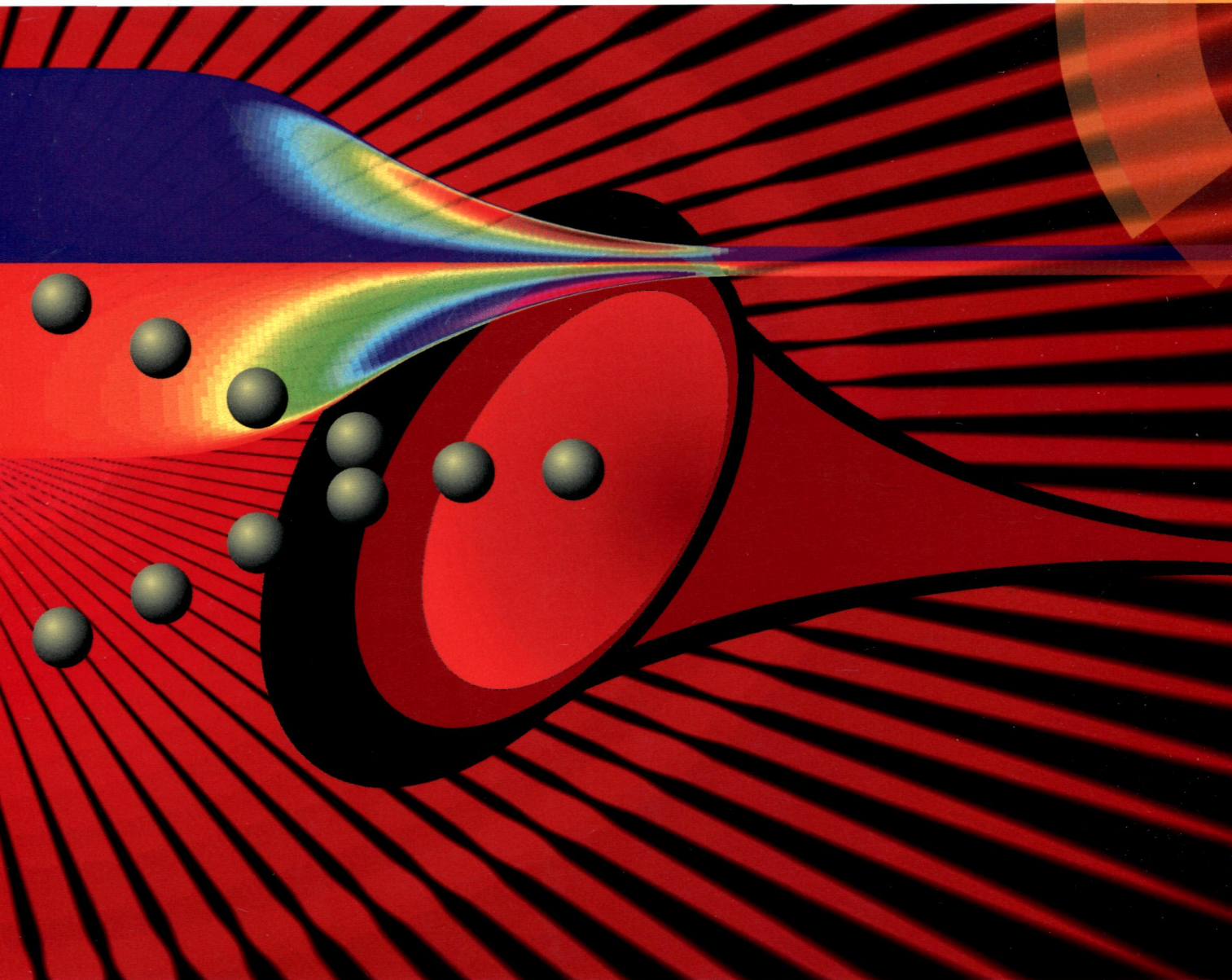
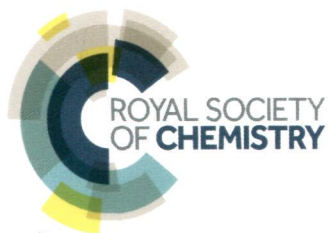


