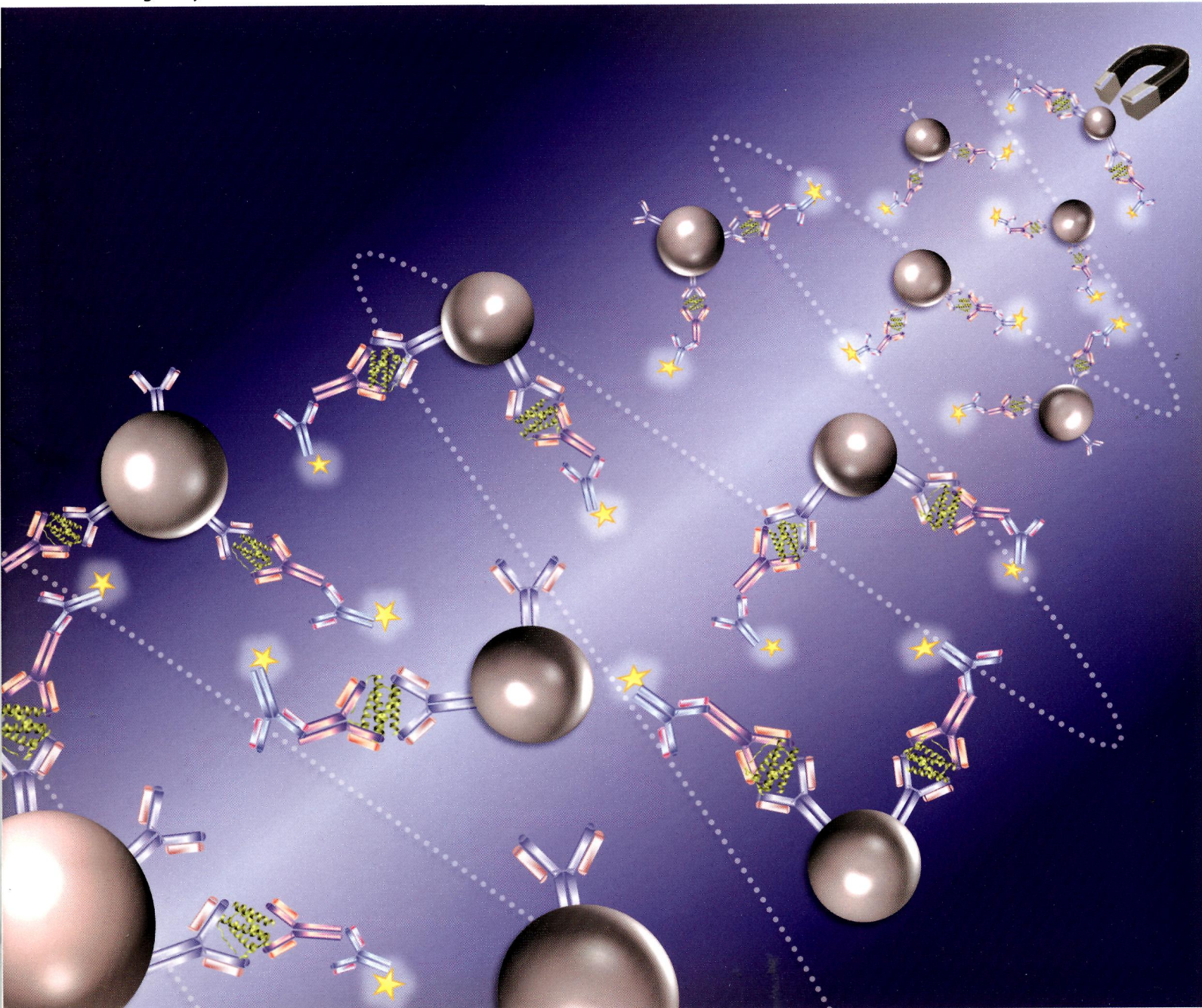


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# Analyst

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Volume 138 | Number 15 | 7 August 2013 | Pages 4205–4412



