong-Sheng Yang, Jia-Chen Xiang* and An-Xin Wu*



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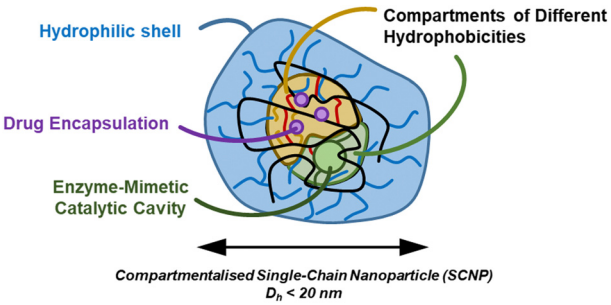
FEATURE ARTICLES

14332

Compartmentalised single-chain nanoparticles and their function

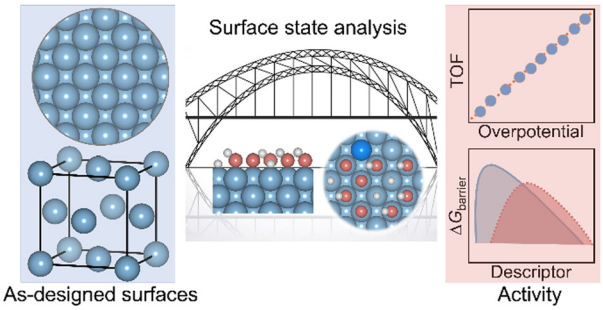
Justus F. Thümmler and Wolfgang H. Binder*



14346

Surface coverage and reconstruction analyses bridge the correlation between structure and activity for electrocatalysis

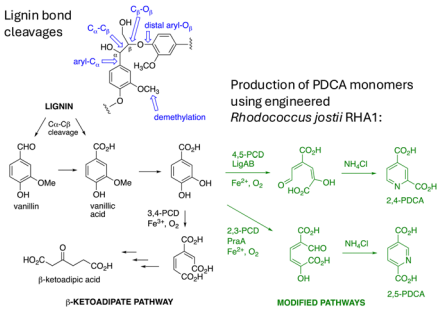
Zhongyuan Guo, Tianyi Wang, Jiang Xu,* Ang Cao* and Hao Li*



14360

Sustainable production of aromatic chemicals from lignin using enzymes and engineered microbes

Victoria Sodré and Timothy D. H. Bugg*

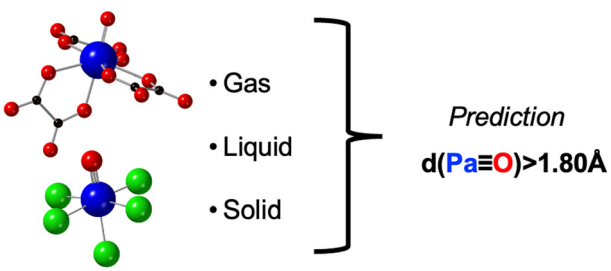


COMMUNICATIONS

14376

Is the protactinium(v) mono-oxo bond weaker than what we thought?

Tamara Shaaban, Hanna Oher, Jean Aupiais, Julie Champion, André Severo Peirera Gomes, Claire Le Naour, Melody Maloubier, Florent Réal, Eric Renault, Xavier Rocquefelte, Bruno Siberchicot, Valérie Vallet and Rémi Maurice*



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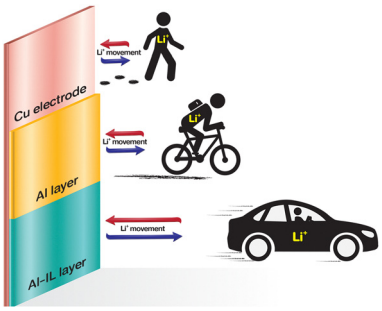
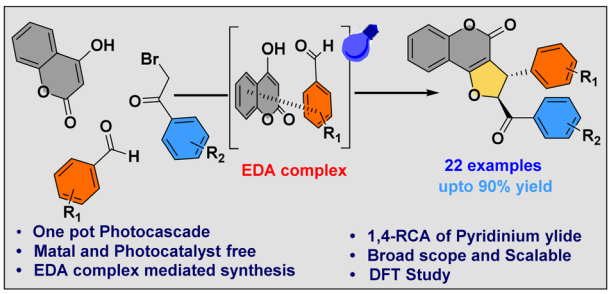
14380



