

# Journal of Materials Chemistry C

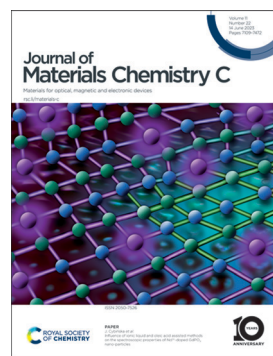
Materials for optical, magnetic and electronic devices

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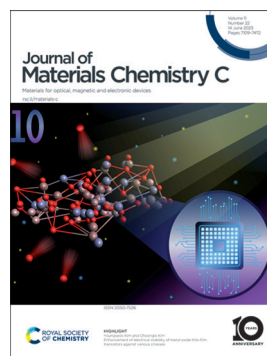
## IN THIS ISSUE

ISSN 2050-7526 CODEN JMCCCC 11(22) 7109–7472 (2023)



### Cover

See J. Cybińska et al., pp. 7227–7242. Image reproduced by permission of Maria Zdończyk from *J. Mater. Chem. C*, 2023, 11, 7227.



### Inside cover

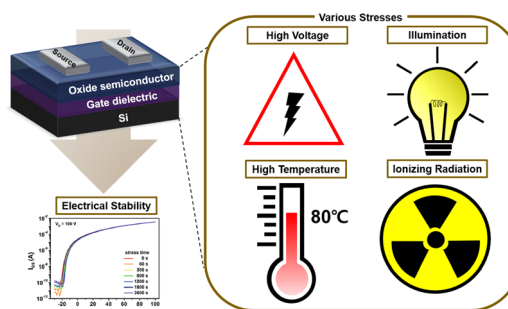
See Youngseok Kim and Choongik Kim, pp. 7121–7143. Image reproduced by permission of Choongik Kim from *J. Mater. Chem. C*, 2023, 11, 7121.

## HIGHLIGHT

7121

### Enhancement of electrical stability of metal oxide thin-film transistors against various stresses

Youngseok Kim and Choongik Kim\*

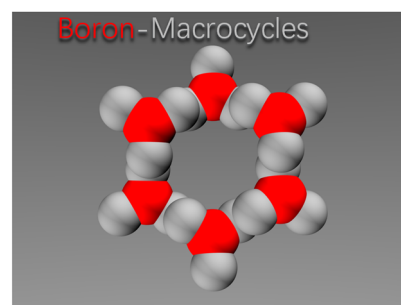


## REVIEWS

7144

### Synthesis, structure, and application of boron-containing macrocycles

Yuhao Wu, Shuchang Li, Haokun Li, Ruquan Ye and Zhenpin Lu\*



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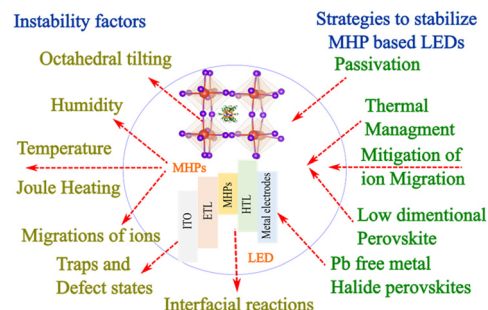


## REVIEWS

7159

### Intrinsic stability of perovskite materials and their operational stability in light-emitting diodes

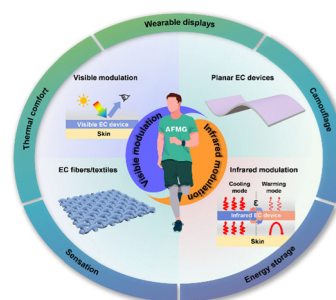
Kishan Lal Kumawat, Karuna Kar Nanda\* and Pachaiyappan Rajamalli\*



7183

### Wearable electrochromic materials and devices: from visible to infrared modulation

Hongwei Fan, Wei Wei, Chengyi Hou, Qinghong Zhang, Yaogang Li, Kerui Li\* and Hongzhi Wang\*

