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Analyst

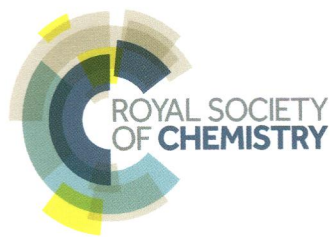
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$^{44}\text{Ca}/^{43}\text{Ca}$
Isotope dilution
ID-ICP-MS

Ca

Seawater Calcium

ISSN 0003-2654

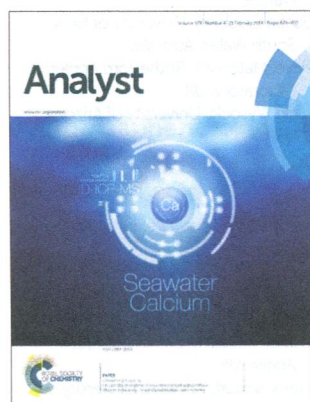


PAPER

Chen-Feng You *et al.*
Precise determination of seawater calcium using isotope dilution inductively coupled plasma mass spectrometry

IN THIS ISSUE

ISSN 0003-2654 CODEN ANALAO 139(4) 679–852 (2014)



Cover

See Chen-Feng You *et al.*, pp. 734–741. Image reproduced by permission of Chen-Feng You from *Analyst*, 2014, **139**, 734.

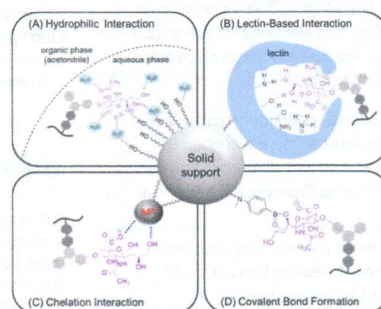
CRITICAL REVIEW

688

Interaction modes and approaches to glycopeptide and glycoprotein enrichment

Chen-Chun Chen, Wan-Chih Su, Bao-Yu Huang, Yu-Ju Chen, Hwan-Ching Tai* and Rofeamor P. Obena*

We discussed the fundamental chemical and physical processes for the commonly used approaches to provide mechanistic insight in glycopeptide/glycoprotein enrichment.



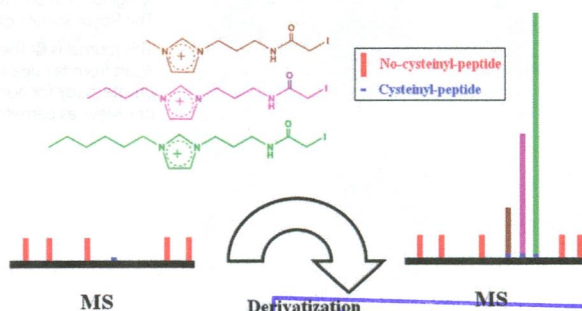
COMMUNICATIONS

705

Imidazolium-based iodoacetamide functional tags: design, synthesis, and property study for cysteinyl-peptide analysis by mass spectrometry

Xiaoqiang Qiao,* Rui Wang, Guangyue Li, Hongyuan Yan, Yuan Zhou, Lihua Zhang* and Yukui Zhang

Novel types of imidazolium-based iodoacetamide tags were designed, synthesized and applied for efficient analysis of cysteinyl-peptides by mass spectrometry.



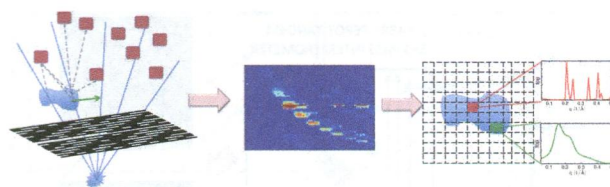
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Центральная научная библиотека
Уральского отделения
Российской академии наук (ЦНБ УрО РАН)

709

Structured illumination for tomographic X-ray diffraction imaging

Joel A. Greenberg, Mehadi Hassan, Kalyani Krishnamurthy and David Brady*

Structuring spatially the X-ray illumination incident on an object moving relative to the source enables real-time molecular imaging using a table-top setup.

