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See Lingqian Zhang,
Chengjun Huang *et al.*,
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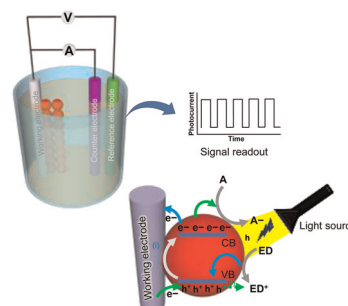
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CRITICAL REVIEW

1633

Semiconductor quantum dots in photoelectrochemical sensors from fabrication to biosensing applications

Anjum Qureshi,* Tayyaba Shaikh and Javed H. Niazi*

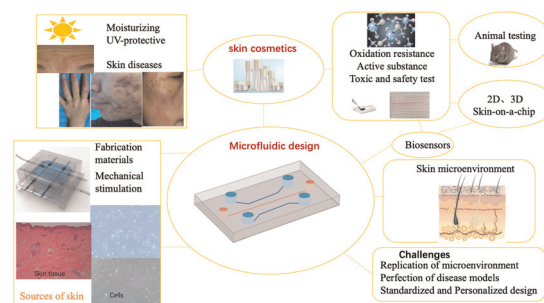


TUTORIAL REVIEW

1653

Advancements in microfluidics for skin cosmetic screening

Nianfang Hu, Kerun Cheng, Shuhan Zhang, Shan Liu,
Lijun Wang, Xiaoxin Du, Yong Li* and Chenzhong Li*



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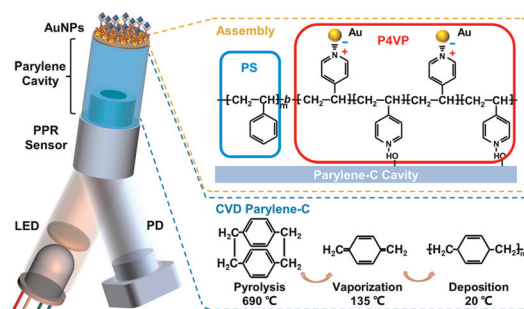


PAPERS

1672

A parylene-mediated plasmonic–photonic hybrid fiber-optic sensor and its instrumentation for miniaturized and self-referenced biosensing

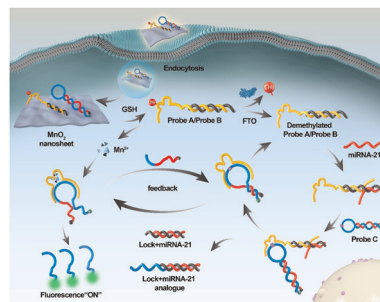
Xin Li, Nanxi Wang, Fei Wang, Jinlong Liu, Yimin Shi, Jiahong Jiang, Hongyao Liu, Mingxiao Li, Lina Zhang, Wenchang Zhang, Yang Zhao, Lingqian Zhang* and Chengjun Huang*



1682

High-fidelity imaging of intracellular microRNA via a bioorthogonal nanoprobe

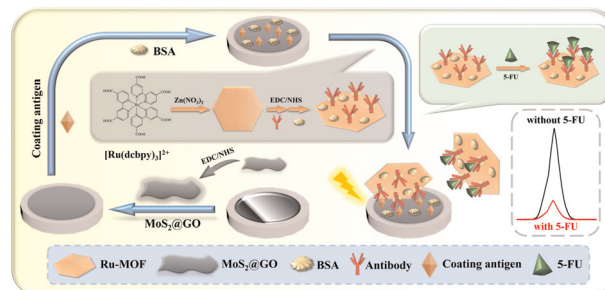
Hengyi Chen, Xiaohui Chen, Yi Chen, Chong Zhang, Zixin Sun, Jiaxi Mo, Yongzhong Wang, Jichun Yang,* Dongsheng Zou* and Yang Luo*



1694

Electrochemiluminescence immunoassay strategies based on a hexagonal Ru-MOF and MoS₂@GO nanosheets: detection of 5-fluorouracil in serum samples

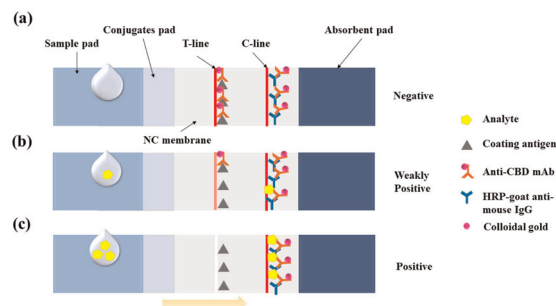
Guoyu Ma, Lu Peng, SunXiaoYi Zhang, Kang Wu,* Anping Deng* and Jianguo Li*