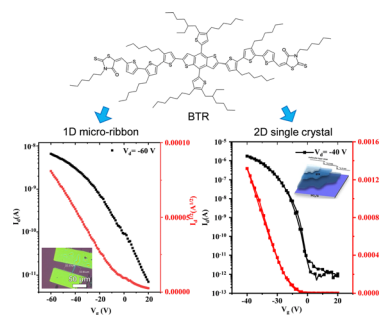


## COMMUNICATIONS

7211

### Morphology controlled synthesis of one-dimensional BTR micro-ribbons and two-dimensional single-crystal films for field-effect transistors

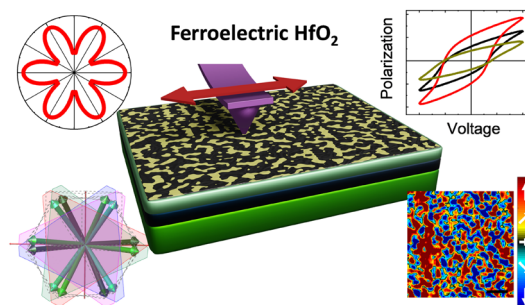
Di Zhao, Qihong Cui,\* Xingyu Zhang, Hongyu Ji, Yuanyuan Hu,\* Liang Qin, Yanbing Hou, Yufeng Hu, Zhidong Lou and Feng Teng\*



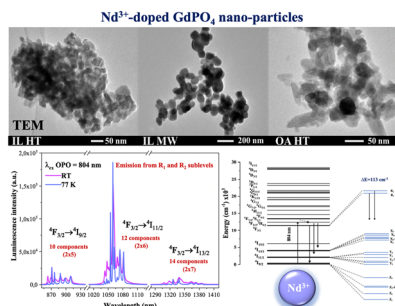
7219

### Vector piezoelectric response and ferroelectric domain formation in $\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2$ films

Huan Tan, Tingfeng Song, Nico Dix, Florencio Sánchez\* and Ignasi Fina\*



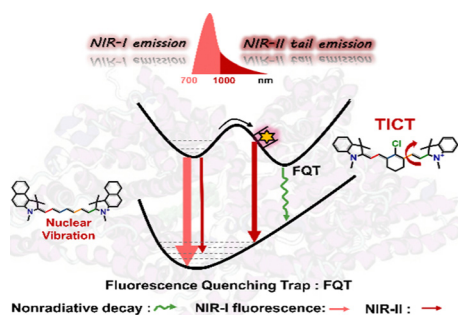
7227



### Influence of ionic liquid and oleic acid assisted methods on the spectroscopic properties of Nd<sup>3+</sup>-doped GdPO<sub>4</sub> nano-particles

J. Pawłó, M. Zdończyk, M. Guzik, G. Boulon, Y. Guyot, M. Wilk-Kozubek, A.-V. Mudring and J. Cybińska\*

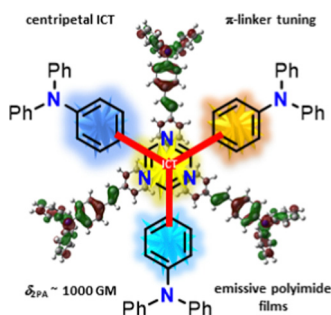
7243



### Origins of near-infrared-II emission tail and fluorescence enhancement of albumin-chaperoned cyanine dyes from a multiscale computational study

Guanyu Jiang, Zhubin Hu, Lang Bai, Cheng Zhong, Sen Lu, Baoshan Han, Zhenrong Sun, Shoujun Zhu, Yongye Liang and Haitao Sun\*

