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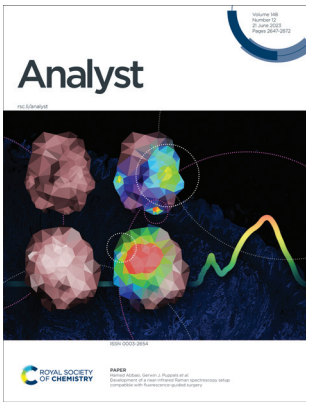

Cover
See Hamed Abbasi, Gerwin J. Puppels *et al.*, pp. 2676–2682.

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CRITICAL REVIEW

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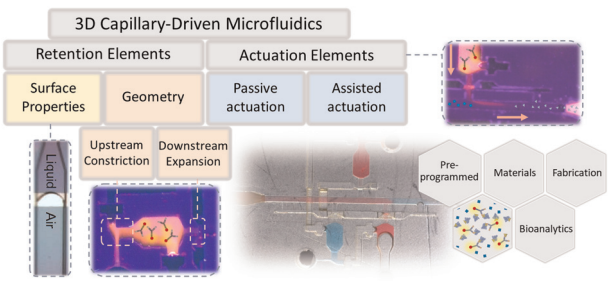
Capillary-driven microfluidics: impacts of 3D manufacturing on bioanalytical devices

Pooya Azizian, Jasmina Casals-Terré, Jordi Ricart and Joan M. Cabot*



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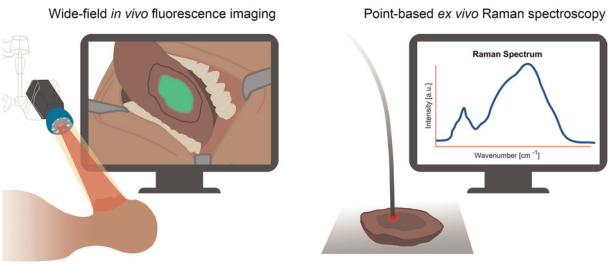
Development of a near-infrared Raman spectroscopy setup compatible with fluorescence-guided surgery

Hamed Abbasi,* Lorraine J. Lauwerends, Tom C. Bakker Schut, Inês P. Santos, Peter J. Caspers, Jose A. U. Hardillo, Senada Koljenović, Alexander L. Vahrmeijer, Robert J. Baatenburg de Jong, Stijn Keereweer and Gerwin J. Puppels*



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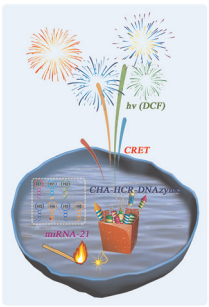
Chemiluminescence resonance energy transfer-based multistage nucleic acid amplification circuits for MiRNA detection with low background

Nana Kang, Benrui Weng, Sijia Liu, Huiran Yang, Siyuan Wang, Yaqi Liu, Jiabing Ran, Hanghang Liu, Zhangshuang Deng, Changying Yang, Huimin Wang* and Fuan Wang



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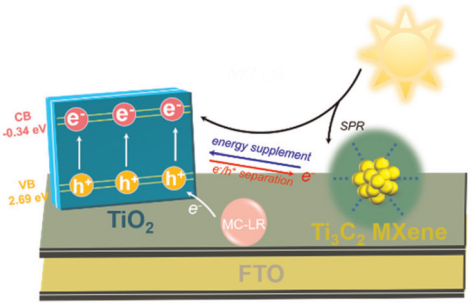
Ti_3C_2 MXene improved photoelectrochemical anode assembly of titanium dioxide nanoarrays for microcystin-LR detection

Yue Jia, Yu Du, Xiaoyue Zhang, Rui Xu, Xiang Ren, Dan Wu, Hongmin Ma and Qin Wei*



