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Cover

See Lingqian Zhang,
Chengjun Huang *et al.*,
pp. 1672–1681.

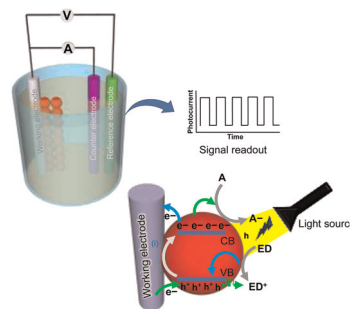
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2023, **148**, 1672.

CRITICAL REVIEW

1633

Semiconductor quantum dots in photoelectrochemical sensors from fabrication to biosensing applications

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

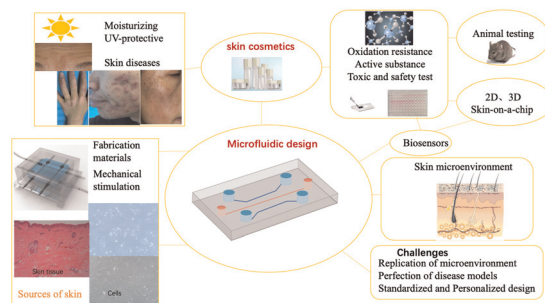


TUTORIAL REVIEW

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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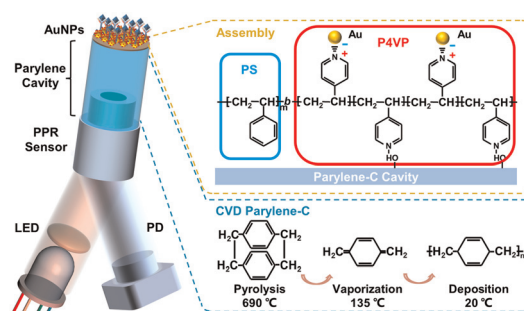


PAPERS

1672

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

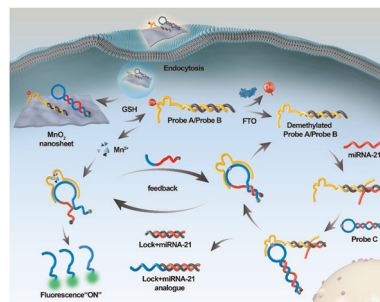
Xin Li, Nanxi Wang, Fei Wang, Jinlong Liu, Yimin Shi, Jiahong Jiang, Hongyao Liu, Mingxiao Li, Lina Zhang, Wenchang Zhang, Yang Zhao, Lingqian Zhang* and Chengjun Huang*



1682

High-fidelity imaging of intracellular microRNA via a bioorthogonal nanoprobe

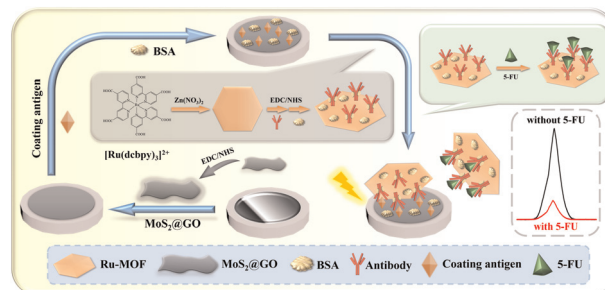
Hengyi Chen, Xiaohui Chen, Yi Chen, Chong Zhang, Zixin Sun, Jiaxi Mo, Yongzhong Wang, Jichun Yang,* Dongsheng Zou* and Yang Luo*



1694

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

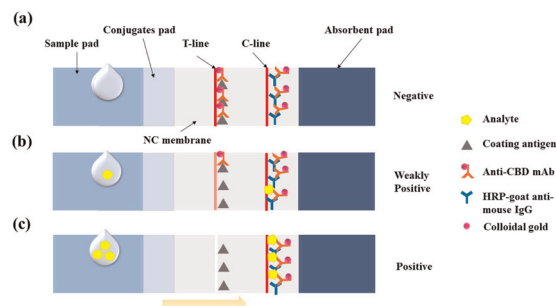
Guoyu Ma, Lu Peng, SunXiaoYi Zhang, Kang Wu,* Anping Deng* and Jianguo Li*



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.
Sensor Mechanism: A Neurocyte, upon K^+ -stimulation, releases Dopamine. Dopamine is oxidized at the $\text{MoS}_2@\text{TiO}_2$ NCs electrode, which is coupled with the reduction of oxTMB to TMB. The electrode also shows a response to H_2O_2 , which is coupled with the reduction of oxTMB to TMB. The reduction of oxTMB to TMB is indicated by a blue color change in the test tube.