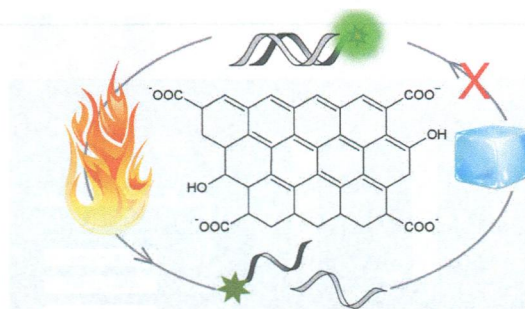


714

Nano-graphene oxide as a novel platform for monitoring the effect of LNA modification on nucleic acid interactions

Muhit Rana, Mustafa Balcioglu, Neil Robertson and Mehmet V. Yigit*

Graphene oxide serves as a stable nano-platform for adsorption of nucleic acids with or without LNA base modification while providing kinetic and spectroscopic information about the interaction.

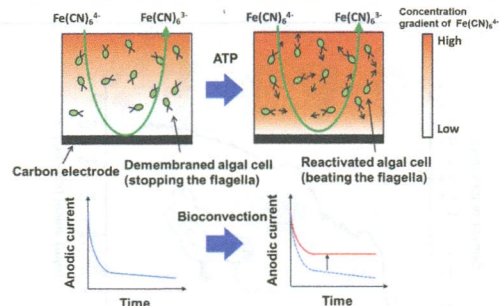


721

Electrochemical monitoring systems of demembrated flagellate algal motility for ATP sensing

Isao Shitanda,* Koji Tanaka, Yoshinao Hoshi and Masayuki Itagaki

The ATP-induced behavior of the unicellular flagellate alga *Chlamydomonas reinhardtii* was recorded as changes in the redox currents for a coexisting redox marker.

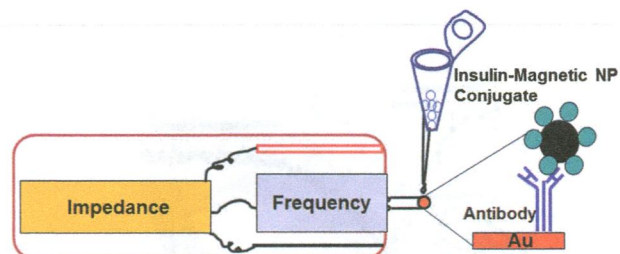


724

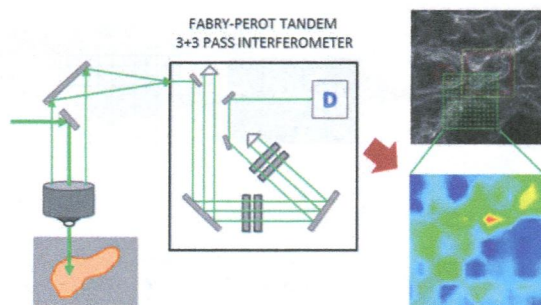
An electrochemical mass sensor for diagnosing diabetes in human serum

Vini Singh and Sadagopan Krishnan*

A dual-mode immunosensor for diagnosing diabetes in human serum is reported.



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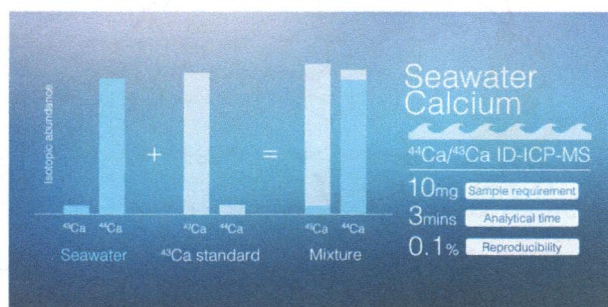
Mechanical mapping with chemical specificity by confocal Brillouin and Raman microscopy

F. Palombo,* M. Madami, N. Stone and D. Fioretto

Confocal Brillouin and Raman microscopies provide non-contact label-free mechanochemical mapping of epithelial tissue, Barrett's oesophagus at high spatial resolution.