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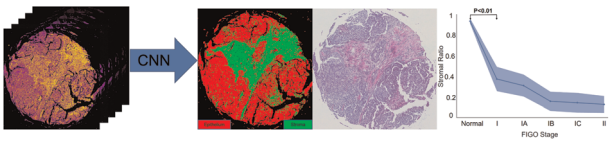
Leveraging mid-infrared spectroscopic imaging and deep learning for tissue subtype classification in ovarian cancer

Chalapathi Charan Gajjela, Matthew Brun, Rupali Mankar, Sara Corvigno, Noah Kennedy, Yanping Zhong, Jinsong Liu, Anil K. Sood, David Mayerich, Sebastian Berisha and Rohith Reddy*



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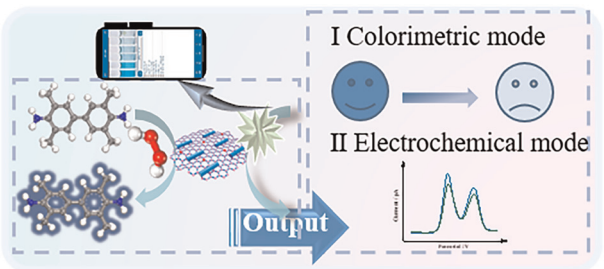
CuO nanorod-decorated hemin-graphene with enhanced peroxidase-mimicking performance for the colorimetric and electrochemical determination of 4-aminophenol with a smartphone

Miaomiao Li, Xiuying Peng, Zhiguang Liu, Yan Dai, Yujie Han, Lifang Fan and Yujing Guo*



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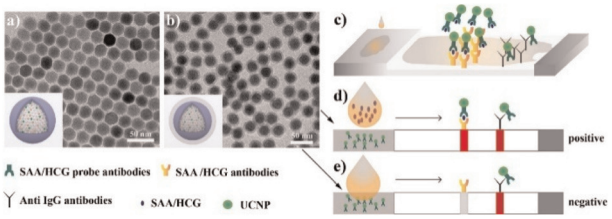

Rapid determination of serum amyloid A using an upconversion luminescent lateral flow immunochromatographic strip

Xinwen Sun, Xiaoru Dai, Shisheng Ling, Wenkun Dong, Dong Chen, Mengting Li, Xvsheng Qiao,* Zhiyu Wang, Xianping Fan and Guodong Qian

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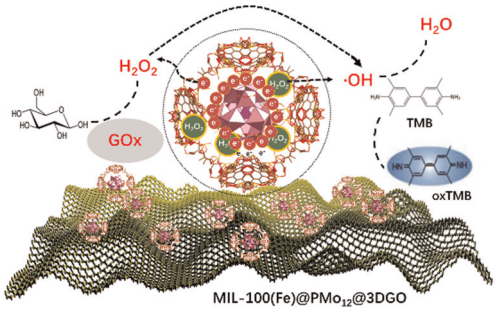

Increasing the peroxidase-like activity of the MIL-100(Fe) nanozyme by encapsulating Keggin-type 12-phosphomolybdate and covering three-dimensional graphene

Yuhan Ji, Yupu Wei, Jinghui Shen, Jinlong Zhuo, Mingqi Xu, Yunliang Wang* and Jingquan Sha*

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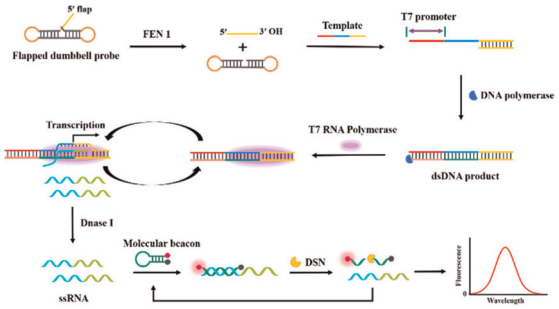

Target-activated T7 transcription circuit-mediated multiple cycling signal amplification for monitoring of flap endonuclease 1 activity in cancer cells