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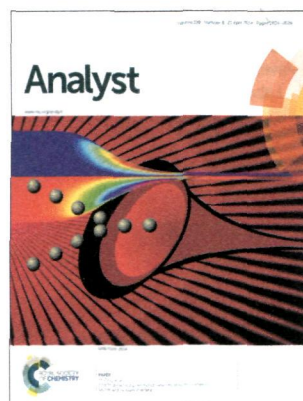
PAPER

M. Pauly *et al.*

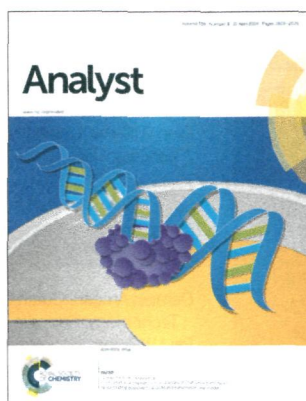
A hydrodynamically optimized nano-electrospray ionization source and vacuum interface

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Cover
See M. Pauly *et al.*,
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See Guilherme N. M. Ferreira
et al., pp. 1847–1855.
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2014, **139**, 1847.

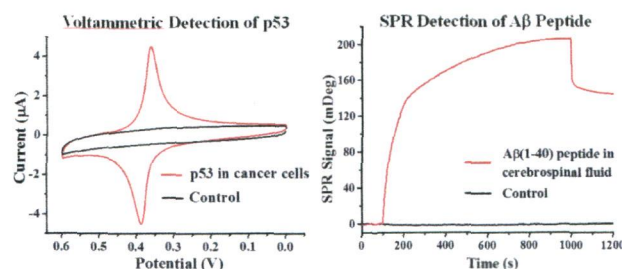
CRITICAL REVIEW

1814

Electroanalytical and surface plasmon resonance sensors for detection of breast cancer and Alzheimer's disease biomarkers in cells and body fluids

Minghui Yang, Xinyao Yi, Jianxiu Wang*
and Feimeng Zhou*

Cancer and neurological disorders are two leading causes of human death.



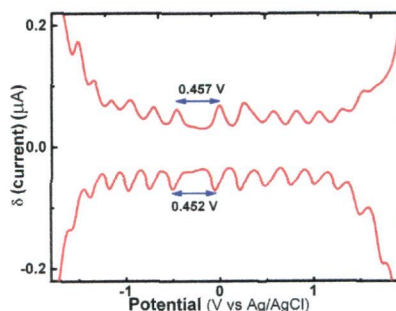
COMMUNICATIONS

1826

Quantized double layer charging of Au₁₃₀(SR)₅₀ nanomolecules

Vijay Reddy Jupally, Jacob G. Thrasher and Amala Dass*

Quantized double layer (QDL) charging of a Au₁₃₀(SR)₅₀ nanomolecule is reported for the first time.



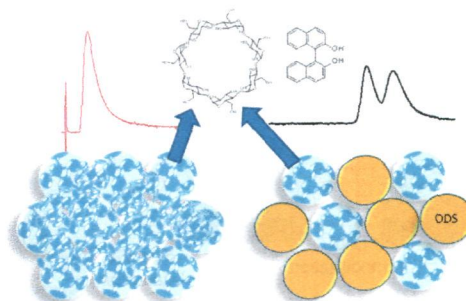
Федеральное государственное
бюджетное учреждение науки
Центральная научная библиотека
Уральского отделения
Российской академии наук (ИГиБ УрО РАН)

1830

Versatile chiral chromatography with mixed stationary phases of water-impregnated silica gel and reversed-phase packing

Satsuki Takahashi and Tetsuo Okada*

A mixed silica and ODS stationary phase promises versatile functional separation.