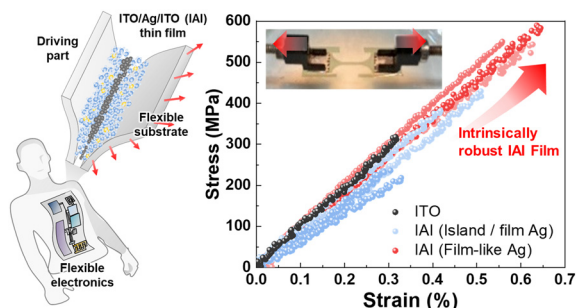
7252



### Centripetal triazine chromophores: towards efficient two-photon absorbers and highly emissive polyimide films

Pavel Šimon, Milan Klikar, Zuzana Burešová, Chrisovalantou Vourdaki, Alexandros Katsidas, Jiří Tydlitát, Jiří Kulhánek, Jiří Zelenka, Mihalis Fakis\* and Filip Bureš\*

7262



### Elucidating the effect of Ag interlayer formation on the intrinsic mechanical properties of free-standing ITO/Ag/ITO thin films

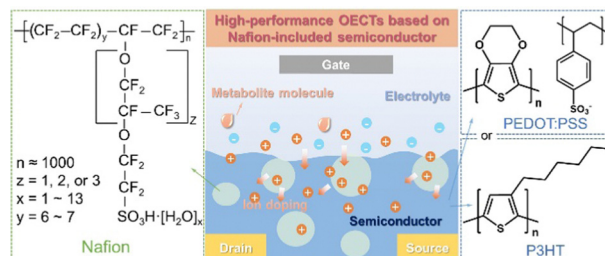
Seung Jin Oh, Sangmin Lee, Kyung Cheol Choi, Jeong Hyun Kwon\* and Taek-Soo Kim\*



7272

### Proton-penetrable Nafion-induced phase separation in organic semiconductors for high-performance organic electrochemical transistors

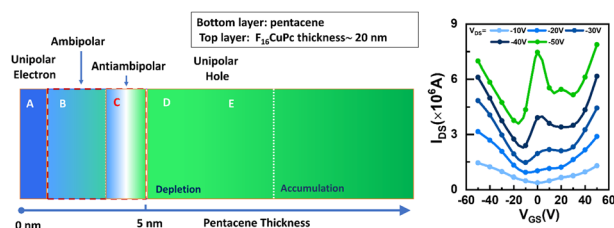
Linrong Zhang, Soukaina Khayour, Guozhang Ren, Shunhao He, Junjie Wang, Liuyingzi Yu, Yaxin Song, Chengcheng Zhu, Xing Kang, Yulong Zhang, Zhongyan Gong, Kun Gao, Jin Wang, Huixiang Sheng, Gang Lu\* and Hai-Dong Yu\*



7283

### Antiamipolar, ambipolar, and unipolar charge transport in organic transistors based on a single vertical P–N heterointerface

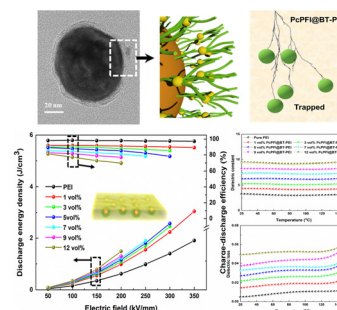
Guidong Wang, Dong Li, Xinyu Wang, Yu Zhang, Hao Zhang and Jun Wang\*



7289

### Enhanced dielectric performance with high-temperature stability by interface-modulation of the core–shell structured imide-polymer@BT nanohybrids in PEI-based nanocomposites

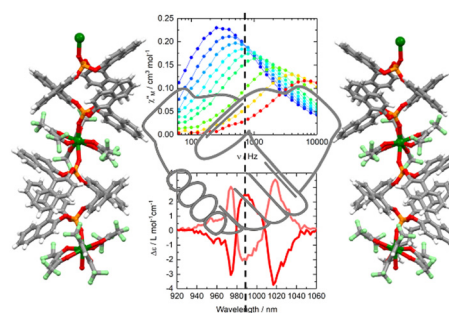
Jinpeng Li, Junhao Jiang, Yi Chen,\* Xiaoyun Liu, Peiyuan Zuo, Qilin Cheng and Qixin Zhuang\*



