

Analyst

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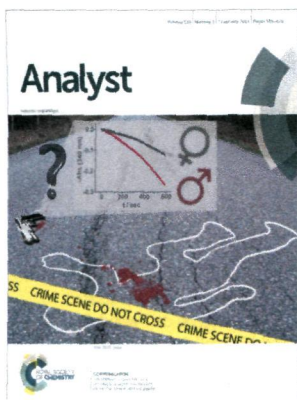
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COMMUNICATION
Jan Halánek, Evgeny Katz *et al.*
Biocatalytic analysis of biomarkers
for forensic identification of gender

IN THIS ISSUE

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Cover

See Jan Halámek, Evgeny Katz *et al.*, pp. 559–563.

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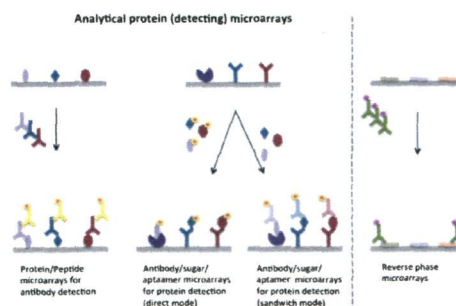
CRITICAL REVIEWS

528

Protein microarray technology: how far off is routine diagnostics?

Marina Cretich,* Francesco Damini and Marcella Chiari

This review article is focused on the operational challenges that are crucial for the use of microarrays in clinical settings.

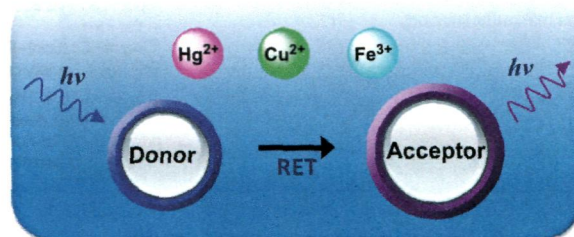


543

Resonance energy transfer-based fluorescent probes for Hg²⁺, Cu²⁺ and Fe²⁺/Fe³⁺ ions

Naresh Kumar, Vandana Bhalla and Manoj Kumar*

In this review, our aim is to highlight the applications of resonance energy transfer mechanisms for the development of fluorescent probes for Hg²⁺, Cu²⁺ and Fe²⁺/Fe³⁺ ions.

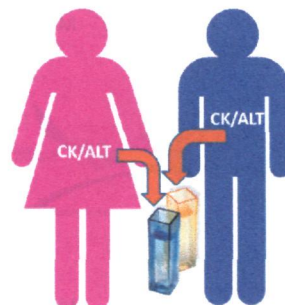


559

Biocatalytic analysis of biomarkers for forensic identification of gender

Saira Bakshi, Lenka Halámková, Jan Halánek* and Evgeny Katz*

A biocatalytic assay analyzing the simultaneous presence of creatine kinase (CK) and alanine transaminase (ALT) recognizes biofluids of different gender for forensic applications.

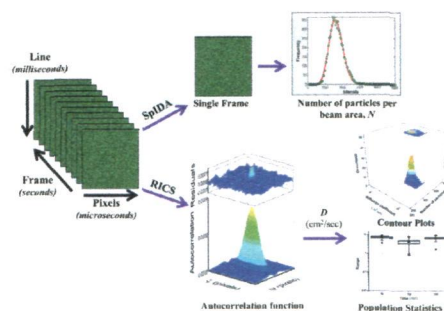


564

Real-time evaluation of aggregation using confocal imaging and image analysis tools

Zahra Hamrang,* Egor Zindy, David Clarke and Alain Pluen*

Real-time confocal imaging was utilised to monitor the *in situ* loss of BSA monomers and aggregate formation using Spatial Intensity Distribution Analysis (SpIDA) and Raster Image Correlation Spectroscopy (RICS).

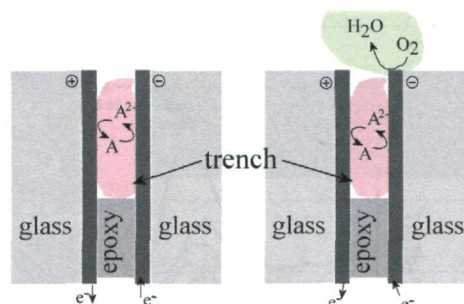


569

A dual-plate ITO–ITO generator–collector microtrench sensor: surface activation, spatial separation and suppression of irreversible oxygen and ascorbate interference

Mohammad A. Hasnat, Andrew J. Gross, Sara E. C. Dale, Edward O. Barnes, Richard G. Compton and Frank Marken*

A dual-plate micro-trench electrode system under bipotentiostatic control is shown to remove interferents such as oxygen or ascorbate *in situ* during electroanalysis.

