



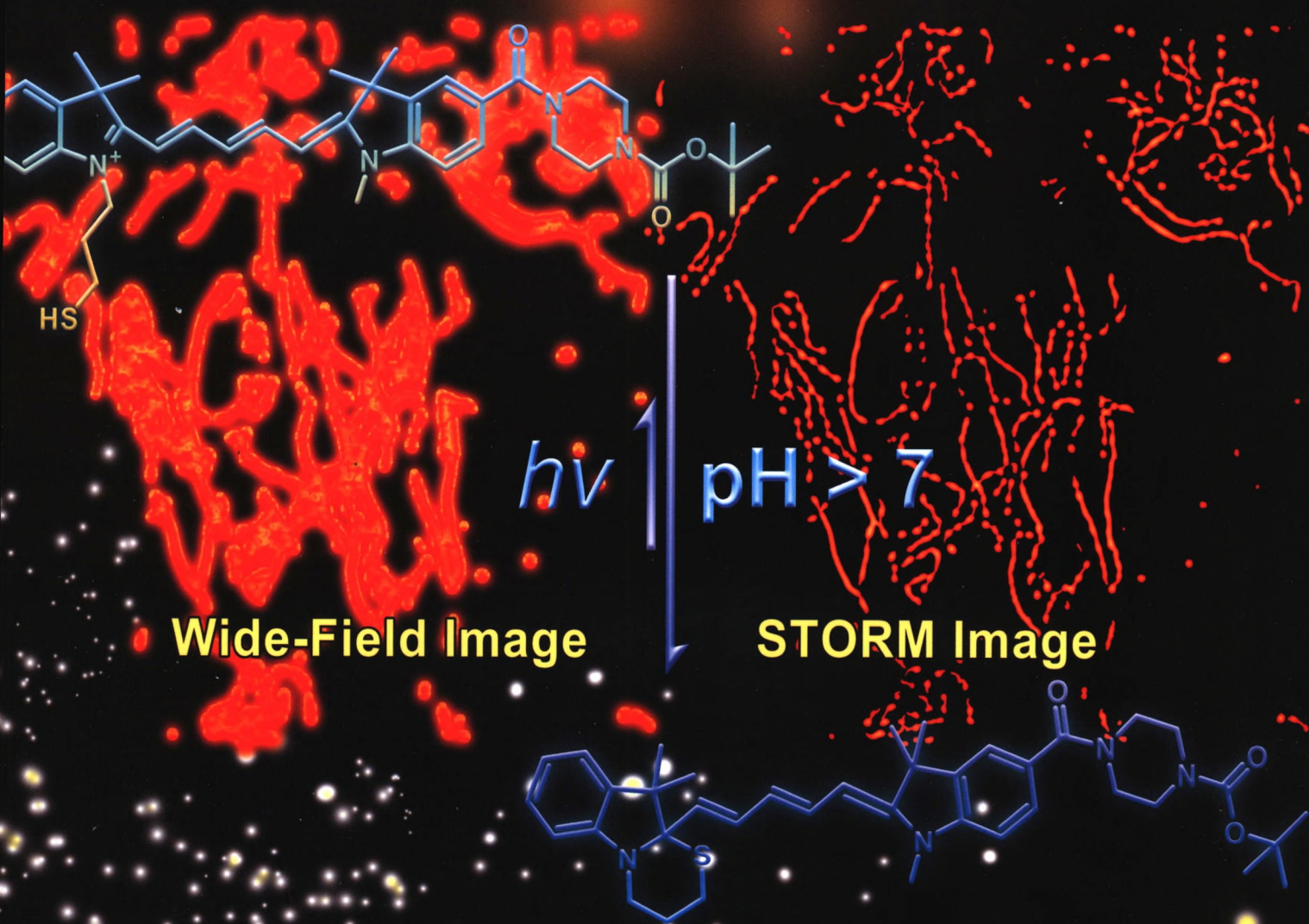
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化学学报

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(Huaxue Xuebao)