ISSN 0003-2654

RSC Publishing

**HOT ARTICLE**

Paloma Yáñez-Sedeño *et al.*

A disposable electrochemical immunosensor for the determination of leptin in serum and breast milk

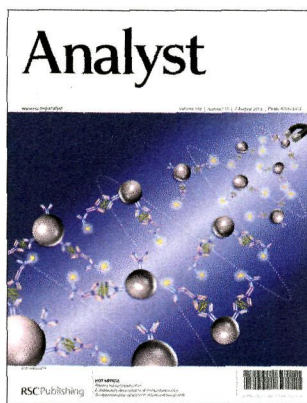


0003-2654 (2013) 138:15;1-W



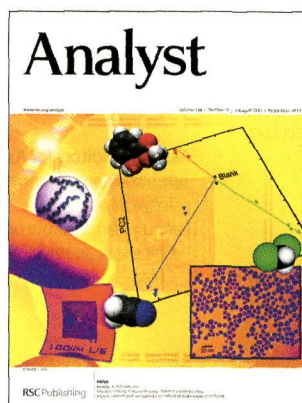
## IN THIS ISSUE

ISSN 0003-2654 CODEN ANALAO 138(15) 4205–4412 (2013)



### Cover

See Paloma Yáñez-Sedeño *et al.*, pp. 4284–4291.  
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### Inside cover

See Radislav A. Potyrailo *et al.*, pp. 4334–4339.  
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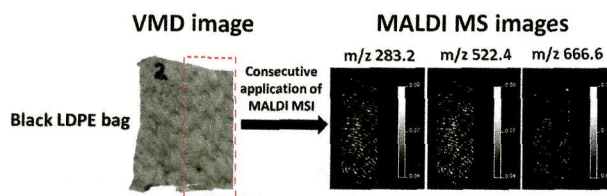
## MINIREVIEW

4215

### Beyond the ridge pattern: multi-informative analysis of latent fingerprints by MALDI mass spectrometry

S. Francese,\* R. Bradshaw, L. S. Ferguson, R. Wolstenholme, M. R. Clench and S. Bleay

MALDI MSI is being developed for integration into the current fingerprint examination workflow.



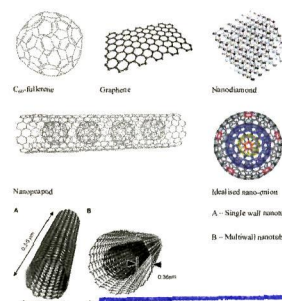
## CRITICAL REVIEW

4229

### Nano-particle modified stationary phases for high-performance liquid chromatography

Ekaterina P. Nesterenko, Pavel N. Nesterenko, Damian Connolly, Xiaoyun He, Patrick Floris, Emer Duffy and Brett Paull\*

This review covers the latest developments and applications of nano-materials in stationary phase development for various modes of high-performance liquid chromatography.



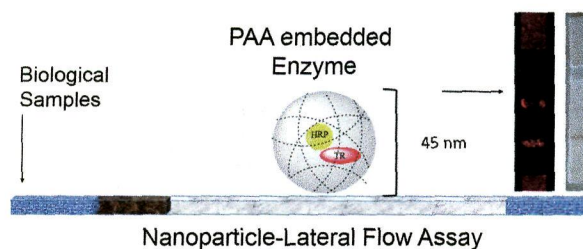
Федеральное государственное  
бюджетное учреждение науки  
Центральная научная библиотека  
Уральского отделения  
Российской академии наук (ЦНБ УрО РАН)

4255

### Nanoparticle embedded enzymes for improved lateral flow sensors

Veli C. Özalp,\* Uğur S. Zeydanlı, Anita Lunding, Murat Kavruk, M. Tufan Öz, Füsün Eyidoğan, Lars F. Olsen and Hüseyin A. Öktem

Nanoparticle embedding protects enzyme activity in lateral flow assays for biological samples. We show a proof-of-concept by measuring ROS.