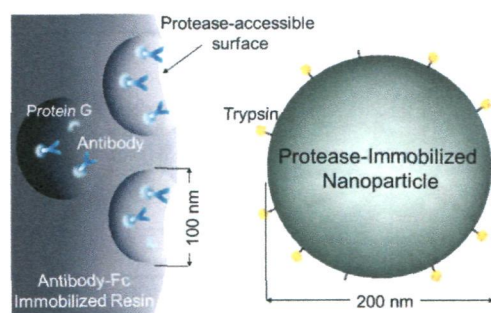


576

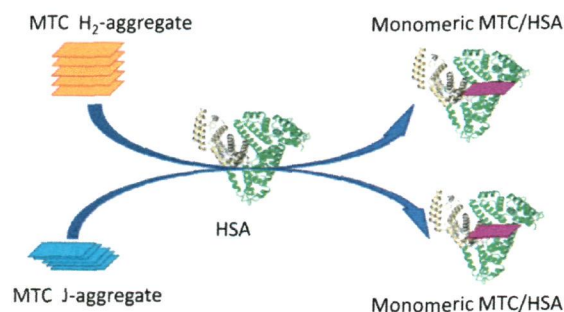
Selective detection of complementarity-determining regions of monoclonal antibody by limiting protease access to the substrate: nano-surface and molecular-orientation limited proteolysis

Noriko Iwamoto, Takashi Shimada,* Yukari Umino, Chikage Aoki, Yutaka Aoki, Taka-Aki Sato, Akinobu Hamada and Hitoshi Nakagama

Limited proteolysis of CDR-derived peptides in monoclonal antibody by nano-surface and molecular-orientation limited proteolysis: nSMOL proteolysis.



581

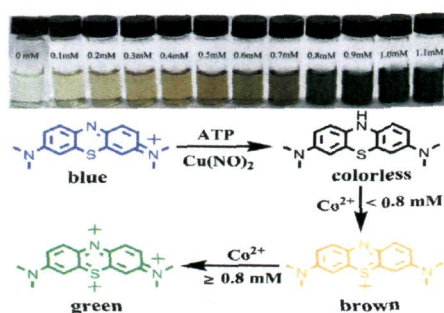


A colorimetric and fluorometric dual-modal supramolecular chemosensor and its application for HSA detection

Hongxia Sun,* Junfeng Xiang, Xiufeng Zhang, Hongbo Chen, Qianfan Yang, Qian Li, Aijiao Guan, Qian Shang, Yalin Tang* and Guangzhi Xu

A colorimetric and fluorometric dual-modal supramolecular chemosensor has been designed for HSA detection.

585



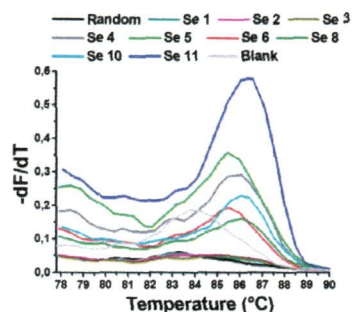
A simple and novel system for colorimetric detection of cobalt ions

Zhimin Liu, Xinle Jia, Pingping Bian and Zhanfang Ma*

A simple method for colorimetric detection of Co²⁺ is developed based on controlling the oxidation level of methylene blue, showing high selectivity and sensitivity.

PAPERS

589

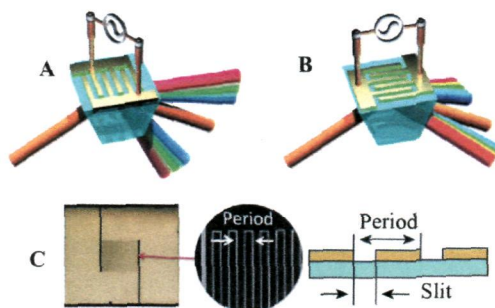


reMelting curve analysis as a tool for enrichment monitoring in the SELEX process

Jeroen Vanbrabant,* Karen Leirs, Katrijn Vanschoenbeek, Jeroen Lammertyn and Luc Michiels*

reMelting curve analysis of amplified ssDNA SELEX pools indicates decreasing diversity or aptamer enrichment by increased remelting temperature, regardless of SELEX design and target properties.