1703

Development of a gold nanoparticle-based lateral-flow strip for the detection of cannabidiol in functional beverages

Shuai Lv, Xinxin Xu, Lingling Guo, Liguang Xu, Liqiang Liu,* Hua Kuang and Chuanlai Xu*



```

graph TD
    A([All isomers]) -- MS² --> B{F361, F331}
    B -- True --> C[linear]
    B -- False --> D{F229, F199}
    C --> E{F331 >> F361}
    E -- True --> F[1-2]
    E -- False --> G{F361 >> F331}
    G -- True --> H[1-3 or 1-4]
    G -- False --> I{F361 < F331}
    I -- True --> J[ ]
    D -- True --> K[branched type I]
    K -- MS² --> L{F211, F199}
    L -- True --> M["(1-2, 1-5)"]
    L -- False --> N[ ]
    D -- False --> O[branched type II]
    O -- MS² --> P{F199}
    P -- True --> Q["(1-2, 1-3)"]
    P -- False --> R["(1-3, 1-4)"]
  
```

Shang-Ting Tsai, Hsu-Chen Hsu and Chi-Kung Ni*

The diagram illustrates the synthesis and application of $\text{MoS}_2@\text{TiO}_2$ NCs. **Synthesis:** TiO_2 (1) and Na_2MoO_4 (2) react in the presence of Thiourea to form $\text{MoS}_2@\text{TiO}_2$ NCs. **Sensing Mechanism:** A Neurocyte, upon K^+ -stimulation, releases Dopamine. The $\text{MoS}_2@\text{TiO}_2$ NCs facilitate the oxidation of Dopamine (labeled as "Inhibition" in the diagram). This process is coupled with the oxidation of TMB (3,3',5,5'-tetramethylbenzidine) to oxTMB (3,3',5,5'-tetramethylbenzidine-2,2,6,6-tetrol), which is indicated by a color change from colorless to blue. The diagram also shows the oxidation of H_2O_2 to OH^- by the NCs.

Chonghui Wei, Xuan Xie, Yue Mou, Shiqi Cheng,
Jin Yang, Kaixin Xue, Kewei Yu, Xinru Lin,
Chunfen Zhang, Yujie Zhao,* Xingyu Luo* and
Yilin Wang

The diagram illustrates the workflow for fragment analysis. It begins with a library of unique primers, represented by colored arrows (1-8) above a DNA sequence. These primers are then pooled into a sample, shown as a multi-well plate. The pooled sample is then analyzed using a fragment analysis instrument (capillary electrophoresis). The resulting electropherogram displays fluorescence intensity (RFU) versus size in base pairs (bp). Peaks are observed at 2, 4, and 8 bp, with peak 4 being the most prominent. A threshold line is indicated on the x-axis.

Xianzhen Feng, Xinyu Zhuang, Grace Lui and
I-Ming Hsing*

The diagram illustrates the fabrication and application of an immunosensor. The process begins with the synthesis of MoS_2 nanoflowers and MoS_2/RP nanoplates using a hydrothermal method. These materials are then modified with SERS tags, including R6G, BSA, and ferritin. The modified tags are immobilized onto a fiber, creating an immunoprobe. This probe is used for specific immune reactions on an immunosubstrate. The final step is SERS detection, which is visualized on a laptop screen showing characteristic Raman spectra peaks.

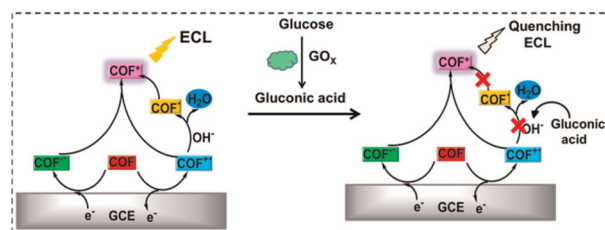
Jiali Ma, Wenxin Dong, Tao Xu, Guodong Wei,
Chenjie Gu* and Tao Jiang*

PAPERS

1764

Development of an exogenous coreactant-free electrochemiluminescent sensor for sensing glucose

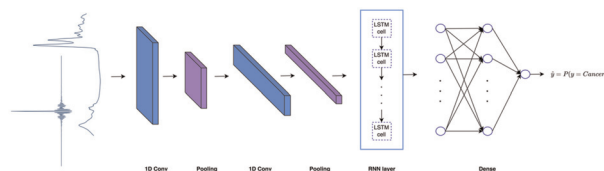
Maoding Zuo, Lin Cui,* Shuangwen Wang, Wengui Wei, Wenqiang Gao* and Chun-yang Zhang*



1770

Recurrent neural networks for time domain modelling of FTIR spectra: application to brain tumour detection