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 primers, where specific primers (labeled 1, 2, 3, 4, 5, 6, 7, 8) are selected. These primers are used to amplify a pooled sample. The resulting fragments are then analyzed using a capillary electrophoresis system. The analysis produces an electropherogram showing peaks at 2, 4, and 8 bp. The peak at 2 bp is the most prominent, exceeding the RFU threshold.

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

The diagram illustrates the SERS detection process for ferritin using a MoS_2 @RP nanoflower. The process involves the following steps:

- Synthesis:** MoS_2 nanoflower and MoS_2 @RP nanoflower are synthesized.
- Immobilization:** anti-ferritin and BSA are immobilized on the nanoflower.
- Specific Immune Reaction:** The immunoprobe (anti-ferritin) reacts specifically with ferritin.
- Immune Reaction and SERS Detection:** The immune reaction occurs, leading to the SERS detection of ferritin.

The diagram shows the nanoflower structure, the immobilization of the immunoprobe, the specific immune reaction, and the resulting SERS signal.

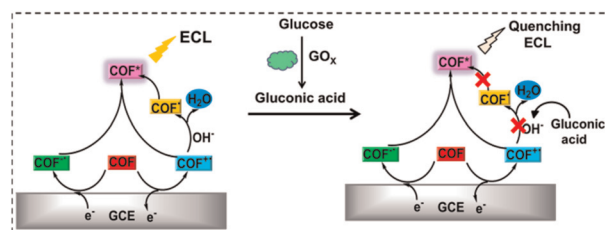
Jiali Ma, Wenxin Dong, Tao Xu, Guodong Wei,
Chenjie Gu* and Tao Jiang*

PAPERS

1764

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

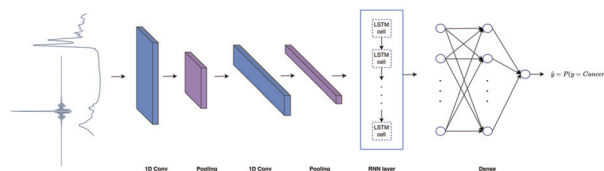
Maoding Zuo, Lin Cui,* Shuangwen Wang, Wengui Wei, Wenqiang Gao* and Chun-yang Zhang*



1770

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

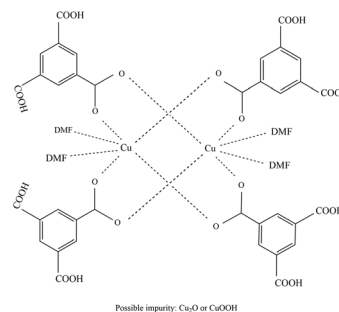
Georgios Antoniou, Justin J. A. Conn, Benjamin R. Smith, Paul M. Brennan, Matthew J. Baker and David S. Palmer*



1777

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

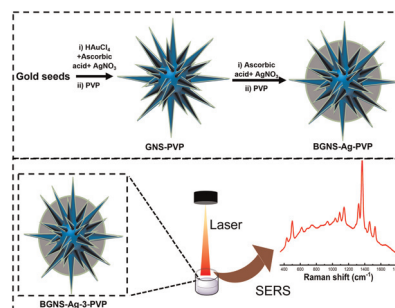
Nguyen Tien Dat, Nguyen Ngoc Tien, Nguyen Thi Thanh Ngan and Vu Thi Thu*



1786

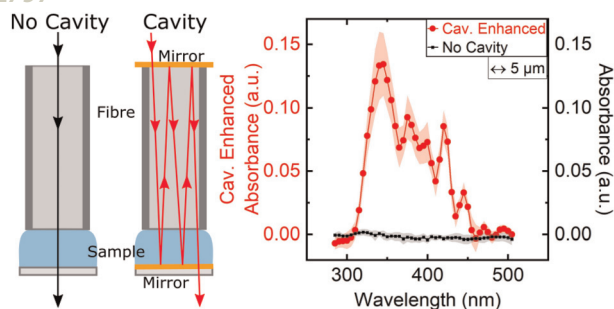
A hybrid plasmonic nanoprobe using polyvinylpyrrolidone-capped bimetallic silver–gold nanostars for highly sensitive and reproducible solution-based SERS sensing