596



Combined surface plasmon resonance and impedance spectroscopy systems for biosensing

S. Patskovsky,* V. Latendresse, A.-M. Dallaire, L. Doré-Mathieu and M. Meunier

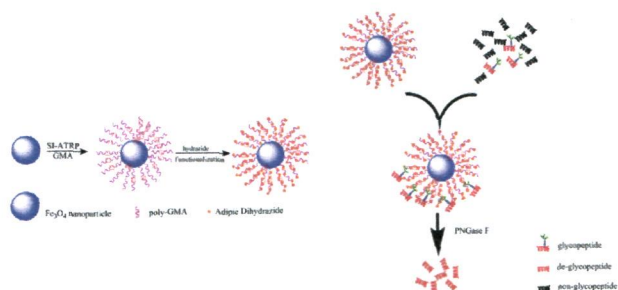
Combined surface plasmon resonance and electrochemical impedance spectroscopy (SP-EIS) biosensing systems have been developed.

603

Multivalent hydrazide-functionalized magnetic nanoparticles for glycopeptide enrichment and identification

Qichen Cao, Cheng Ma, Haihong Bai, Xianyu Li, Hui Yan, Yan Zhao, Wantao Ying* and Xiaohong Qian*

A novel type of magnetic nanoparticle functionalized with multiple hydrazide groups was synthesized to provide a large capacity for capturing glycopeptides.

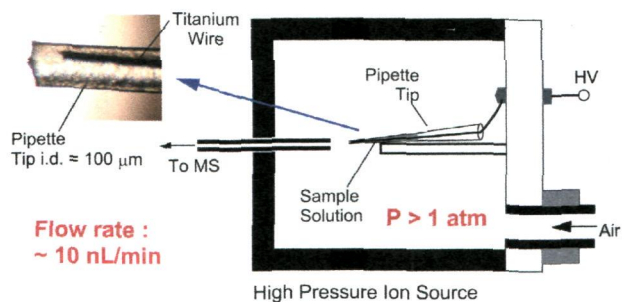


610

Realizing nano electrospray ionization using disposable pipette tips under super atmospheric pressure

Md. Matiur Rahman, Kenzo Hiraoka and Lee Chuin Chen*

Nano electrospray ionization with a solution flow rate of ~ 10 nL min⁻¹ for aqueous solutions was realized using disposable plastic pipette tips with inner diameter of 100 μ m as ESI emitters.

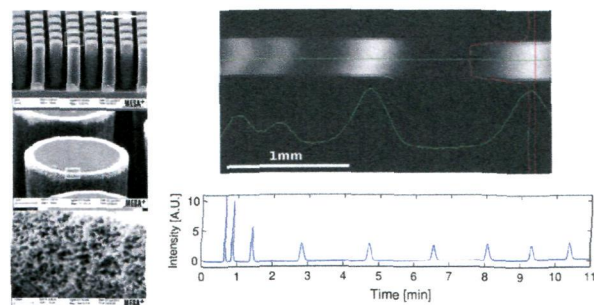


618

Integration of uniform porous shell layers in very long pillar array columns using electrochemical anodization for liquid chromatography

Manly Callewaert, Jeff Op De Beeck, Katsuyuki Maeno, Sertan Sukas, Hugo Thienpont, Heidi Ottevaere, Han Gardeniers, Gert Desmet and Wim De Malsche*

Large peak capacities were obtained with anodized pillar arrays in reversed phase chromatography mode on a reconfigured commercial HPLC instrument.

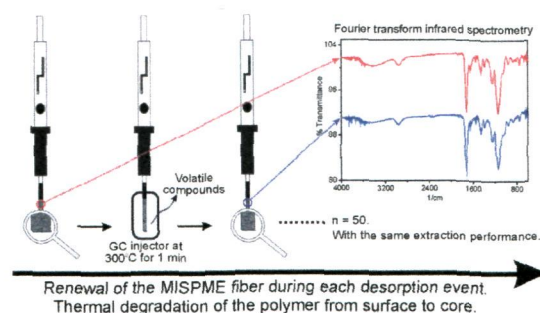


626

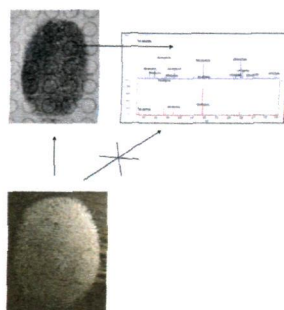
Molecularly imprinted fibers with renewable surface for solid-phase microextraction of triazoles from grape juice samples followed by gas chromatography mass spectrometry analysis

Lissara Aparecida de Souza Freitas, André Coutinho Vieira, João Antônio Felipe Risolia Mendonça and Eduardo Costa Figueiredo*

Synthesis and characterization of a new MISPME fiber able to renew its selective binding sites because of the gradual thermal decomposition of the polymeric network.