Preconcentration of lithium salt in nanoporous alumina on Cu foil as a concentrated lithium semi-solid layer for anode-free Li-metal batteries

Nichakarn Anansuksawat, Thitiphum Sangsanit, Surat Prempluem, Kan Homlamai, Poramane Chiochan, Ronnachai Songthan, Worapol Tejangkura and Montree Sawangphruk*

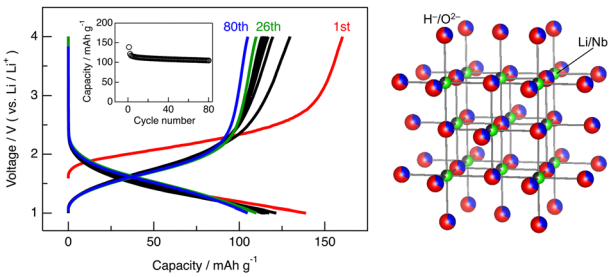
14384



Electron donor–acceptor complex enabled photocascade strategy for the synthesis of *trans*-dihydrofuro[3,2-*c*]chromen-4-one scaffolds *via* radical conjugate addition of pyridinium ylide

Sovan Dey, Arindam Das, Ram Naresh Yadav, Palash Jyoti Boruah, Koushik Sarkar, Amit Kumar Paul and Md. Firoj Hossain*

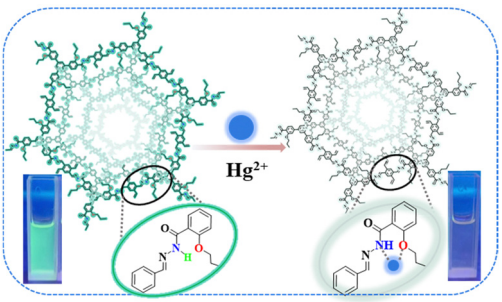
14388



Li_2NbHO_2: a new transition-metal oxyhydride with rock-salt-type structure

Fumitaka Takeiri, Keiko Kusumoto, Kosuke Kawai, Hiroshi Yaguchi, Takashi Saito, Kazuhiro Mori, Saburo Hosokawa, Masashi Okubo and Genki Kobayashi*

14391



Hydrazone-linked covalent organic frameworks for fluorescence detection of Hg^{2+}

Xuefeng Wang, Zhaowei Yang, Lingsuo Meng, Xuehui Li, Hongtao Wei, Jing Ning,* Shitao Wang, Dapeng Cao* and Long Hao

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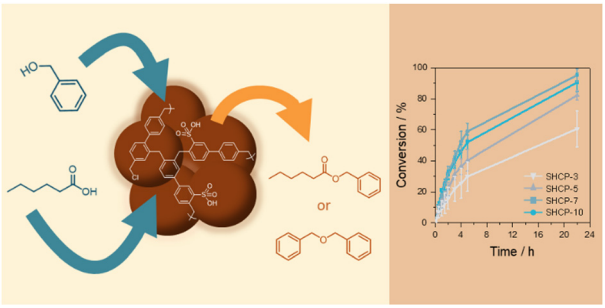
14395

Tuneable sulfonated hypercrosslinked polymers for selective esterification: insights into performance and stability

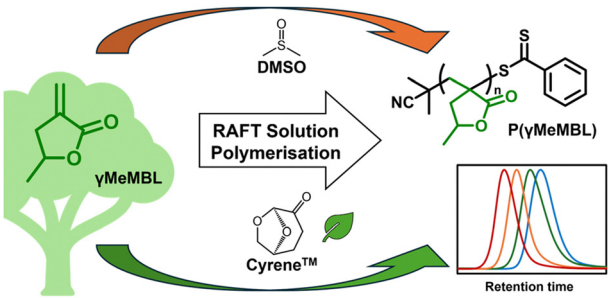
Paul Schweng, Dorian Guerin-Faucheur, Freddy Kleitz* and Robert T. Woodward*