Jin-zhi Zhang, Ning-ning Zhao, Zi-yue Wang, Juan Hu* and Chun-yang Zhang*

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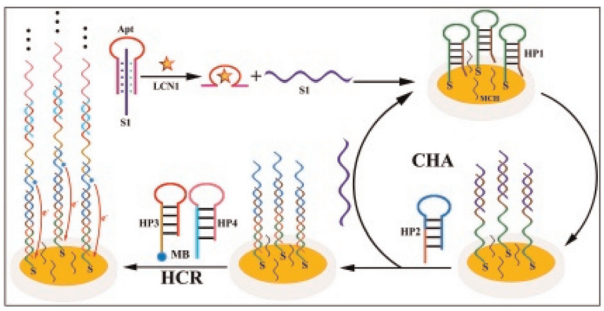

An aptamer triple helix molecular switch for sensitive electrochemical assay of lipocalin 1 biomarker *via* dual signal amplifications

Jianglong Yao, Yujie Liu, Bingying Jiang,* Ruo Yuan and Yun Xiang*

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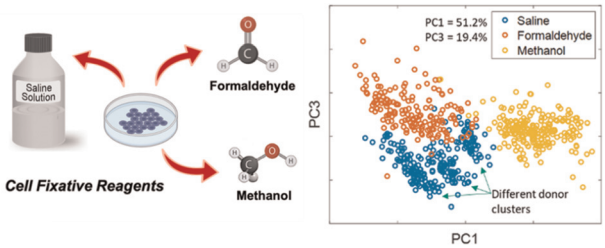
Saline dry fixation for improved cell composition analysis using Raman spectroscopy

Shreyas Rangan, Riley Wong, H. Georg Schulze, Martha Z. Vardaki, Michael W. Blades, Robin F. B. Turner* and James M. Piret*



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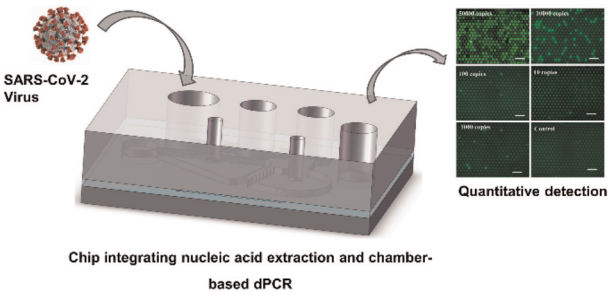
An integrated microfluidic chip for nucleic acid extraction and continued cdPCR detection of pathogens

Yaru Huang, Zehang Gao, Cong Ma, Yimeng Sun, Yuhang Huang, Chunping Jia,* Jianlong Zhao* and Shilun Feng*



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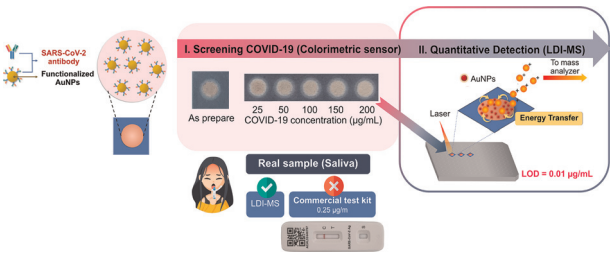
Alternative platform for COVID-19 diagnosis based on AuNP-modified lab-on-paper

Pornchanok Punnoy, Tatiya Siripongpreda, Trairak Pisitkun, Nadnudda Rodthongkum* and Pranut Potiyaraj*



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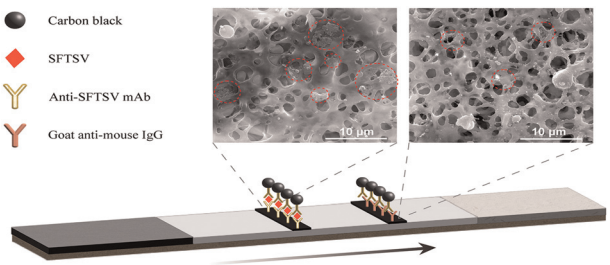
Carbon black as a colorimetric label for an immunochromatographic test strip for severe fever with thrombocytopenia syndrome virus detection