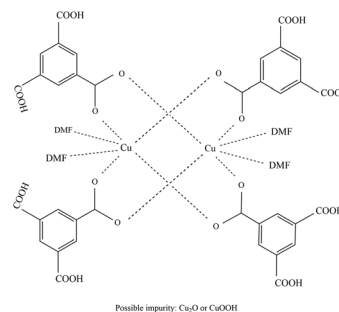
Georgios Antoniou, Justin J. A. Conn, Benjamin R. Smith, Paul M. Brennan, Matthew J. Baker and David S. Palmer*



1777

Sensing interface based on electrodeposited Cu-BTC microporous film for electrochemical detection of the painkiller paracetamol

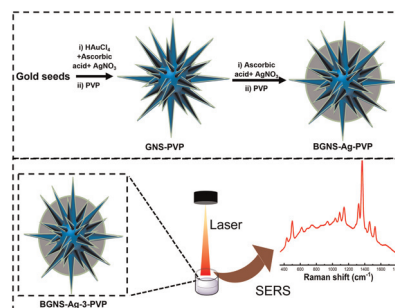
Nguyen Tien Dat, Nguyen Ngoc Tien, Nguyen Thi Thanh Ngan and Vu Thi Thu*



1786

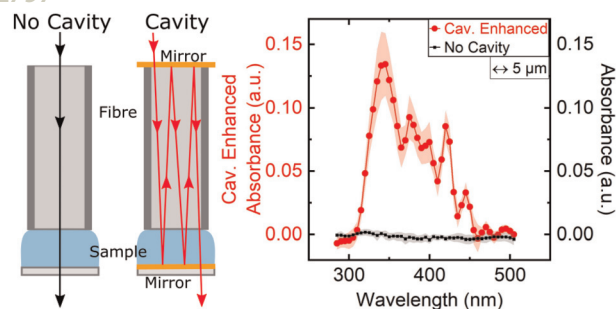
A hybrid plasmonic nanoprobe using polyvinylpyrrolidone-capped bimetallic silver–gold nanostars for highly sensitive and reproducible solution-based SERS sensing

Supriya Atta and Tuan Vo-Dinh*



PAPERS

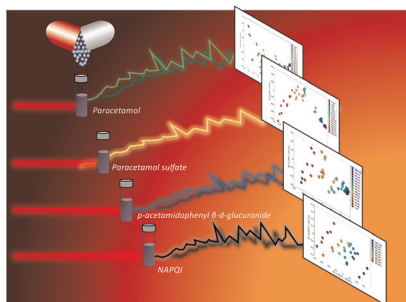
1797



Broadband cavity enhanced UV-VIS absorption spectroscopy for picolitre liquid samples

Imogen M. Fermor-Worth and Catalin Chimerel*

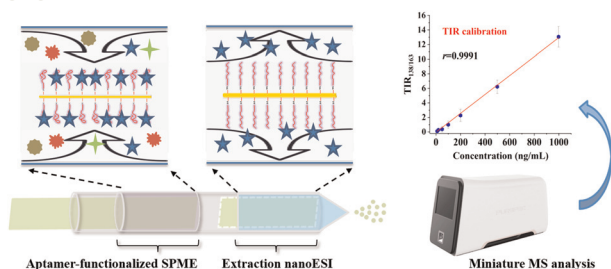
1805



Rapid detection and quantification of paracetamol and its major metabolites using surface enhanced Raman scattering

Najla AlMasoud, Taghrid S. Alomar, Yun Xu, Cassio Lima and Royston Goodacre*

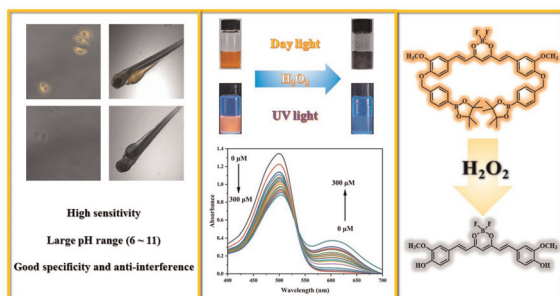
1815



Online hyphenation of in-capillary aptamer-functionalized solid-phase microextraction and extraction nanoelectrospray ionization for miniature mass spectrometry analysis

Yueguang Lv, Yuhang Shang, Linsen Li, Ying Zhang and Qiang Ma*

1824



A highly effective "naked eye" colorimetric and fluorimetric curcumin-based fluorescent sensor for specific and sensitive detection of H_2O_2 *in vivo* and *in vitro*

Wenhao Du, Zheyu Shen, Yueying Liang, Shuai Gong, Zhiyuan Meng, Mingxing Li, Zhonglong Wang* and Shifa Wang*