14399

RAFT solution polymerisation of bio-based γ-methyl-α-methylene-γ-butyrolactone monomer in DMSO and Cyrene

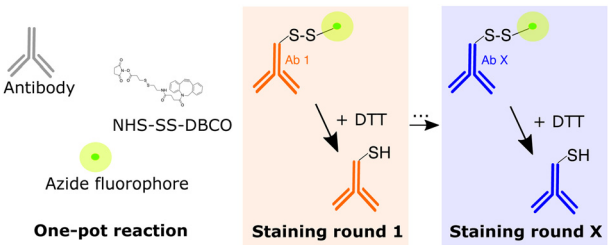
Oliver J. Harris, Ryan R. Larder, Beth Jordan, Imogen Prior, Rita El-Khoury, Khaled O. Sebakhy and Fiona L. Hatton*



14403

Simple generation of cleavable labels for multiplexed imaging

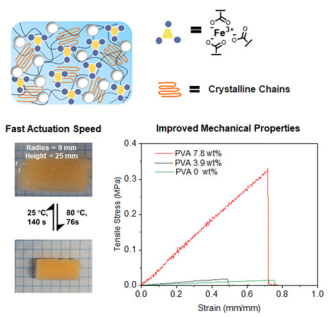
Vincent Van Deuren,* Silke Denis, Robin Van den Eynde, Jonathan Sai-Hong Chui, Francesca Bosisio, Frederik De Smet, Wim Dehaen, Wim Vandenberg and Peter Dedecker



14407

Designing fast-response porous hydrogel actuators with improved toughness

Maryam Adavoudi Jolfaei, Yufeng Zhao, Geoffrey M. Spinks* and Zhen Jiang*



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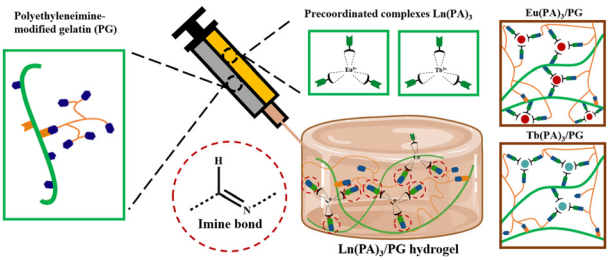
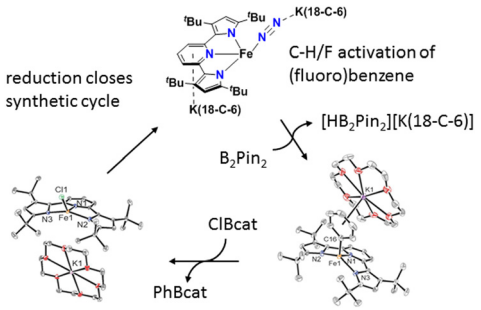


Fabrication of gelatin hydrogels using pre-coordinated lanthanide complexes *via* imine crosslinking

Chen-Cheng Yu, Yu Yun Hsu, Yu-Chia Su, Yi-Chen Yang, Tzu-Ying Wang and Yi-Cheun Yeh*

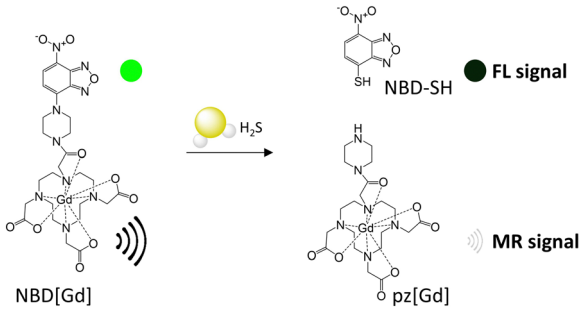
14415



C_{sp^2}–H/F bond activation and borylation with iron

Ethan Zars, Lisa Pick, Achala Kankanamge, Michael R. Gau, Karsten Meyer and Daniel J. Mindiola*