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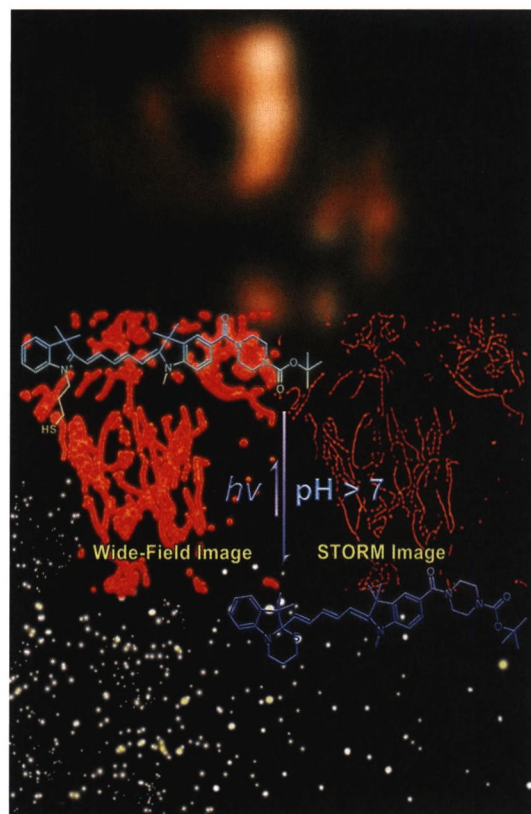
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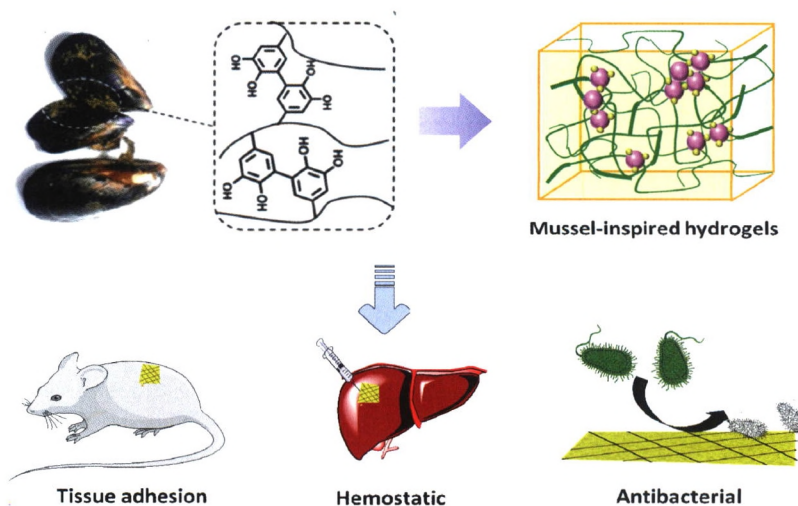
* 通信联系人.

On the cover: A mercaptopropyl moiety substituted Cy5 fluorophore was developed to show ideal photo-blinking, resulting from reversibly intramolecular ring-closing/-opening alterations triggered by the thiol-attack, which achieved STORM imaging of mitochondria in live cells without using any imaging buffer. [Yang, Zhigang *et al.* on page 130-139.]



Review

Mussel-Inspired Hydrogels for Tissue Healing



Geng, Huimin; Cui, Jiwei*; Hao, Jingcheng*
Acta Chim. Sinica **2020**, 78(2), 105-113

Mussel-inspired phenolic materials with plenty of phenolic hydroxyl groups have anti-oxidant, antibacterial and anti-inflammatory effects. Polyphenol hydrogel is an ideal bio-adhesive material due to its good tissue adhesion, hemostatic and antimicrobial capabilities.

