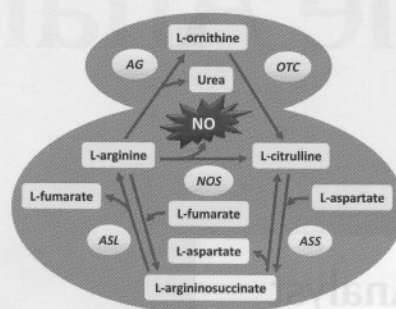


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Detection of nitric oxide in single cells

Xiaoying Ye, Stanislav S. Rubakhin and Jonathan V. Sweedler*

Nitric oxide is an enigmatic cell-to-cell signaling molecule. Analytical techniques enabling nitric oxide detection at single cell levels are reviewed, including fluorescence microscopy, capillary electrophoresis, and electrochemistry.

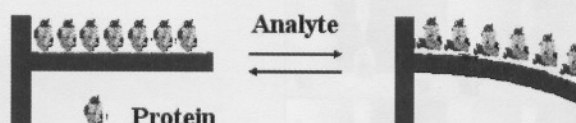


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Microcantilever biosensors based on conformational change of proteins

Hai-Feng Ji,* Hongyan Gao, Koutilya R. Buchapudi, Xin Yang, Xiaohu Xu and Marvin K. Schulte

This review will provide an overview of microcantilever biosensors based on conformational change of proteins bound to the microcantilever surface. The models include conformational change of proteins, proteins on membranes, enzymes, DNA, and other polymers



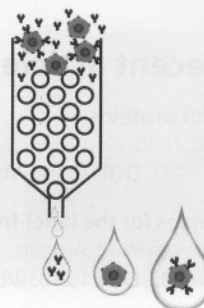
COMMUNICATIONS

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Simple bio-conjugation of polymer-coated quantum dots with antibodies for fluorescence-based immunoassays

M. T. Fernández-Argüelles, J. M. Costa-Fernández, R. Pereiro and A. Sanz-Medel*

For the synthesis and purification of polymer-coated quantum dot-labelled antibodies, purified bio-conjugates are characterized by fluorescence emission and MALDI-TOFMS, and then evaluated in a fluorescence immunoassay for the detection of toxic aflatoxin B1.

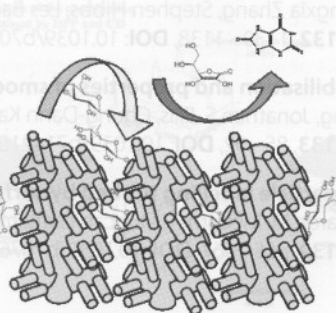


448

Direct amperometric detection of glucose on a multiple-branching carbon nanotube forest

Chow Khim Tan, Kian Ping Loh* and Thong T. L. John

Direct amperometric sensing of glucose has been achieved by using multiply-branched CNTs prepared by growing secondary or tertiary 'offshoot' CNTs on top of the existing CNT layer.

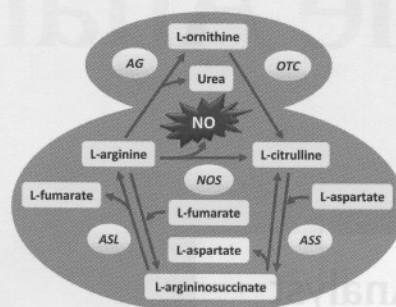


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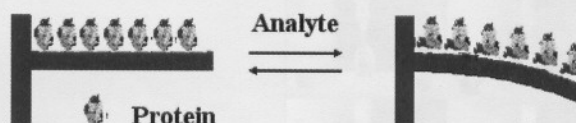


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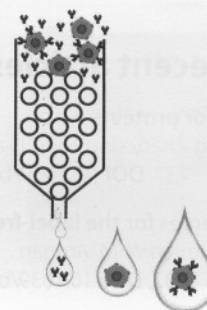
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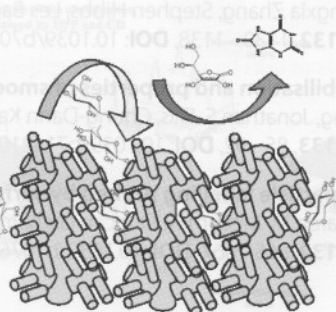


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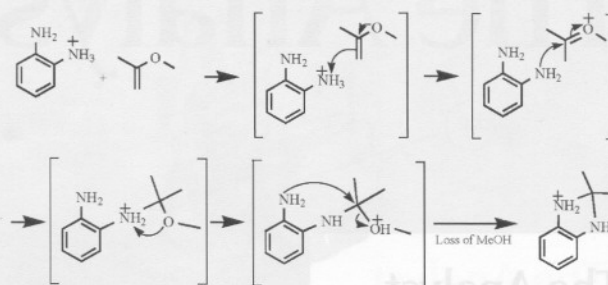


452

Regioselective ion–molecule reactions for the mass spectrometric differentiation of protonated isomeric aromatic diamines

Mingkun Fu, Penggao Duan, Sen Li, Steven C. Habicht, David S. Pinkston, Nelson R. Vinuela and Hilkka I. Kenttämä*

Regioselective ion–molecule reactions allow the differentiation of protonated *ortho*-, *meta*- and *para*-isomers of phenylene- and toluenediamines in FT-ICR.