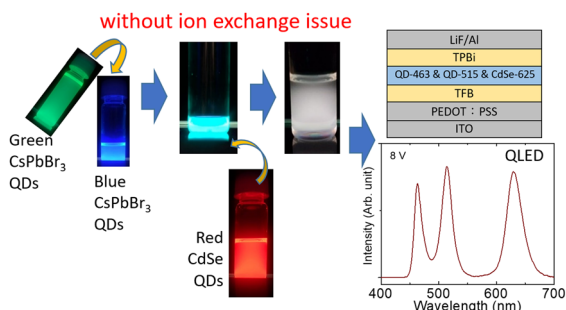
7299

### Circularly polarized luminescence in the one-dimensional assembly of binaphthyl-based Yb(III) single-molecule magnets

Carlo Andrea Mattei, Vincent Montigaud, Bertrand Lefeuvre, Vincent Dorcet, Gilles Argouarch, Olivier Cador, Boris Le Guennic, Olivier Maury, Claudia Lalli, Yannick Guyot, Stéphane Guy, Cyprien Gindre, Amina Bensalah-Ledoux, François Riobé,\* Bruno Baguenard\* and Fabrice Pointillart\*



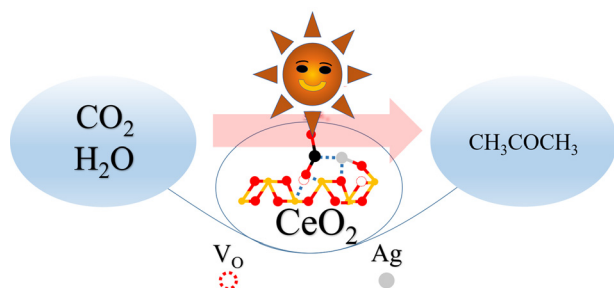
7311



### White-light-emitting diodes based on blue and green quantum-confined CsPbBr<sub>3</sub> perovskite quantum dots and red CdSe quantum dots without ion-exchange issues

Che-Yu Chang, K. P. O. Mahesh, Ting-Qing Chen, Wei-Li Hong, Yu-Min Lin, Wei-Cheng Tseng, Wei-Sheng Chen, Ching-Ling Hsu, Sheng-Fu Horng and Yu-Chiang Chao\*

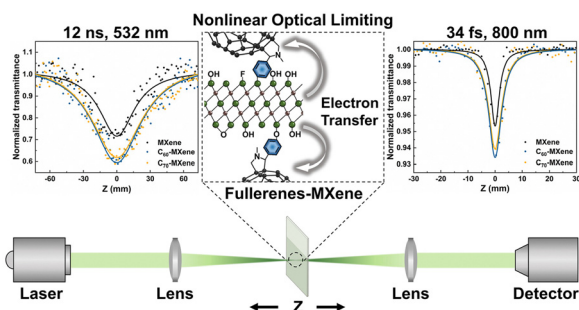
7320



### Ag–O–Ce<sup>3+</sup> atomic interface and surface oxygen vacancies on CeO<sub>2</sub> synergistically promoted the selective visible photocatalytic reduction of carbon dioxide

Jie Zheng, Shuaitao Li, Yuanrong Zhang, Peng Zheng, Xun Hu,\* Yanfen Fang,\* Ran Duan and Qifeng Chen\*

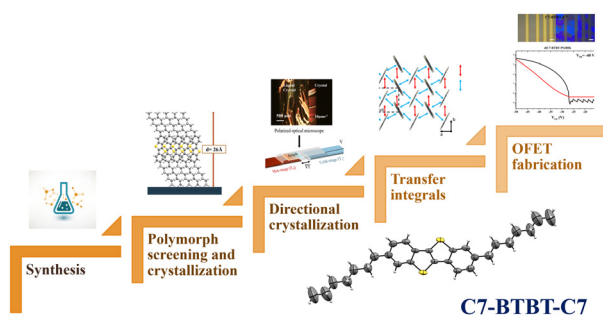
7331



### Covalent chemical functionalization of Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene nanosheets with fullerenes C<sub>60</sub> and C<sub>70</sub> for enhanced nonlinear optical limiting