Supriya Atta and Tuan Vo-Dinh*



PAPERS

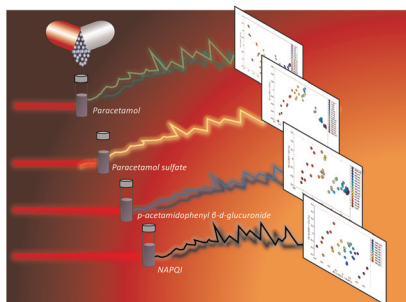
1797



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

Imogen M. Fermor-Worth and Catalin Chimerel*

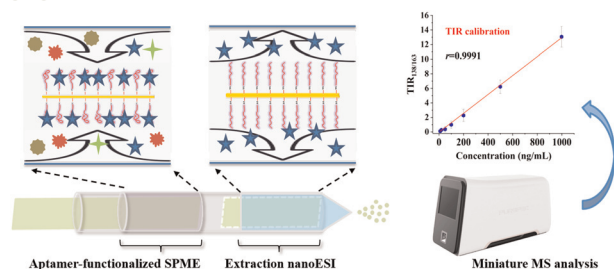
1805



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*

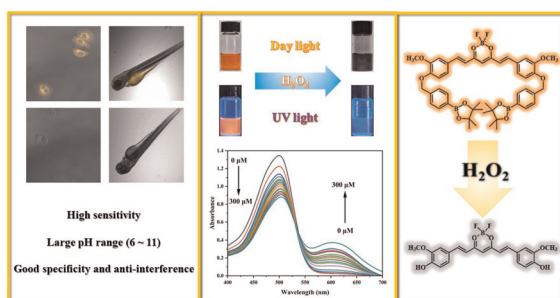
1815



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*

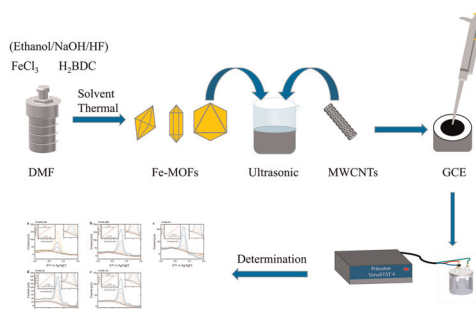


PAPERS

1838

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

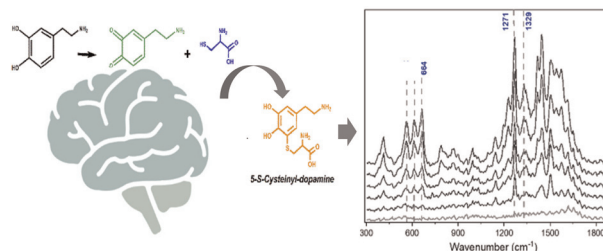
Zhidong Zhao, Yuan He, Xingrui Qi, Nian Li, Zijian He, Yufang Chen and Tao Jin*



1848

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

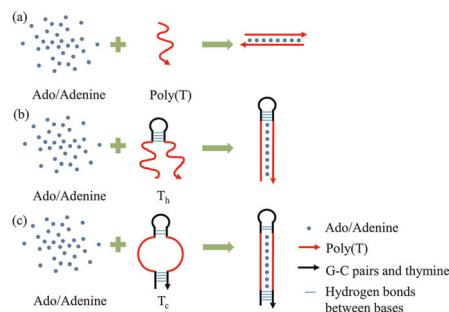
Isidro Badillo-Ramírez,* Bruno Landeros-Rivera, José M. Saniger, Jürgen Popp and Dana Cialla-May



1858

Enriching adenosine by thymine-rich DNA oligomers

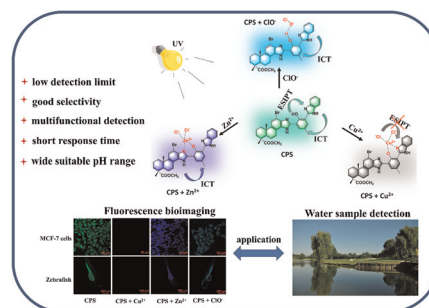
Mingchun Liu, Huaqing Chen, Yuhan Huang, Jian Liu, Qianfeng Chen, Hua Zuo, Liang Fang* and Chengde Mao*



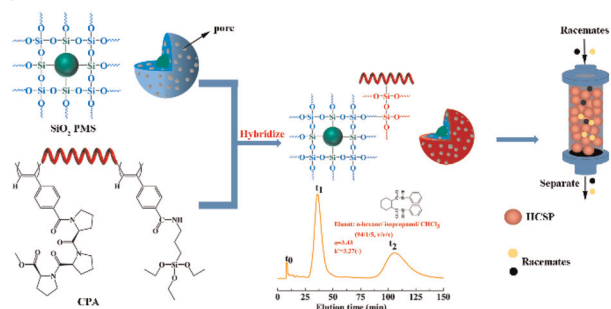
1867

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*



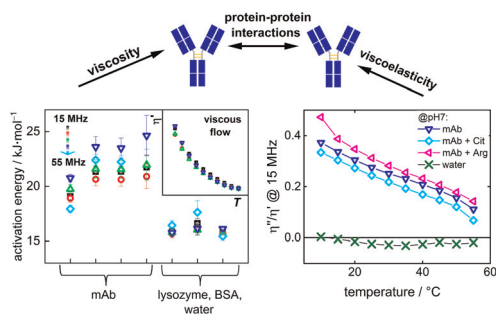
1877



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