PAPERS

734

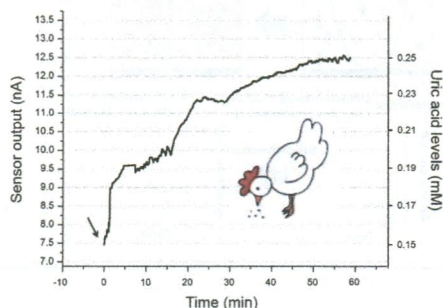


Precise determination of seawater calcium using isotope dilution inductively coupled plasma mass spectrometry

Hou-Chun Liu, Chen-Feng You,* Wei-Jun Cai, Chuan-Hsiung Chung, Kuo-Fang Huang, Bao-Shan Chen and Yen Li

A method for rapid, precise and accurate determination of seawater calcium ions using isotope dilution inductively coupled plasma mass spectrometry.

742

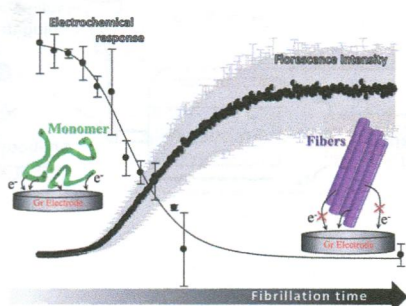


Real-time *in vivo* uric acid biosensor system for biophysical monitoring of birds

A. Gumus, S. Lee, K. Karlsson, R. Gabrielson, D. W. Winkler and D. Erickson*

A biosensor system that can continuously monitor *in vivo* subcutaneous uric acid levels of birds in real-time.

749



Electrochemical analysis of the fibrillation of Parkinson's disease α -synuclein

Paula Lopes, Hans Dyrnesli, Nikolai Lorenzen, Daniel Otzen and Elena E. Ferapontova*

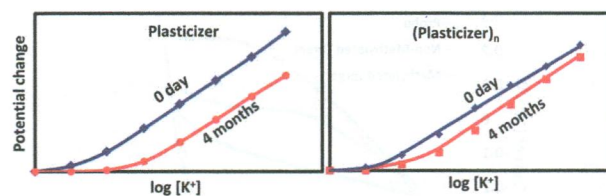
Electrochemical monitoring of the α -synuclein fibrillation process, performed *via* oxidation of tyrosine residues surface-exposed in monomeric and buried in fibrillated protein, correlates well with the spectroscopic analysis data.

757

Polymeric plasticizer extends the lifetime of PVC-membrane ion-selective electrodes

Elsayed M. Zahran, Andrea New, Vasilis Gavalas and Leonidas G. Bachas*

Membrane electrodes plasticized with poly(butylene sebacate) maintained optimum performance for longer time.

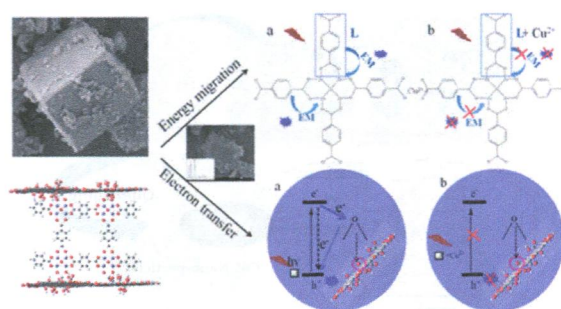


764

A cubic luminescent graphene oxide functionalized Zn-based metal-organic framework composite for fast and highly selective detection of Cu²⁺ ions in aqueous solution

Liyang Hao, Hongjie Song, Yingying Su and Yi Lv*

A graphene oxide functionalized zinc-based composite detected copper ions in aqueous solution selectively and with good sensitivity by a luminescence response.

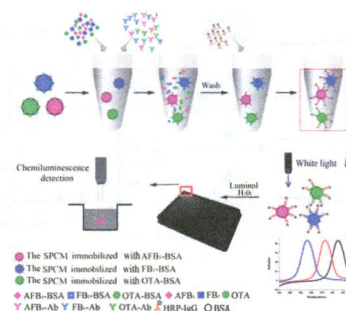


771

Multiplex chemiluminescent immunoassay for screening of mycotoxins using photonic crystal microsphere suspension array

Kun Xu, Yue Sun, Wei Li, Jie Xu, Bin Cao, Yunkun Jiang, Tiesong Zheng, Jianlin Li* and Daodong Pan*

A novel multiplex chemiluminescent mycotoxin immunoassay suspension array system was developed by combining the silica photonic crystal microspheres encoding technique and a chemiluminescent immunoassay method.