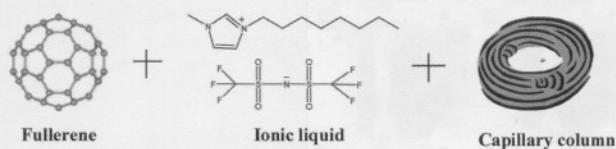
PAPERS

455

Fullerene-impregnated ionic liquid stationary phases for gas chromatography

Chieu D. Tran* and Santhosh Challa

Novel GC stationary phases based on amino and hydroxy derivatives of C_{60} were successfully prepared using ionic liquids, and were able to separate polar as well as non-polar analytes.

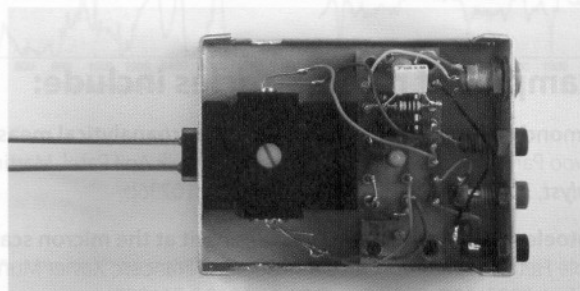


465

UV-absorbance detector for HPLC based on a light-emitting diode

Stefan Schmid, Mirek Macka and Peter C. Hauser*

Detection in the deep-UV at 255 nm has become possible using solid state optoelectronic components.



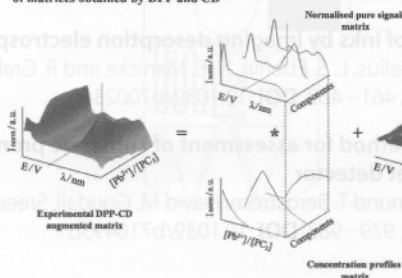
470

Combined use of the potential shift correction and the simultaneous treatment of spectroscopic and electrochemical data by multivariate curve resolution: analysis of a Pb(II)–phytochelatin system

Aristides Alberich, José Manuel Díaz-Cruz,* Cristina Ariño and Miquel Esteban

A combination of differential pulse polarographic and circular dichroism measurements with (potential shift corrected) multivariate curve resolution by alternating least squares for data treatment is applied to the study of the binding of Pb(II) by the phytochelatin $(\gamma\text{-Glu-Cys})_3\text{-Gly}$.

MCR-ALS analysis of the combination of matrices obtained by DPP and CD

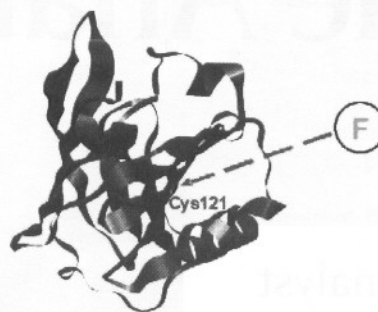


478

Characterization of local polarity and structure of Cys121 domain in β -lactoglobulin with a new thiol-specific fluorescent probe

Xiaochun Wang, Shujuan Wang and Huimin Ma*

A polarity-sensitive fluorescent probe, 3-(4-chloro-6-*p*-maleimidylphenoxy)-1,3,5-triazinylamino)-7-dimethylamino-2-methylphenazine, is developed to characterize the local polarity and structure of a protein, such as the Cys121 domain of β -lactoglobulin.

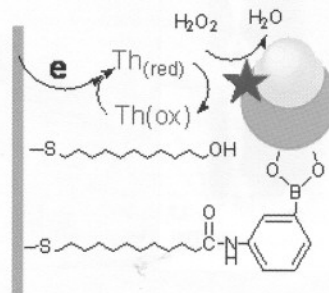


485

A reusable electrochemical immunosensor for carcinoembryonic antigen *via* molecular recognition of glycoprotein antibody by phenylboronic acid self-assembly layer on gold

Xiaoting Zhang, Yafeng Wu, Yifeng Tu* and Songqing Liu*

A reusable amperometric immunosensor for carcinoembryonic antigen detection based on the reversible boronic acid–sugar interactions is proposed.