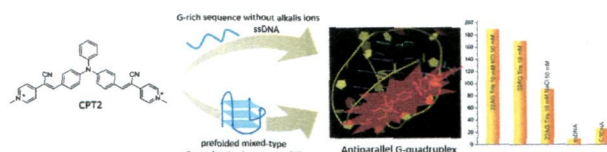


1834

Symmetric cyanovinyl-pyridinium triphenylamine: a novel fluorescent switch-on probe for an antiparallel G-quadruplex

Hai Lai, Yijie Xiao, Shengyong Yan, Fangfang Tian, Cheng Zhong, Yi Liu, Xiaocheng Weng* and Xiang Zhou*

We describe a probe based on a cyanovinyl pyridinium triphenylamine (CPT) derivative, which showed fluorescent switch-on properties toward an antiparallel G-quadruplex.

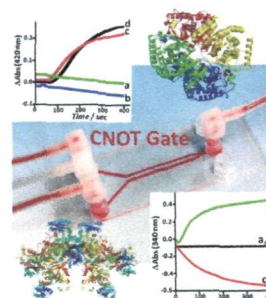


1839

An enzyme-based reversible CNOT logic gate realized in a flow system

Fiona Moseley, Jan Halámek*, Friederike Kramer, Arshak Poghosian, Michael J. Schöning and Evgeny Katz*

A logically reversible CNOT gate was realized in a fluidic system aiming at unconventional biomolecular information processing and biosensing/ biomedical applications.

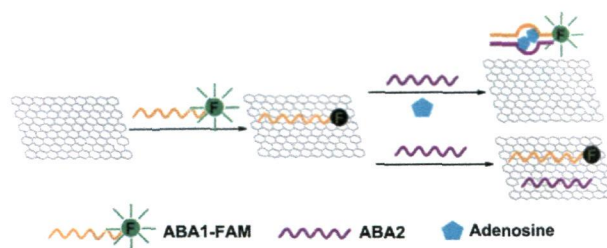


1843

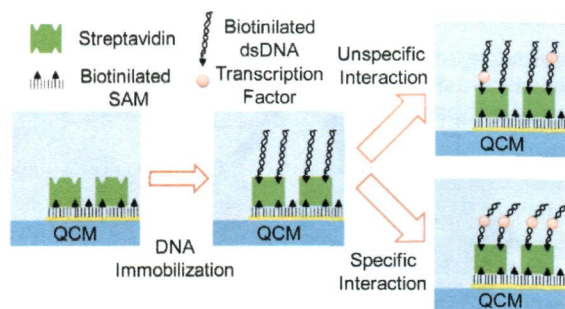
A turn-on fluorescent aptasensor for adenosine detection based on split aptamers and graphene oxide

Yunfeng Bai, Feng Feng*, Lu Zhao, Zezhong Chen, Haiyan Wang and Yali Duan

A simple, sensitive and selective turn-on fluorescent aptasensor for adenosine detection was developed based on target-induced split aptamer fragment conjunction and different interactions of graphene oxide and the two states of the designed aptamer sequences.



1847

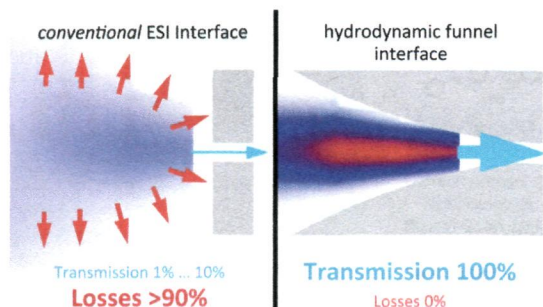


Conformational and mechanical changes of DNA upon transcription factor binding detected by a QCM and transmission line model

Jorge de-Carvalho, Rogério M. M. Rodrigues, Brigitte Tomé, Sílvia F. Henriques, Nuno P. Mira, Isabel Sá-Correia and Guilherme N. M. Ferreira*

A novel QCM analytical methodology based on the transmission line model detects DNA bending upon specific binding of transcription factors.