Hao Liu, Fang Ji and Shou-Nian Ding*



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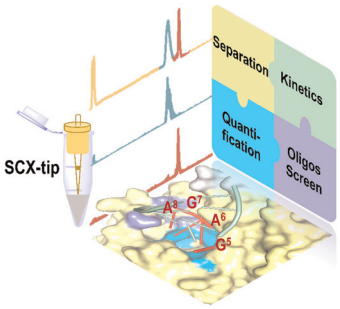

SCX-tip-aided LC-MS detection of active ricin *via* oligonucleotide substrates for depurination kinetics

Zhifang Yang, Chenyu Wang, Lan Xiao, Chuang Wang, Li Tang,* Lei Guo* and Jianwei Xie

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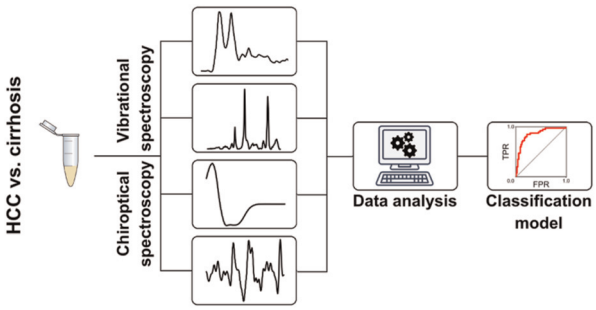

Vibrational and chiroptical analysis of blood plasma for hepatocellular carcinoma diagnostics

Ondřej Vrtělka,* Kateřina Králová, Markéta Fousková, Lucie Habartová, Petr Hříbek, Petr Urbánek and Vladimír Setnička

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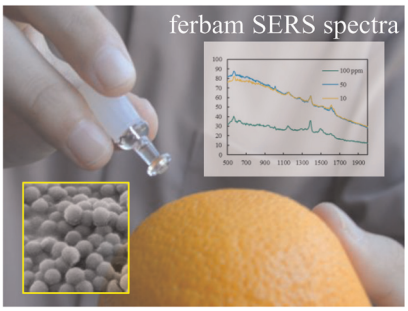

Mass producible, robust SERS substrates based on metal film on nanosphere (MFON) on an adhesive substrate for detection of surface-adsorbed molecules and their evaluation by helium ion microscopy

H. Takei,* N. Saito, T. Okamoto, K. Watanabe, M. Westphal, R. Tomioka and A. Gölzhäuser

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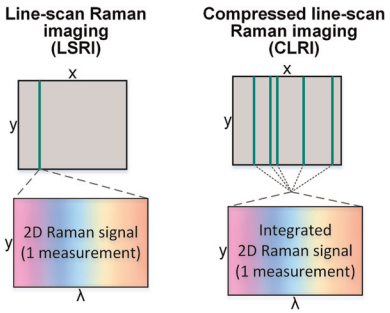

A critical evaluation of compressed line-scan Raman imaging

Yajun Yu,* Yichuan Dai, Xianli Wang, Kaiqin Chu and Zachary J. Smith*

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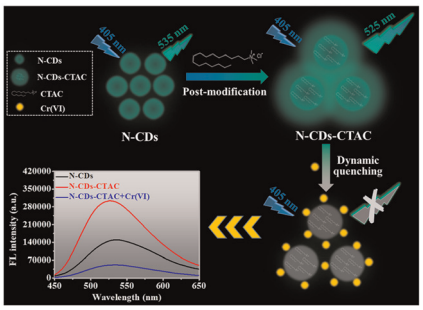
Surfactant encapsulating N-doped carbon dots with enhanced optical properties as a selective sensor for Cr(VI) detection

Qiumeng Chen, Nan Li, Yulu Tian, Qian Liu, Xue Zou, Meikun Fan and Zhengjun Gong*