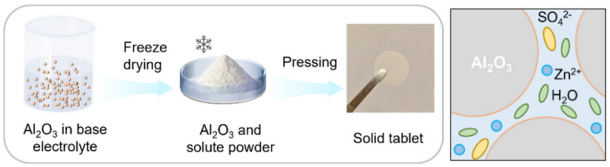
14419



A water-soluble Gd(III)-based fluorescence/T_1-MR dual-modality probe for H_2S sensing

Ho-Nam Mak, Xuanyi Lu, Siyu Pan, Yanjuan Gu, Lijun Jiang* and Wing-Tak Wong*

14423



A liquid-infiltrated Al_2O_3 framework electrolyte enables aqueous zinc batteries

Rongyu Deng, Yi Yuan, Zixuan Li, Alex W. Robertson* and Feixiang Wu*

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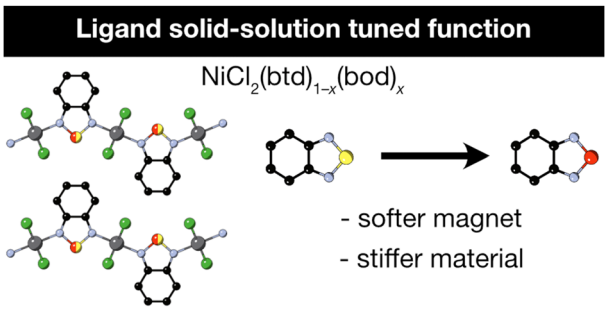
14427

Ligand solid-solution tuning of magnetic and mechanical properties of the van der Waals metal–organic magnet $NiCl_2(btd)_{1-x}(bod)_x$

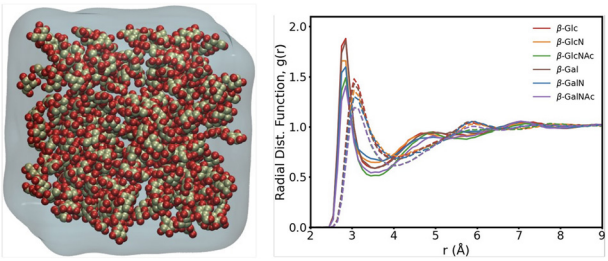
Emily Myatt, Simrun Lata, Jem Pitcairn, Dominik Daisenberger, Silva M. Kronawitter, Sebastian A. Hallweger, Gregor Kieslich, Stephen P. Argent, Jeremiah P. Tidey and Matthew J. Cliffe*



14431

Polarizable AMOEBA force field predicts thin and dense hydration layer around monosaccharides

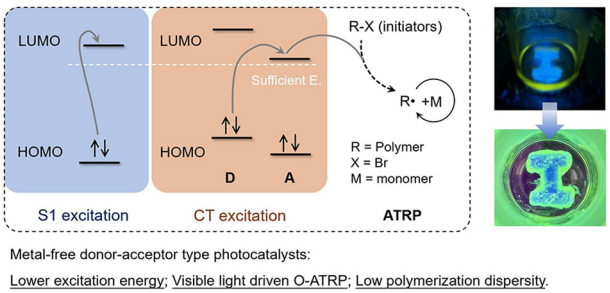
Luke A. Newman, Mackenzie G. Patton, Breyanna A. Rodriguez, Ethan W. Sumner and Valerie Vaissier Welborn*



14435

Metal-free photocatalysts with charge-transfer excited states enable visible light-driven atom transfer radical polymerization

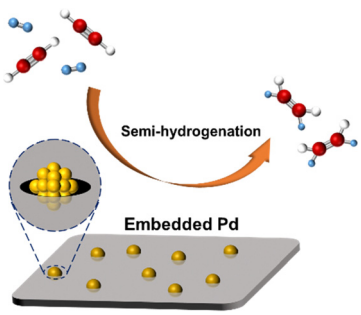
Yuchen Huang, Yangxin Liu, Yingde Yan, Yanjun Gong, Yifan Zhang,* Yanke Che and Jincai Zhao