1856

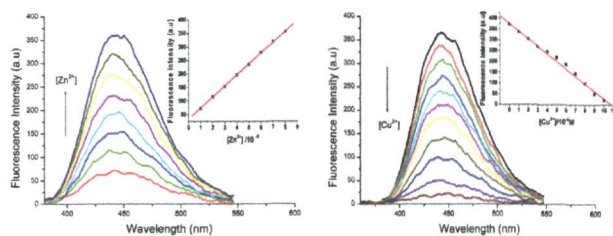


A hydrodynamically optimized nano-electrospray ionization source and vacuum interface

M. Pauly,* M. Sroka, J. Reiss, G. Rinke, A. Albarghash, R. Vogelgesang, H. Hahne, B. Kuster, J. Sesterhenn, K. Kern and S. Rauschenbach*

The gas flow is the most efficient way of controlling ion motion at ambient conditions. The hydrodynamic optimization of a capillary inlet can yield up to 100% ion transmission to vacuum.

1868

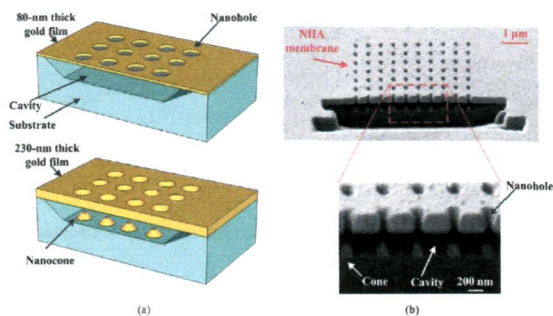


A novel fluorescent 'off-on-off' probe for relay recognition of Zn²⁺ and Cu²⁺ derived from *N,N*-bis(2-pyridylmethyl)amine

Yameng Liu, Qiang Fei, Hongyan Shan, Minghui Cui, Qing Liu, Guodong Feng and Yanfu Huan*

A metal-to-metal relay recognition was discovered with sequence specificity via a fluorescence 'off-on-off' phenomenon.

1876



Surface plasmon resonance sensing properties of a 3D nanostructure consisting of aligned nanohole and nanocone arrays

Mohamadreza Najiminaini, Erden Ertorer, Bozena Kaminska, Silvia Mittler and Jeffrey J. L. Carson*

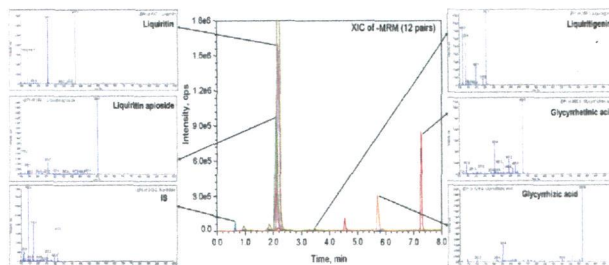
Molecular surface plasmon resonance (SPR) sensing is one of the most common applications of an array of periodic nanoholes in a metal film.

1885

Simultaneous targeted analysis of five active compounds in licorice by ultra-fast liquid chromatography coupled to hybrid linear-ion trap tandem mass spectrometry

Weijun Kong, Jing Wen, Yinhui Yang, Feng Qiu, Ping Sheng and Meihua Yang*

A UFLC-ESI-MS/MS method based on MRM-IDA-EPI mode was developed for targeted identification and quantification of active compounds in licorice.