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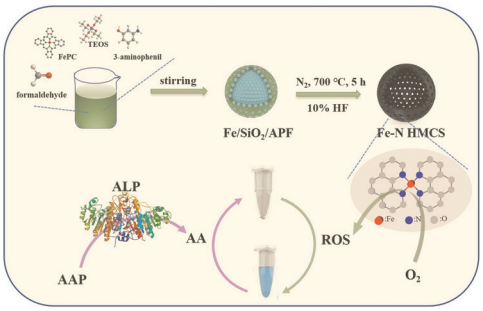
Fe–N hollow mesoporous carbon spheres with high oxidase-like activity for sensitive detection of alkaline phosphatase

Yanwen Chen, Liu Zhao, Baoshuai Zhang, Yuqing Guan, Cheng Yao and Xuan Xu*



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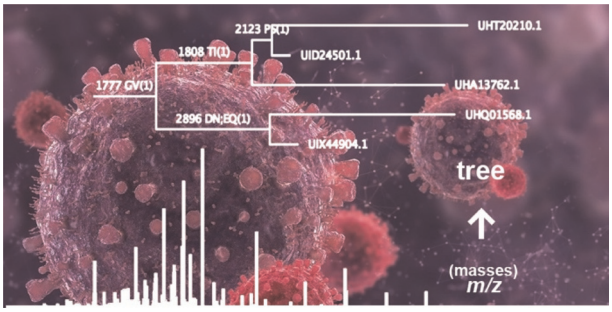
Charting and tracking the evolution of the SARS CoV-2 coronavirus variants of concern with protein mass spectrometry

Joshua S. Hoyle, Christian Mann, Elma H. Akand and Kevin M. Downard*



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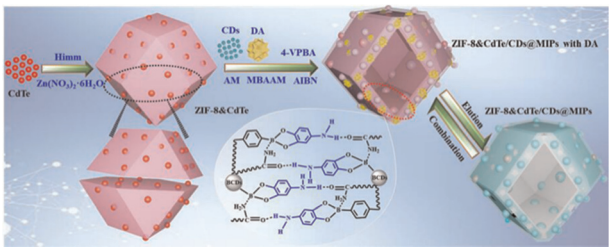
Hollow structure molecularly imprinted ratiometric fluorescence sensor for the selective and sensitive detection of dopamine

Xiqing Liu, Ying Fang, Deqiang Zhu, Jinyu Wang, Yu Wu, Tao Wang* and Yongqing Wang*



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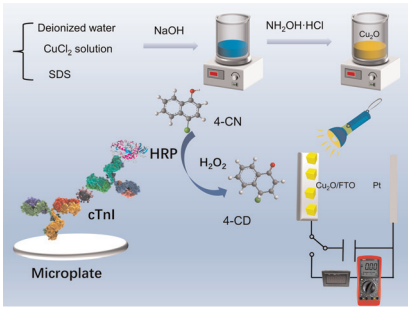

A digital multimeter-based portable photoelectrochemical immunoassay for the detection of cardiac troponin I with enzymatic biocatalytic precipitation

Bizhen Huang, Jing Ran, Ruishen Li, Wei Zhuang, Jiabi Chen* and Haixin Guo*

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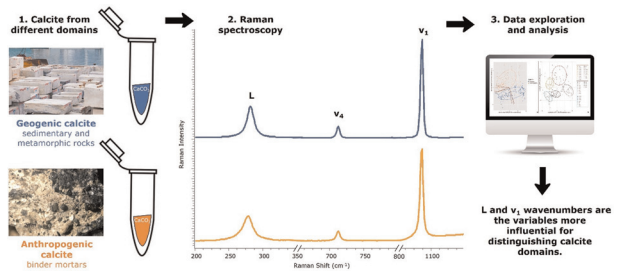

Non-destructive distinction between geogenic and anthropogenic calcite by Raman spectroscopy combined with machine learning workflow

Sara Calandra,* Claudia Conti, Irene Centauro and Emma Cantisani

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