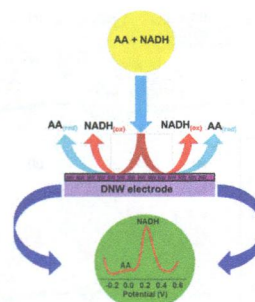


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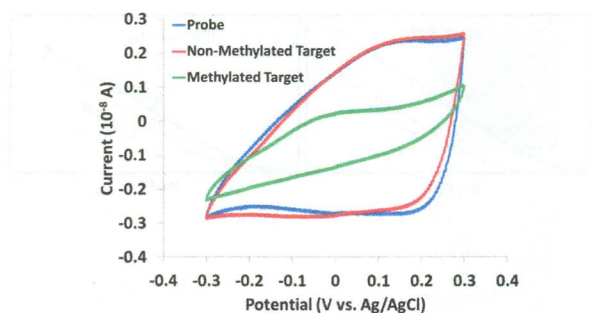
Mediatorless N₂ incorporated diamond nanowire electrode for selective detection of NADH at stable low oxidation potential

Jayakumar Shalini, Kamatchi Jothiramalingam Sankaran, Huang-Chin Chen, Chi-Young Lee,* Nyan-Hwa Tai and I-Nan Lin*

Selective detection of NADH at a stable and low oxidation potential using mediatorless N₂ incorporated diamond nanowire electrode.



786

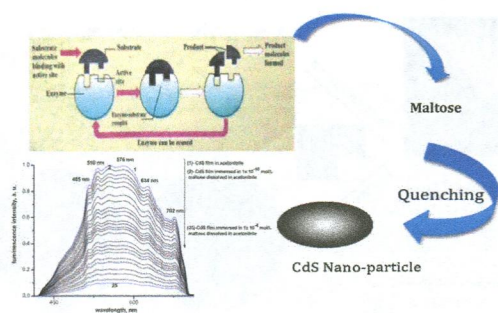


Probing for DNA methylation with a voltammetric DNA detector

Amir Saheb,^{*} Stephanie Patterson and Mira Josowicz

Label-free electrochemical method for the detection of prostate cancer using a DNA biomarker.

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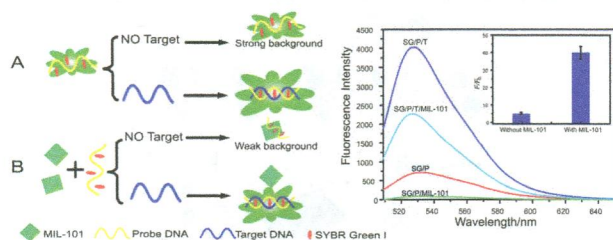


A new nano-optical sensor thin film cadmium sulfide doped in sol-gel matrix for assessment of α -amylase activity in human saliva

M. S. Attia,^{*} H. Zoulghena and M. S. A. Abdel-Mottaleb

A novel, simple, sensitive and precise spectrofluorimetric method is developed for measuring the activity of the α -amylase enzyme in human saliva.

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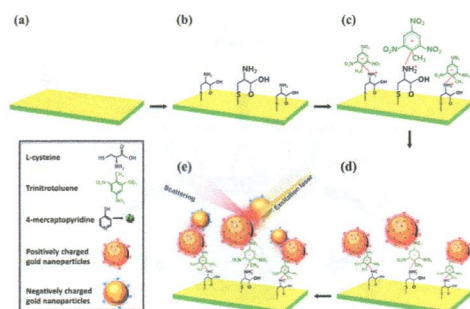


Metal-organic framework MIL-101 as a low background signal platform for label-free DNA detection

Jing Mei Fang, Fei Leng, Xi Juan Zhao,^{*} Xiao Li Hu and Yuan Fang Li^{*}

MIL-101 was employed as a quenching platform to decrease the high background fluorescence of SYBR Green I/probe DNA complex, achieving sensitive detection of DNA.