Research Progress and Perspectives of Localized High-concentration Electrolytes for Secondary Batteries



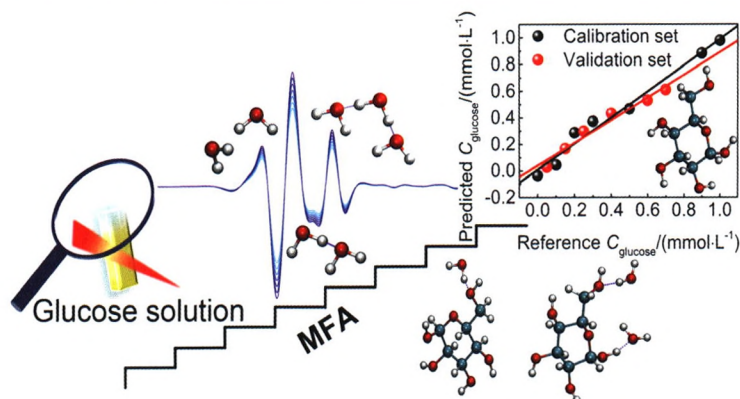
Yu, Zhe; Zhang, Jianjun; Liu, Tingting; Tang, Ben; Yang, Xiaoyan; Zhou, Xinhong; Cui, Guanglei*

Acta Chim. Sinica **2020**, 78(2), 114-124

The types of localized high concentrated electrolytes, preparation, mechanism and its application in lithium, sodium, magnesium, sulfur batteries are reviewed in this paper. And the batteries show the excellent property of wide electrolyte window, shuttle effect, restraining lithium dendrite, flame retardant and so on.

Article

Temperature-Dependent Near-Infrared Spectroscopy for Sensitive Detection of Glucose



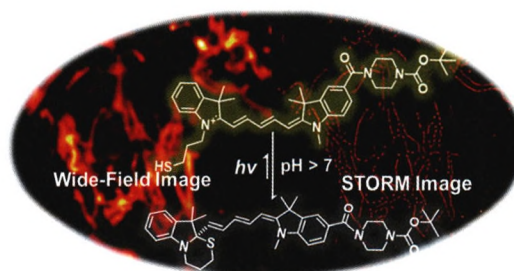
Temperature-dependent NIR spectroscopy

Wang, Mingyuan; Cui, Xiaoyu; Cai, Wen-sheng; Shao, Xueguang*

Acta Chim. Sinica **2020**, 78(2), 125-129

Temperature-dependent near-infrared (NIR) spectroscopy was adopted for the quantitative detection of glucose of micro-content in serum. The feasibility of mutual factor analysis (MFA) method in the quantitative detection of low concentration glucose was further studied. The method can accurately quantify glucose of micro-content in samples, even for samples with glucose concentration less than 1 mmol/L.

A Reversibly Intramolecular Cyclization Cy5 Optical Probe for Stochastic Optical Reconstruction Microscopy in Live Cell Mitochondria



Yang, Zhigang*; Xiong, Jia; Zhang, Wei; Li, Wen; Pan, Wenhui; Zhang, Jianguo; Gu, Zhenyu; Huang, Meina; Qu, Junle*

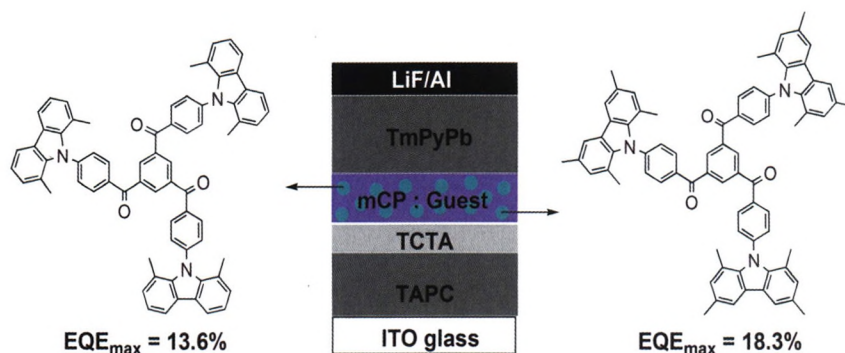
Acta Chim. Sinica **2020**, 78(2), 130-139

A new strategy for Cy5 based STORM (stochastic optical reconstruction microscopy) optical probe was developed to guide new STORM probe synthesis, which the probe can show ideal photo-blinking in the absence of imaging buffer and thiol-containing reagents, in contrast to Alexa647 fluorescent probe. When the probe was incubated with HeLa cells, it showed photo-blinking with a single laser beam illumination. The STORM super-resolution imaging was reconstructed by Falcon algorithm, which provided a new protocol for STORM optical probes.