14439

Semi-hydrogenation of alkynes to alkenes over Pd nanoparticles embedded in Mo_2C prepared from a high-temperature pulse

Chang Zhou, Haitao Han, Jian Zhang,* Xiaoxue Mu, Jianbin Huang, Dongquan Lin and Feng-Shou Xiao*



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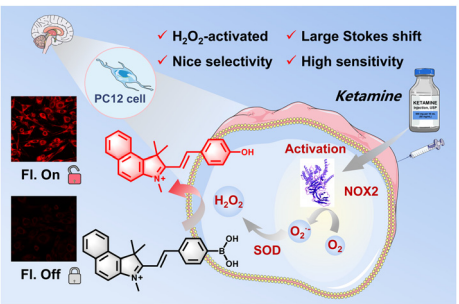
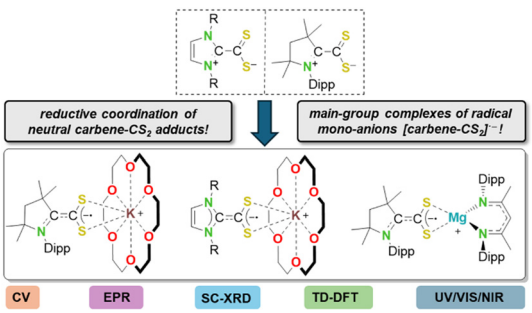


A red turn-on fluorescent probe reveals elevated H_2O_2 in cell anesthesia

Longjie Du, Yu Ning, Wentao Li, Jianfei Kan, Jianchun Li, Jinhong Wang,* Min Wang,* Yanxiang Li and Jin Zhou*

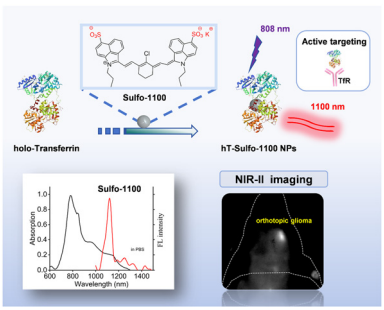
14447



Radical anions of 1,1-azoliumdithiocarboxylates

M. S. Luff, K. Oppel, I. Krummenacher, H. Braunschweig and U. Radius*

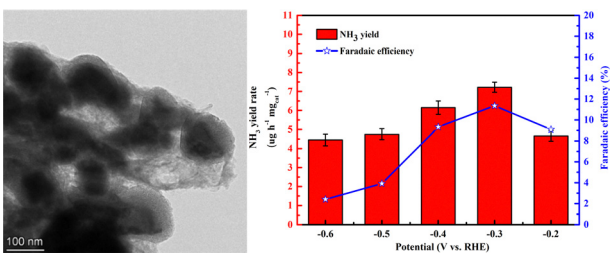
14451



A novel water-soluble NIR-II cyanine dye for fast targeted through-skull fluorescence imaging of orthotopic glioma

Qian Wei, Huixian Jia, Haoyuan Zhao, Wei Tang* and Xinrui Duan*

14455



Electrocatalytic reduction of N_2 to NH_3 by MIL-88-derived pod-like Fe_7Se_8/C nanomaterials under ambient conditions

Gongyao Nie, Huanhuan Zhang, Lanhua Yi,* Xiao Ma, Wei Yi,* Jiawei Wan, Yebo Lu* and Xingzhu Wang*

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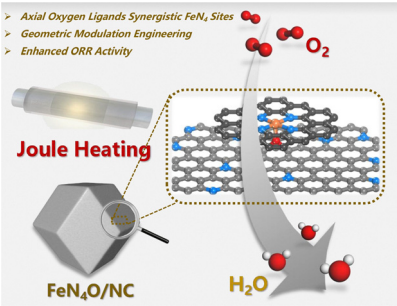
14459

Axial oxygen-bridged FeN_4O/NC produced by ultrafast Joule heating for efficient oxygen reduction reaction