Yan Fang, Zhiyuan Wei, Zihao Guan, Naying Shan, Yang Zhao, Fang Liu, Lulu Fu, Zhipeng Huang, Mark G. Humphrey and Chi Zhang\*

7345



### From synthesis to device fabrication: elucidating the structural and electronic properties of C7-BTBT-C7

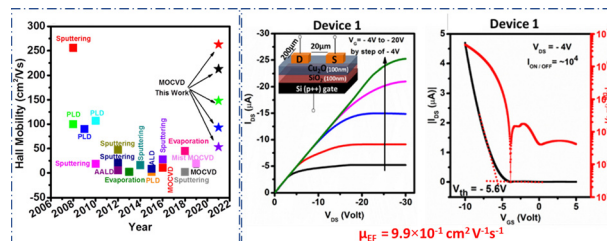
Priya Pandey, Lamiaa Fijahi, Nemo McIntosh, Nicholas Turetta, Marco Bardini, Samuele Giannini, Christian Ruzi , Guillaume Schweicher, David Beljonne, J r me Cornil, Paolo Samori, Marta Mas-Torrent,\* Yves Henri Geerts,\* Enrico Modena\* and Lucia Maini\*



7356

## CVD-deposited Cu<sub>2</sub>O thin films with a record Hall hole mobility of 263 cm<sup>2</sup> V<sup>-1</sup> s<sup>-1</sup> and field-effect mobility of 0.99 cm<sup>2</sup> V<sup>-1</sup> s<sup>-1</sup>

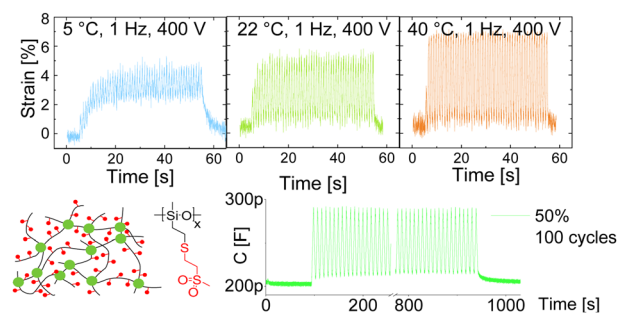
Vivek Singh,\* Jyoti Sinha, S. A. Shivashankar and Sushobhan Avasthi



7367

## Synthesis of polysiloxane elastomers modified with sulfonyl side groups and their electromechanical response

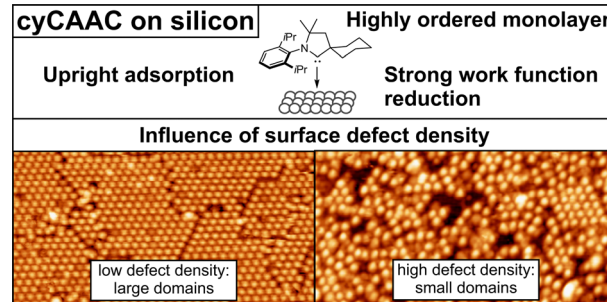
Yauhen Sheima, Thulasinath Raman Venkatesan, Holger Frauenrath and Dorina M. Opris\*



7377

## Influence of the defect density on the ordering of an NHC monolayer on a silicon surface

Robert Zielinski, Mowpriya Das, Canan Kosbab, Mike Thomas Nehring, Mario Dähne, Norbert Esser,\* Martin Franz\* and Frank Glorius\*

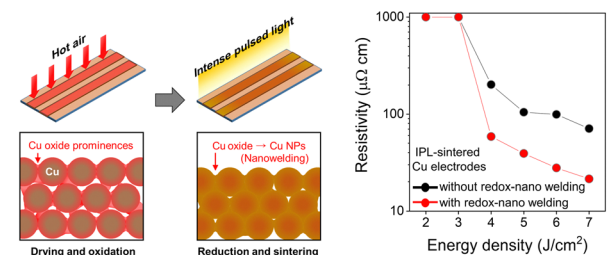


7383

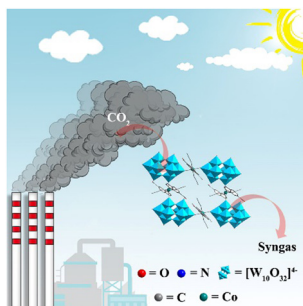
## Photo-chemically assisted redox-nano welding for highly conductive and robust copper-based electrodes