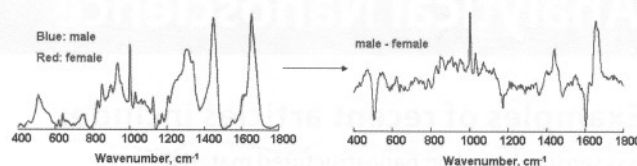


493

A novel method for human gender classification using Raman spectroscopy of fingernail clippings

Effendi Widjaja,* Geok Hong Lim and An An

A novel method for human gender classification by measuring the Raman spectrum of fingernail clippings is described. A combination algorithm of principal component analysis (PCA) and support vector machines (SVM) was used to perform the data classification, which provides classification accuracy up to 90%.

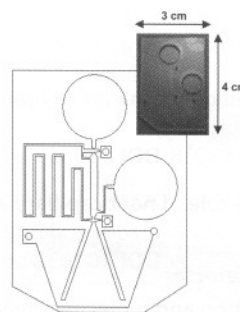


499

Fluorescence affinity sensing by using a self-contained fluid manoeuvring microfluidic chip

Jung Woo Hong, Kwang Hyo Chung and Hyun C. Yoon*

An application of a novel polymer microfluidic chip for sample exchange *via* natural capillary forces for immuno-analysis is described. The microfluidic device was designed to achieve sample replacement by capillary force only, which would be suitable for point-of-care-testing.

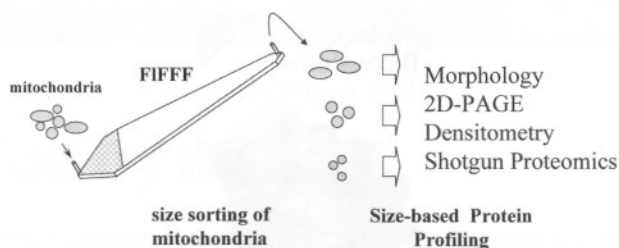


505

Separation of mitochondria by flow field-flow fractionation for proteomic analysis

Dukjin Kang, Sunok Oh, Pierluigi Reschiglian and Myeong Hee Moon*

Flow field-flow fractionation (FIFFF) is utilized for the size separation of rat liver mitochondria, and proteins of differently sized mitochondria are examined by shotgun proteomics and 2D-PAGE.

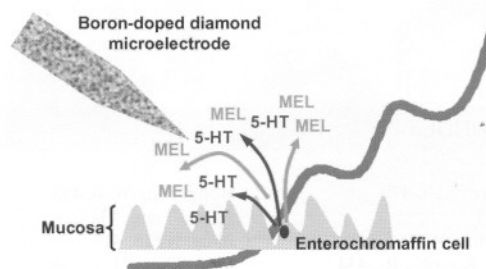


516

Continuous amperometric detection of co-released serotonin and melatonin from the mucosa in the ileum

Bhavik Anil Patel*

The detection of co-released neurotransmitters, serotonin and melatonin was conducted from enterochromaffin cells in the mucosal lining of the ileum using a boron-doped diamond microelectrode.

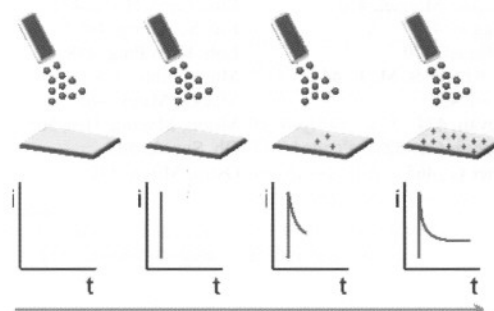


525

Surface effects and electrochemical cell capacitance in desorption electrospray ionization

Michael Volný, Andre Venter, Scott A. Smith, Marco Pazzi and R. Graham Cooks*

Experiments demonstrate that the DESI source behaves as a dc capacitor. The charging and discharging behaviour was observed using different surfaces by making current measurements on a plate at the entrance to the mass spectrometer, as well as by measuring ion current in the linear ion trap within the vacuum system of the mass spectrometer.

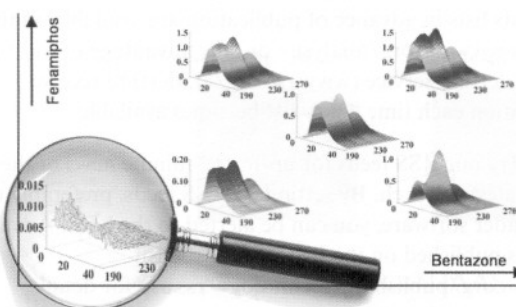


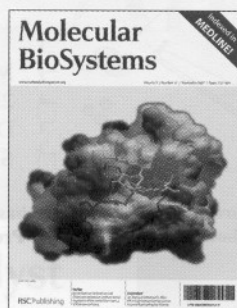
532

Detection limit estimator for multivariate calibration by an extension of the IUPAC recommendations for univariate methods

Miren Ostra, Carlos Ubide,* Maider Vidal and Juan Zuriarrain

A method to estimate the limit of detection when multivariate calibration is used. The main feature is that it uses raw multivariate data instead of a univariate surrogate signal.





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