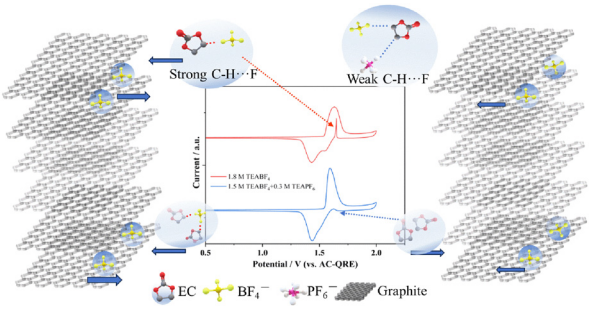
Feng Liu, Xinyu Guo, Yan Zhong, Shaqi Fu, Jingsha Li, Chunmei Zhang, Heng Zhang, Fenghui Ye, Shuai Yuan, Chuangang Hu* and Chunxian Guo*



14463

Uncovering the unusual anodic current during tetrafluoroborate anion deintercalation from a graphite cathode in ethylene carbonate

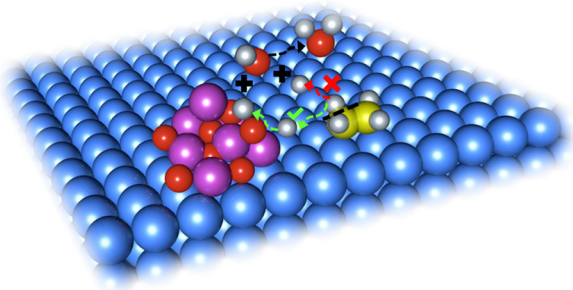
Haibo Liu, Yunju Wang, Guobao Xu* and Hongyu Wang*



14467

Hydrogen spillover for boosted catalytic activity towards hydrazine oxidation

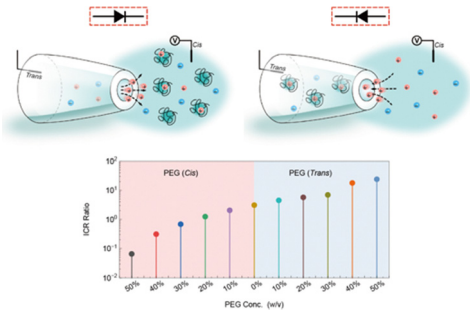
Shuyuan Pan, Yuhua Xie, Chen Li,* Chunsheng Li, Yan Sun* and Zehui Yang*



14471

A switchable and facile ionic diode modulated by polyethylene glycol

Fei Zheng, HongLuan Li, Jun Yang, Haiyan Wang, Guangle Qin, Dapeng Chen and Jingjie Sha*



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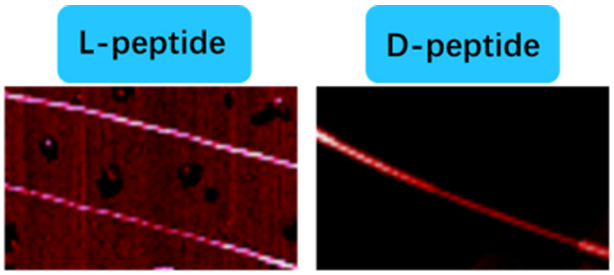
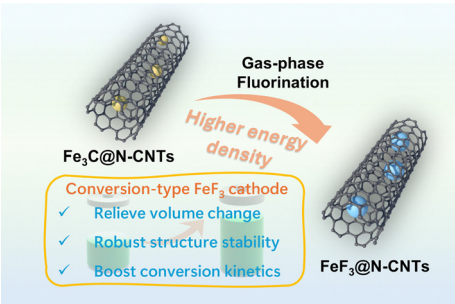
14475



Enantiomeric peptides self-assembling into fibrils with the same handedness

YongFang Zheng, ShiXian Chen, KeJing Mao and Hu Zhu*

14479



Spatially confined FeF_3 cathodes in N-doped carbon nanotubes for lithium storage

Jun Li, Xifei Li,* Mengyao Li, Qinting Jiang, Junqian Liu, Ruixian Duan, Guiqiang Cao, Jingjing Wang and Wenbin Li

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