Synthesis and Properties of Two Novel Thermally Activated Delayed Fluorescence Materials with 1,3,5-Tribenzoylbenzene as Electron-Acceptor

Wang, Zhiqiang*; Bai, Meidan; Zhang, Ming; Zhang, Zhiqiang*; Feng, Xun; Zheng, Caijun*

Acta Chim. Sinica **2020**, 78(2), 140-146

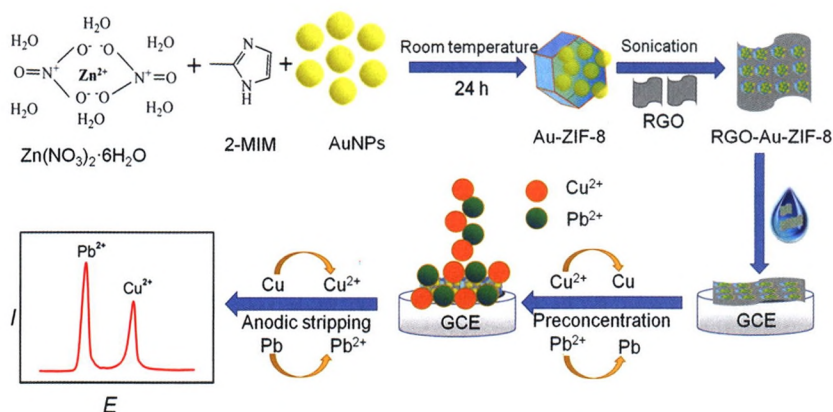


Two thermally activated delayed fluorescence materials TBP-DmCz and TBP-TmCz were successfully synthesized using 1,3,5-tribenzoylbenzene (TBP) as electron-acceptor, 1,8-dimethylcarbazole (DmCz) and 1,3,6,8-tetramethylcarbazole (TmCz) as electron-donor, respectively. Both materials have very small ΔE_{ST} , 0.05 eV for TBP-DmCz and 0.01 eV for TBP-TmCz. The electroluminescent devices based on TBP-DmCz and TBP-TmCz achieved high performances, the maximum external quantum efficiencies are 13.6% and 18.3%, respectively.

Preparation of Electrochemical Sensor Based on RGO-Au-ZIF-8 Composite and Its Application in Simultaneous Detection of Lead Ions and Copper Ions

Sun, Yanhui*; Qi, Youxiao; Shen, You; Jing, Cuijie; Chen, Xiaoxiao; Wang, Xinxing*

Acta Chim. Sinica **2020**, 78(2), 147-154

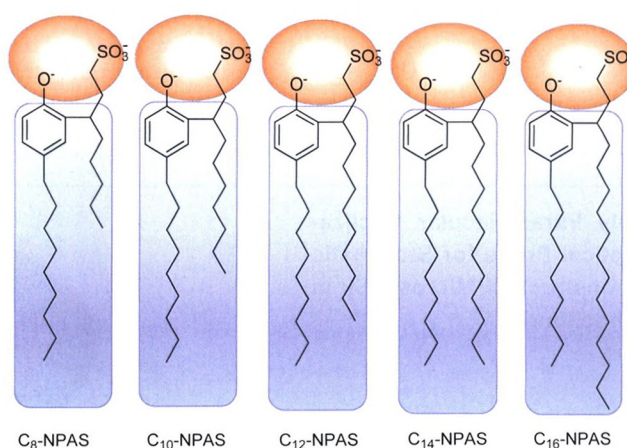


A functional metal organic framework (MOF) material with excellent electrochemical properties was prepared and used to build electrochemical sensing platform for simultaneous and sensitive detection of Pb^{2+} and Cu^{2+} , which greatly expands the electrochemical applications of MOF materials.