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Ultrasensitive trace analysis for 2,4,6-trinitrotoluene using nano-dumbbell surface-enhanced Raman scattering hot spots

Zhinan Guo, Joonki Hwang, Bing Zhao, Jin Hyuk Chung, Soo Gyeong Cho, Sung-June Baek and Jaebum Choo^{*}

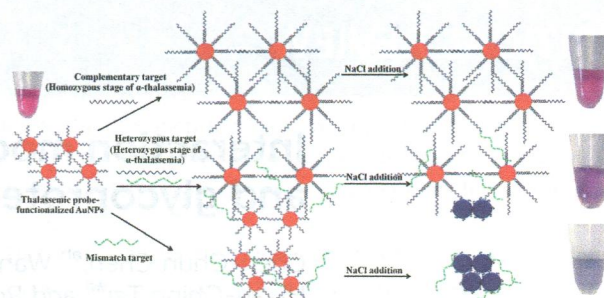
We report an ultra-sensitive surface-enhanced Raman scattering (SERS)-based detection system for 2,4,6-trinitrotoluene (TNT) using nano-dumbbell structures formed by the electrostatic interaction between positively and negatively charged gold nanoparticles.

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Molecular diagnosis of α -thalassemias by the colorimetric nanogold

Sirinart Chomean, Nantawan Wangmaung, Pornpimol Sritongkham, Chamras Promptmas, Sumana Mas-oodi, Dalina Tanyong and Wanida Ittarat*

An experimental strategy is proposed for the colorimetric nanogold SEA-probe to detect abnormal α -globin genes causing α -thalassemia 1 (SEA deletion) in either the homozygous (Hb Bart's hydrops fetalis) or heterozygous state (carrier or trait).

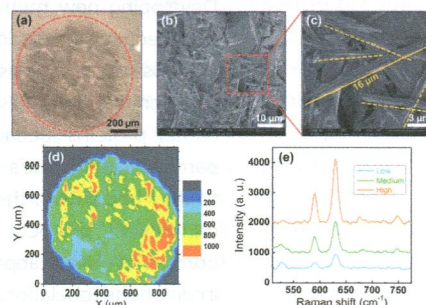


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A customized Raman system for point-of-care detection of arthropathic crystals in the synovial fluid

Bolan Li, Shan Yang and Ozan Akkus*

A rapid, cost-efficient, and automated method for detection of crystals leading to joint arthropathies by Raman spectroscopy.

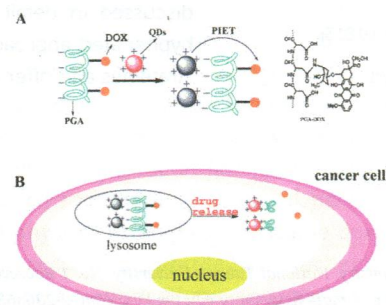


831

CuInS₂ quantum dots/poly(L-glutamic acid)-drug conjugates for drug delivery and cell imaging

Xue Gao, Ziping Liu, Zihan Lin and Xingguang Su*

A new anticancer drug delivery system was developed based on the electrostatic complex of positively charged CuInS₂ quantum dots and negatively charged poly(L-glutamic acid) conjugated with the model anticancer drug doxorubicin.

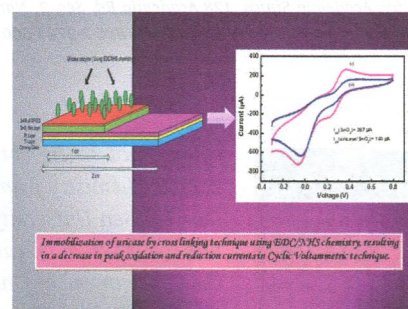


837

Effect of processing parameters for electrocatalytic properties of SnO₂ thin film matrix for uric acid biosensor

Kashima Arora, Monika Tomar and Vinay Gupta*

Immobilization of uricase by cross linking technique using EDC/NHS chemistry, resulting in a decrease in peak oxidation and reduction currents in cyclic voltammetric technique.



Immobilization of uricase by cross linking technique using EDC/NHS chemistry, resulting in a decrease in peak oxidation and reduction currents in cyclic voltammetric technique.