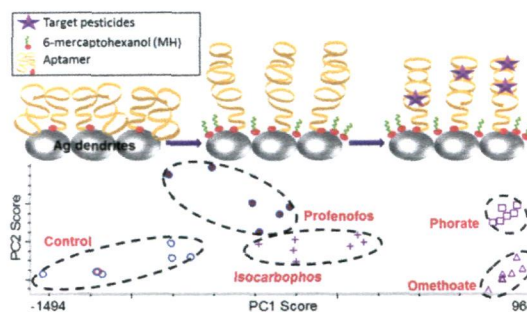


1895

Development of a single aptamer-based surface enhanced Raman scattering method for rapid detection of multiple pesticides

Shintaro Pang, Theodore P. Labuza and Lili He*

A single aptamer-based SERS method is developed for the detection and discrimination of four specific pesticides (isocarbophos, omethoate, phorate, and profenofos).

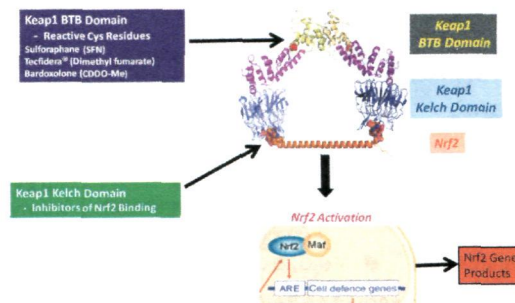


1902

Analytical approaches for quantification of a Nrf2 pathway activator: overcoming bioanalytical challenges to support a toxicity study

Hermes Licea Perez,* Venkatraman Junnotula, Dana Knecht, Hong Nie, Yolanda Sanchez, Jeffrey C. Boehm, Catherine Booth-Genthe, Hongxing Yan, Roderick Davis and James F. Callahan

Activation of the Nrf2 stress pathway is known to play an important role in the defense mechanism against electrophilic and oxidative damage to biological macromolecules (DNA, lipids, and proteins).

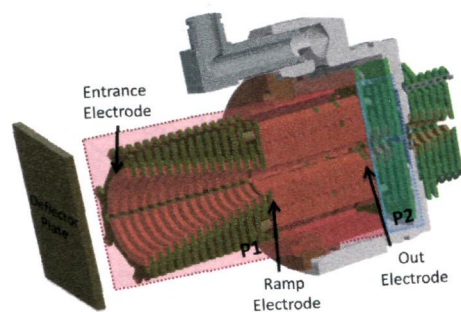


1913

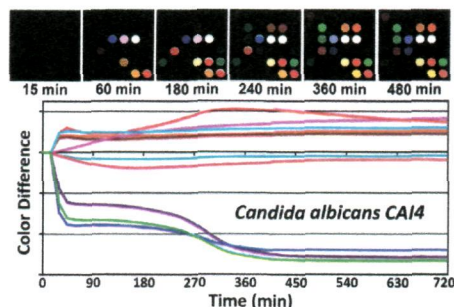
Ion dynamics in a trapped ion mobility spectrometer

Diana Rosa Hernandez, John Daniel DeBord, Mark E. Ridgeway, Desmond A. Kaplan, Melvin A. Park and Francisco Fernandez-Lima*

In the present paper, theoretical simulations and experimental observations are used to describe the ion dynamics in a trapped ion mobility spectrometer.



1922

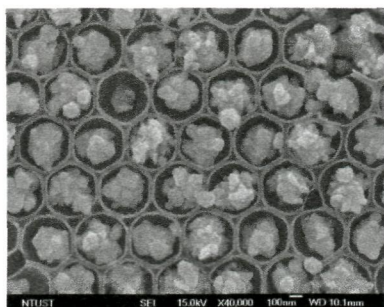


Identification of pathogenic fungi with an optoelectronic nose

Yinan Zhang, Jon R. Askim, Wenxuan Zhong, Peter Orlean and Kenneth S. Suslick*

A disposable colorimetric sensor array capable permits rapid differentiation and identification of 12 pathogenic fungi in 3 h with >98% accuracy, based on their metabolic profiles of emitted volatiles.