Jae-Won Lee, Sang Min Lee, Ji Hye Kwak, Juhee Kim, Sung Jin Kim, Kyong-Soo Hong, Kye Sang Yoo,\* Imjeong H.-S Yang\* and Hee Jin Jeong\*

## Photo-chemically assisted redox-nano welding



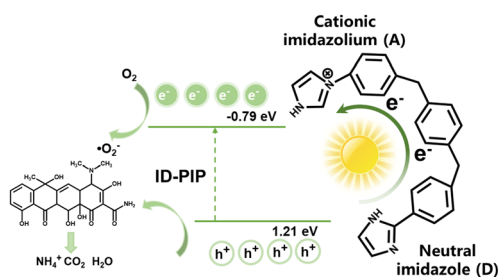
7389



### $[W_{10}O_{32}]^{4-}$ -based POMOFs with different nuclear cobalt clusters for photoreduction of $CO_2$ to produce syngas

Si-Qi You, Yu-Jiao Dong, Bao-Shan Hou, Man Dong, Jia-Lin Tong, Ling-Xin Wang, Xin-Long Wang,\* Chun-Yi Sun,\* Wei Guan\* and Zhong-Min Su

7397

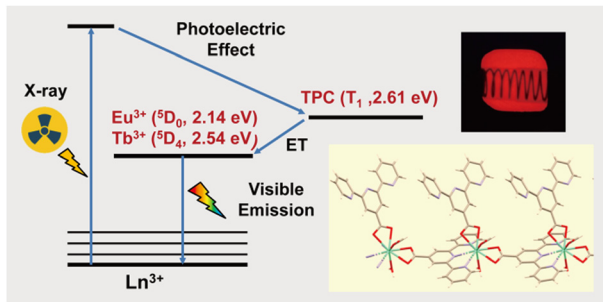


Building Internal Electric Fields in porous ionic polymers

### Building internal electric fields in porous ionic polymers for fast photocatalytic degradation of tetracycline hydrochloride

Shuaishuai Shang, Shenni Li, Changjun Peng, Honglai Liu and Jun Hu\*

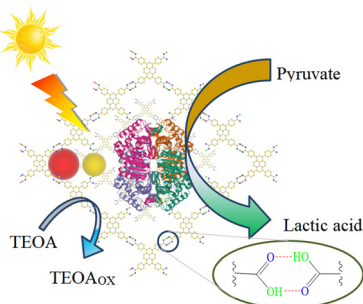
7405



### Rational design and synthesis of scintillating lanthanide coordination polymers for highly efficient X-ray imaging

Xiangmei Liu, Shi Wang, Wangwang Xie, Jingfei Ni, Kang Xiao, Shujuan Liu, Wen Lv\* and Qiang Zhao\*

7411



### Enhancing the catalytic efficiency and stability of photoenzymes using hydrogen-bonded organic framework material HOF-101

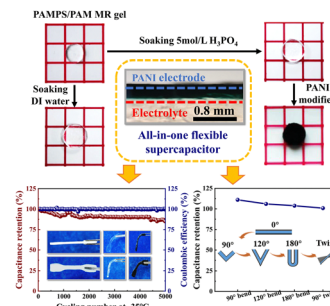
Guohua Li, Xifeng Lv, Wei Ji, Yegui Zhou, Zhiwen Lin, Hui Cao\* and Tianwei Tan\*



7419

### Swelling-resistant microgel-reinforced hydrogel polymer electrolytes for flexible all-in-one supercapacitors with high performances