Molecular Dynamics Simulation of "Quasi-Gemini" Anionic Surfactant at the Decane/Water Interface

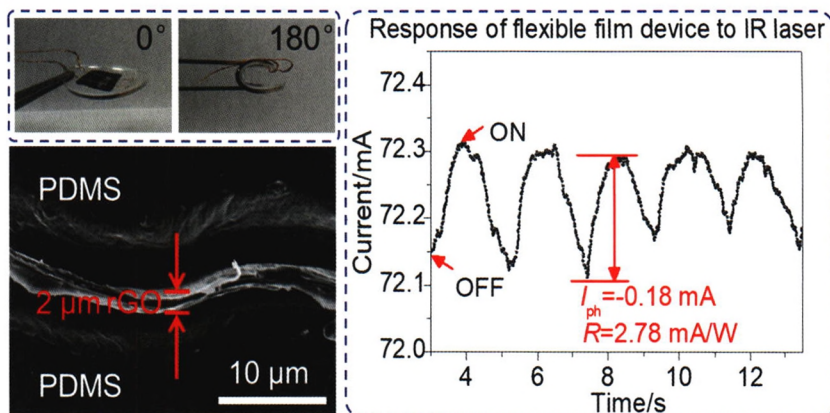
Gao, Simeng*; Xia, Kun; Kang, Zhihong; Nai, Yongning; Yuan, Ruixia; Niu, Ruixia*

Acta Chim. Sinica **2020**, 78(2), 155-160



The structure of surfactant in oil-water system has a great influence on the interfacial behavior, so it is of great significance to study the structure and interfacial properties of surfactants. In this paper, nonylphenol substituted alkyl sulfonate surfactants were used to simulate the microscopic aggregation behavior and the interfacial properties at the decane/water interface. It is expected that the effect of hydrophobic tail chain length on the behavior of decane/water interface can be discussed from a microscopic level, so as to provide theoretical basis for further experimental study.

Preparation and Application of Polydimethylsiloxane Encapsulated Graphene-based Flexible Infrared Detector

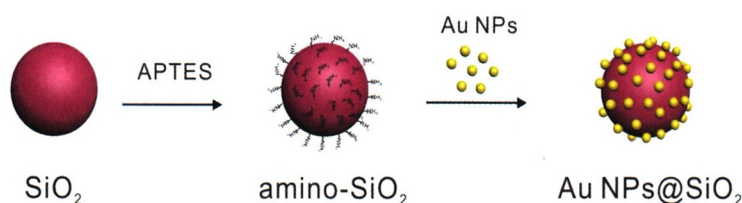


Zhao, Yajing; Xie, Liang; Ma, Lanchao; He, Junhui*

Acta Chim. Sinica **2020**, 78(2), 161-169

A series of thermally reduced graphene oxide films were prepared at varied annealing temperatures (from 100 to 1200 °C) and investigated in detail. Flexible film devices were fabricated by encapsulating the graphene films with polydimethylsiloxane, and were successfully applied to detecting infrared laser irradiation, human body infrared radiation, bending motions and pressure changes.

SiO₂-Mediated High-efficiency Enrichment of 5 nm Gold Nanoparticles and Their Catalytic Activity



Li, Wei; Ran, Tiecheng; Zhang, Yu; He, Wei; Ma, Jifei; Wang, Qisheng; Zhang, Jichao*; Zhu, Ying

Acta Chim. Sinica **2020**, 78(2), 170-176

In this work, 500 nm silanized SiO₂ particles were used to adsorb 5 nm gold nanoparticles (Au NPs) through electrostatic interaction. Au NPs@SiO₂ composites were self-assembly formed, which greatly increased the effective concentration of Au NPs, increased the catalytic activity by 3 times, and had stable structure and catalytic performance, adjustable catalytic activity.

“《化学学报》2018 年度最有影响力论文奖”揭晓

为推动促进国内外化学期刊发展、加强化学工作者交流，根据《化学学报》编委会决议，设立“《化学学报》XX 年度最有影响力论文奖”。该奖对获奖人的国籍、居住地、单位、年龄等没有任何限制，由《化学学报》编委会根据文章年度 SCI 引用情况评出（参考影响因子计算规则，兼顾当年发表当年引用情况，按第 n-2 年至第 n 年发表的文章在第 n 年引用情况排序），奖励通信作者荣誉证书、文章第一作者荣誉证书和奖金 1000 元。奖励 10 篇左右。已获奖的论文次年不再重复奖励。

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化学学报 2017 Vol. 75 (4): 383-390

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化学学报 2016 Vol. 74 (1): 9-16