1929

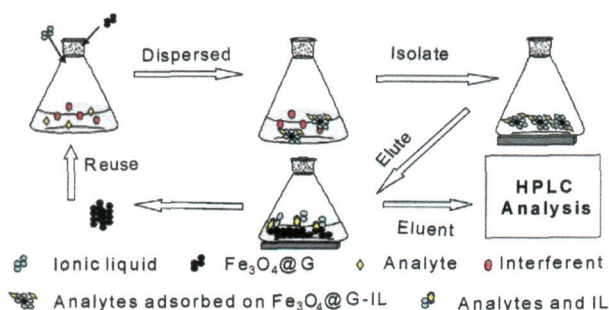


Innovative fabrication of a Au nanoparticle-decorated SiO₂ mask and its activity on surface-enhanced Raman scattering

Liang-Yih Chen, Kuang-Hsuan Yang, Hsiao-Chien Chen, Yu-Chuan Liu,* Ching-Hsiang Chen and Qing-Ye Chen

SEM image of SERS-active Au NPs sonoelectrochemically deposited on a SiO₂ mask array with high reproducibility.

1938

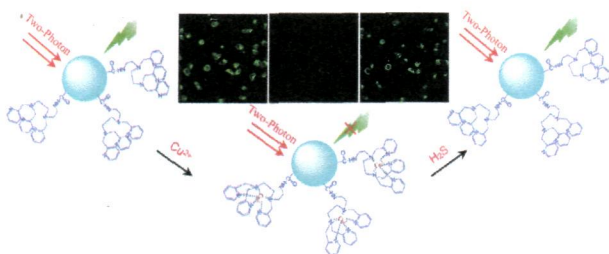


Ultrasound-assisted magnetic solid-phase extraction based ionic liquid-coated Fe₃O₄@graphene for the determination of nitrobenzene compounds in environmental water samples

Xiaoji Cao,* Lingxiao Shen, Xuemin Ye, Feifei Zhang, Jiaoyu Chen and Weimin Mo*

A magnetic solid-phase extraction based on ionic liquid-coated Fe₃O₄-grafted graphene has been developed for the determination of nitrobenzenes in water.

1945



A two-photon "turn-on" fluorescent probe based on carbon nanodots for imaging and selective biosensing of hydrogen sulfide in live cells and tissues

Anwei Zhu, Zongqian Luo, Changqin Ding, Bo Li, Shuang Zhou, Rong Wang* and Yang Tian*

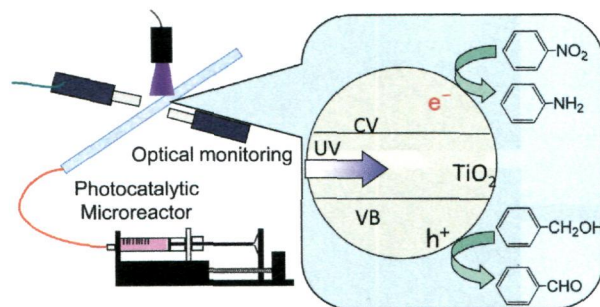
A "turn-on" two-photon fluorescent sensor for H₂S is developed, in which C-Dot is employed as a two-photon fluorophore and AE-TPEA-Cu²⁺ complex is first designed as a specific receptor for H₂S.

1957

Novel method of screening the oxidation and reduction abilities of photocatalytic materials

K. Katayama,* Y. Takeda, K. Shimaoka, K. Yoshida, R. Shimizu, T. Ishiwata, A. Nakamura, S. Kuwahara, A. Mase, T. Sugita and M. Mori

A methodology for understanding the photocatalytic abilities of materials is presented. The conversion of simple organic molecules was monitored *in situ* in photocatalytic microreactors.