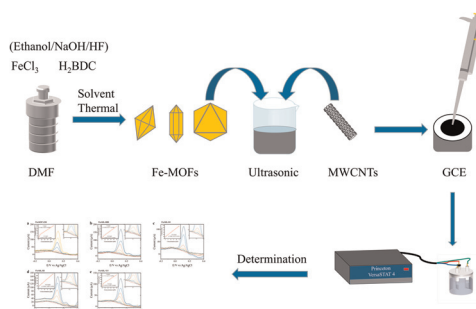


PAPERS

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A series of ultrasensitive electrocatalysts Fe-MOF/MWCNTs for fentanyl determination

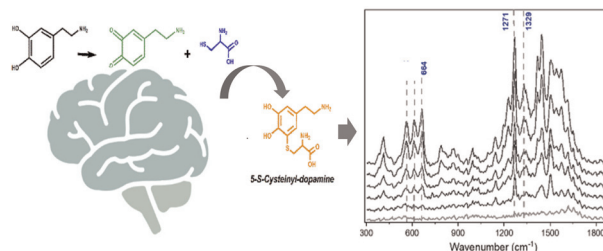
Zhidong Zhao, Yuan He, Xingrui Qi, Nian Li, Zijian He, Yufang Chen and Tao Jin*



1848

SERS-based detection of 5-S-cysteinyl-dopamine as a novel biomarker of Parkinson's disease in artificial biofluids

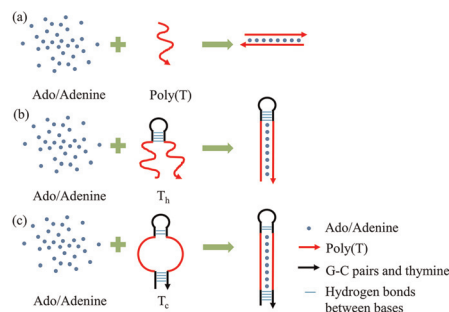
Isidro Badillo-Ramírez,* Bruno Landeros-Rivera, José M. Saniger, Jürgen Popp and Dana Cialla-May



1858

Enriching adenosine by thymine-rich DNA oligomers

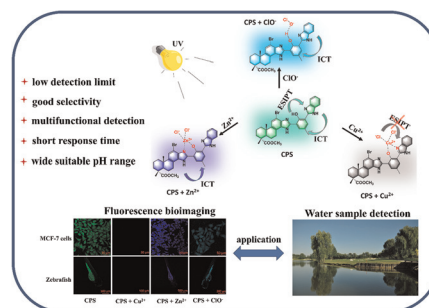
Mingchun Liu, Huaiqing Chen, Yuhan Huang, Jian Liu, Qianfeng Chen, Hua Zuo, Liang Fang* and Chengde Mao*



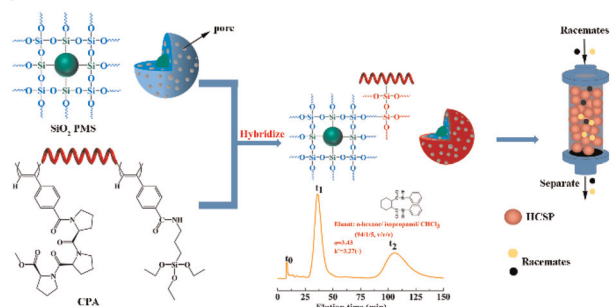
1867

A novel dehydroabietic acid-based multifunctional fluorescent probe for the detection and bioimaging of Cu²⁺/Zn²⁺/ClO⁻

Lu Sun, Zhonglong Wang, Linlin Chen, Xuebao Sun, Zihui Yang and Wen Gu*



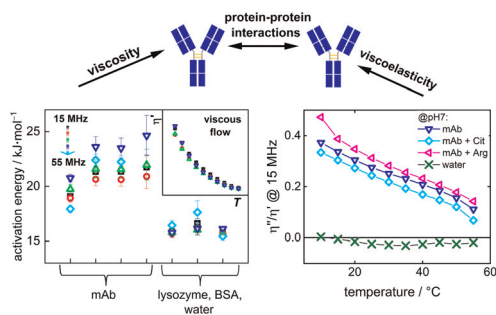
1877



Hybridization of helical poly(phenylacetylene)s bearing L-proline tripeptide pendants into porous silica microspheres as a solvent-tolerable chiral stationary phase for liquid chromatography

Jiahe Huang, Zhengjin Zhou, Chunhong Zhang,*
Chao Wang, Yanli Zhou, Lijia Liu,* Junqing Li,*
Toshifumi Satoh and Yoshio Okamoto

1887



Protein-protein interactions in solutions of monoclonal antibodies probed by the dependence of the high-frequency viscosity on temperature and concentration

Emily Rott, Christian Leppin,* Tim Diederichs,
Patrick Garidel and Diethelm Johannsmann