633

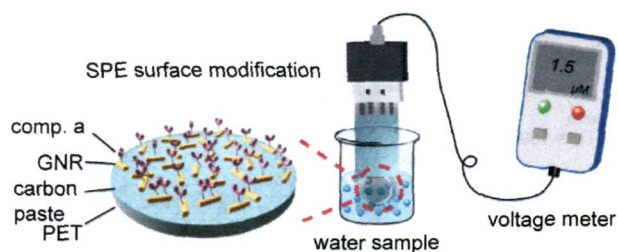


Detection of drugs in lifted cyanoacrylate-developed latent fingerprints using two laser desorption/ionisation mass spectrometric methods

Latha Sundar and Frederick Rowell*

This paper describes a method for lifting cyanoacrylate (CNA)-developed latent fingerprints from a glass surface and the detection of five drugs in lifted marks from fingers that had been in contact with the drugs, using Surface Assisted Laser Desorption Ionisation Time of Flight Mass Spectrometry (SALDI-TOF-MS) or Matrix Assisted Laser Desorption Ionisation TOF-MS (MALDI-TOF-MS).

643

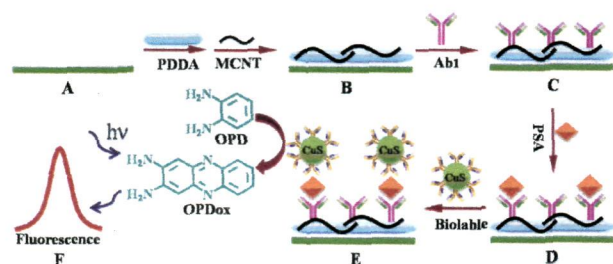


Ion-selective gold-thiol film on integrated screen-printed electrodes for analysis of Cu(II) ions

Meng Li, Hao Zhou, Lei Shi, Da-Wei Li and Yi-Tao Long*

A novel type of ion-selective electrode, which applied integrated screen-printed electrodes as substrates, was prepared for the analysis of Cu(II) ions.

649

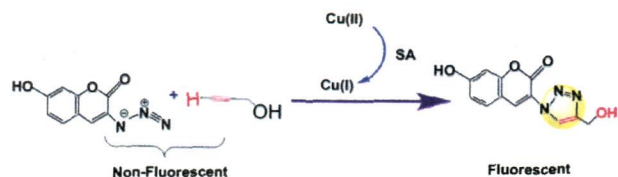


Fluorescent immunosensor based on CuS nanoparticles for sensitive detection of cancer biomarker

Ying-Di Zhu, Juan Peng, Li-Ping Jiang* and Jun-Jie Zhu

Fluorescent immunosensor based on the use of CuS nanoparticles as labels for the detection of human prostate cancer biomarker prostate specific antigen.

656



Fluorescence sensor for Cu(II) in the serum sample based on click chemistry

Chunmei Wang, Lijun Lu, Wenmei Ye, Ou Zheng,* Bin Qiu, Zhenyu Lin,* Longhua Guo and Guonan Chen

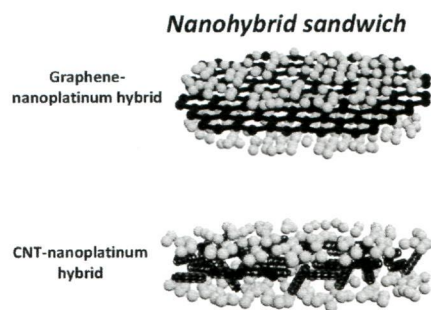
A simple and sensitive fluorescence sensor which combines the character of high selectivity of click chemistry and high sensitivity of fluorescence detection has been developed for Cu(II) detection.

660

A comparative study of carbon–platinum hybrid nanostructure architecture for amperometric biosensing

Diana C. Vanegas, Masashige Taguchi, Prachee Chaturvedi, Stephanie Burrs, Michael Tan, Hitomi Yamaguchi and Eric S. McLamore*

This facile graph-onto methodology is highly efficient and competes with relatively complex graph-from synthesis of carbon–metal hybrid nanocomposites.



668

In-SEM Raman microspectroscopy coupled with EDX – a case study of uranium reference particles

Elżbieta A. Stefaniak,* Fabien Pointurier, Olivier Marie, Jan Truyens and Yetunde Aregbe

In-SEM-Raman microanalysis used to detect U(VI)-rich particles proved their exceptional fragility leading to damage and change of uranium oxidation state.