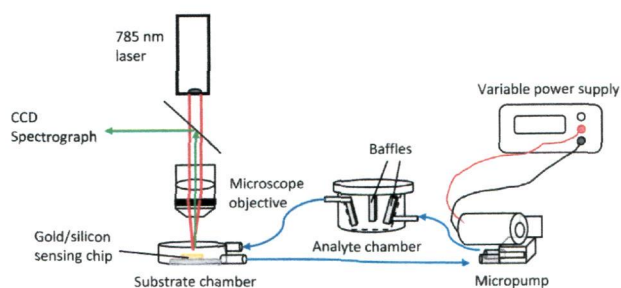


1960

Trace vapour detection at room temperature using Raman spectroscopy

Alison Chou,* Babak Radi, Esa Jaatinen, Saulius Juodkazis and Peter M. Fredericks

A miniaturized flow-through system consisting of a gold coated silicon substrate based on enhanced Raman spectroscopy has been used to study the detection of vapour from model explosive compounds.

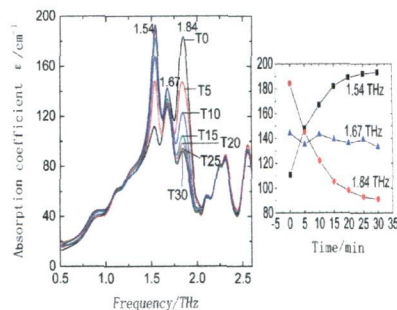


1967

Methanol-induced conformation transition of gland fibroin monitored by FTIR spectroscopy and terahertz spectroscopy

Chao Yan, Bin Yang* and Zhicheng Yu

THz-TDS presents great potential as a complementary approach in monitoring methanol-induced conformation transition of gland fibroin.

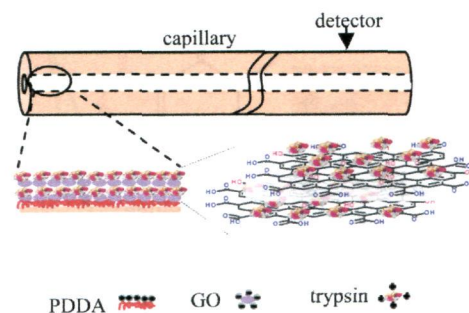


1973

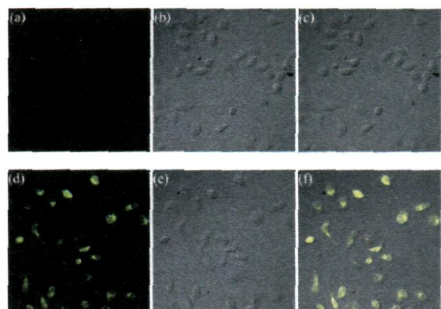
A capillary electrophoresis-based immobilized enzyme reactor using graphene oxide as a support via layer by layer electrostatic assembly

Zhengri Yin, Wenwen Zhao, Miaomiao Tian, Qian Zhang, Liping Guo and Li Yang*

Using graphene oxide as an enzyme support, we developed a novel CE-based microreactor *via* layer-by-layer electrostatic assembly, which can be used for accurate on-line analysis and characterization of peptides and proteins.



1980

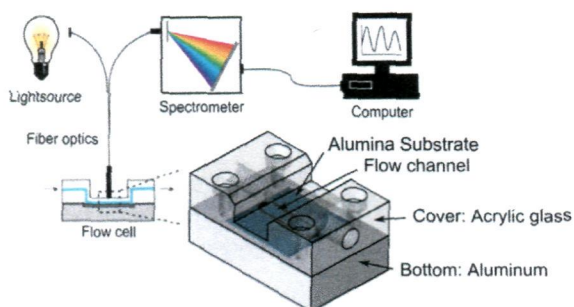


A highly selective turn-on fluorescent probe for Al(III) based on coumarin and its application *in vivo*

Hongde Xiao, Kun Chen, Nannan Jiang, Dandan Cui, Gui Yin,* Jie Wang and Ruiyong Wang*

The probe was applied in the detection of Al³⁺ in living HeLa cells.