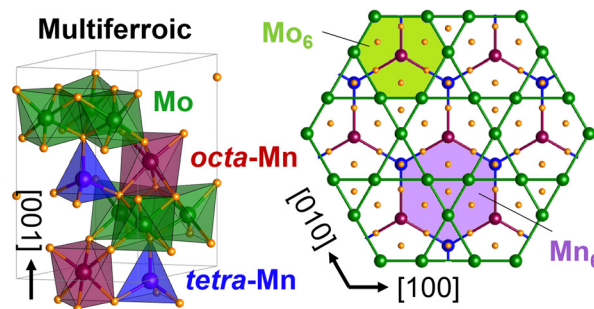
Jia Yang, Mingxin Guo, Lanlan Feng, Jiajia Hao, Yaxin Guo, Zhipeng Li, Shuzheng Liu, Gang Qin, Gengzhi Sun and Qiang Chen\*



7427

### Grain engineered polar-axis-oriented epitaxial $\text{Mn}_2\text{Mo}_3\text{O}_8$ films with enhanced magnetic transition temperature

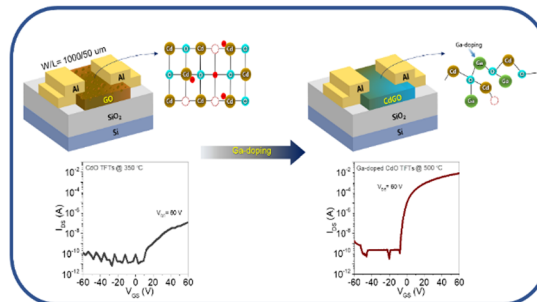
Shishin Mo, Tsukasa Katayama,\* Akira Chikamatsu and Tetsuya Hasegawa



7433

### Optimization of solution-processed amorphous cadmium gallium oxide for high-performance thin-film transistors

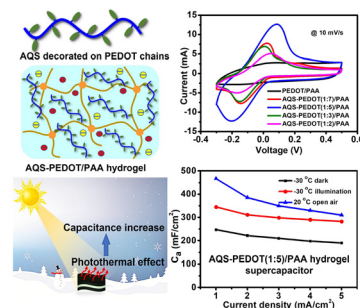
Minh Nhut Le, Paul Lee, Seung-Han Kang, Kyunghan Ahn, Sung Kyu Park, Jaesang Heo\* and Myung-Gil Kim\*



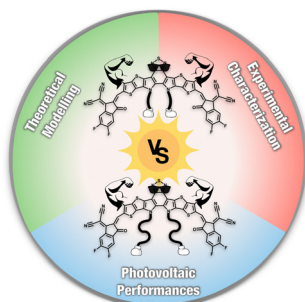
7441

### Boosting PEDOT energy storage with a redox anthraquinone dopant for a flexible hydrogel supercapacitor at sub-zero temperatures

Chen Chen, Yueqin Li,\* Changhao Qian, Lin Han, Zichun Lu and Lingke Liu



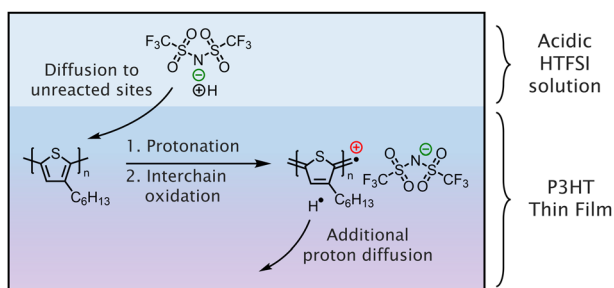
7451



## The impact of side chain elongation from the Y6 to Y6-12 acceptor in organic solar cells: a fundamental study from molecules to devices

Florian Regnier, Antoine Rillaerts, Vincent Lemaur, Pascal Viville\* and Jérôme Cornil\*

7462



## Diffusion of Brønsted acidic dopants in conjugated polymers

Phong H. Nguyen, Michael B. Schmithorst, Thomas E. Mates, Rachel A. Segalman and Michael L. Chabinye\*