1987

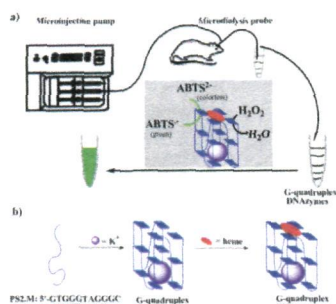


Binding assay for low molecular weight analytes based on reflectometry of absorbing molecules in porous substrates

Milena Stephan, Corinna Kramer, Claudia Steinem and Andreas Janshoff*

Small molecule sensing is of great importance in pharmaceutical research.

1993

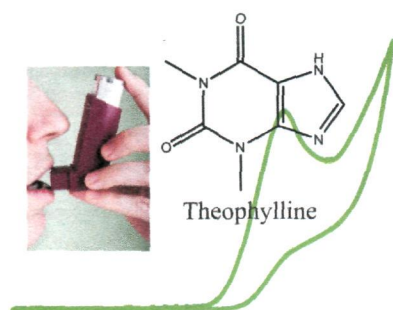


G-quadruplex DNAzymes-induced highly selective and sensitive colorimetric sensing of free heme in rat brain

Ruimin Li, Qin Jiang, Hanjun Cheng, Guoqiang Zhang, Mingming Zhen, Daqin Chen, Jiechao Ge,* Lanqun Mao, Chunru Wang and Chunying Shu*

Direct selective determination of free heme in the cerebral system is of great significance due to the crucial roles of free heme in physiological and pathological processes.

2000



Detection of theophylline utilising portable electrochemical sensors

Tiancheng Wang, Edward P. Randviir and Craig E. Banks*

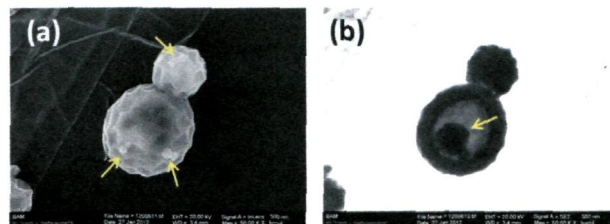
Screen-printed carbon electrodes are utilised to determine concentrations of theophylline under physiological conditions, and display a remarkably versatile linear range.

2004

Characterization of micro- and nanocapsules for self-healing anti-corrosion coatings by high-resolution SEM with coupled transmission mode and EDX

V.-D. Hodoroaba,* D. Akcakayiran, D. O. Grigoriev and D. G. Shchukin

Micro/nanocapsules for self-healing coatings were characterized by high-resolution SEM with coupled transmission mode and EDX.

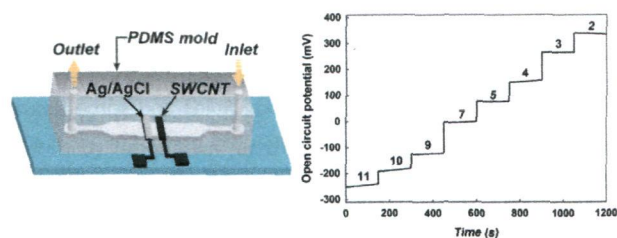


2011

A single-walled carbon nanotube thin film-based pH-sensing microfluidic chip

Cheng Ai Li, Kwi Nam Han, Xuan-Hung Pham and Gi Hun Seong*

A novel microfluidic pH-sensing chip integrated with a pH-sensing SWCNT electrode and an Ag/AgCl reference electrode was developed. The SWCNT thin film acted both as an electrode and a pH-sensitive membrane.



2016

Non-competitive aptamer-based quenching resonance energy transfer assay for homogeneous growth factor quantification

Kari Kopra,* Markku Syrj n p  , Pekka H nninen and Harri H rm 

A direct non-competitive quenching resonance energy transfer (QRET) assay enables a universal single-label protein detection platform utilized by aptamers.