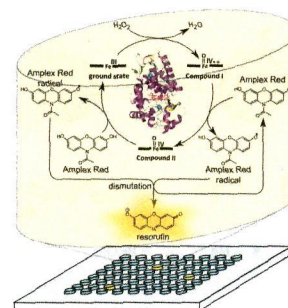


4260

### Single molecule kinetics of horseradish peroxidase exposed in large arrays of femtoliter-sized fused silica chambers

Benno N. Ehrl, Raphaela B. Liebherr and Hans H. Gorris\*

Large arrays of femtoliter-sized chambers were etched into the surface of fused silica slides to enclose and observe hundreds of single horseradish peroxidase (HRP) molecules in parallel.

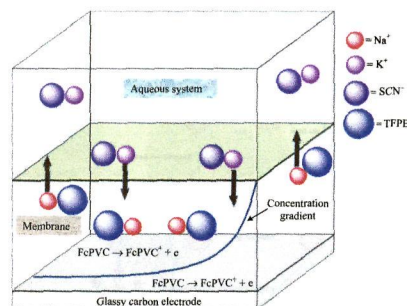


4266

### Transport and accumulation of ferrocene tagged poly(vinyl chloride) at the buried interfaces of plasticized membrane electrodes

Manzar Sohail, Roland De Marco,\* Muhammad Tanzirul Alam, Marcin Pawlak and Eric Bakker

Schematic showing the diffusion-controlled electrochemical reactivity of FcPVC within the membrane phase of the plasticized polymer.

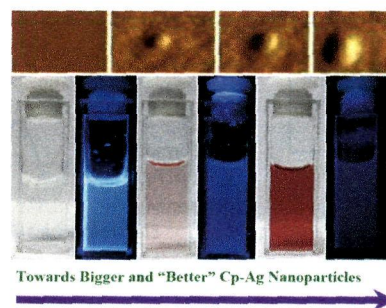


4270

### Investigating the evolution of drug mediated silver nanoparticles

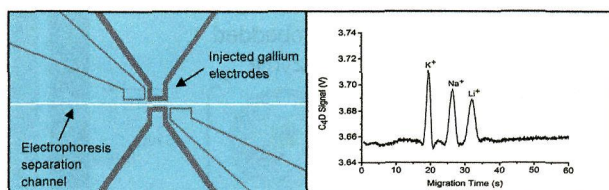
Subhadip Ghosh, Uttam Anand and Saptarshi Mukherjee\*

Ciprofloxacin mediated synthesis of silver nanoparticles having luminescent properties that can be used for drug delivery and release.





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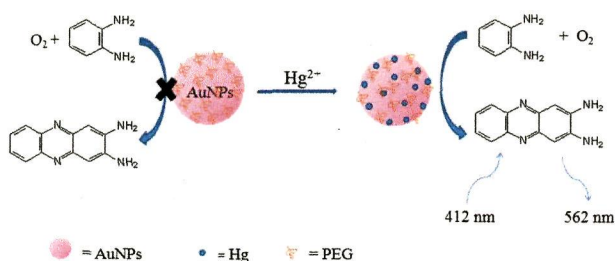


### On-chip capacitively coupled contactless conductivity detection using "injected" metal electrodes

Leigh D. Thredgold, Dmitriy A. Khodakov, Amanda V. Ellis and Claire E. Lenehan\*

We demonstrate the use of injected gallium electrodes for capacitively coupled contactless conductivity detection (C<sup>4</sup>D) within a microchip electrophoresis device.

4280



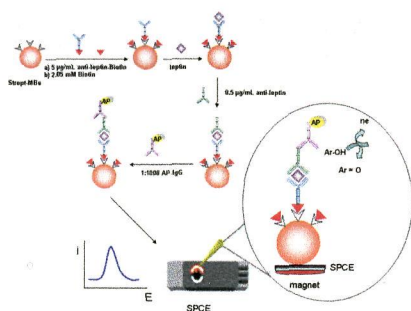
### Fluorescent sensing of mercury(II) based on formation of catalytic gold nanoparticles

Lixia Yan, Zhaopeng Chen,\* Zhiyang Zhang, Chengli Qu, Lingxin Chen and Dazhong Shen\*

The deposition of Hg on AuNPs formed catalytic nanoparticles that provide a way for sensing of Hg<sup>2+</sup> sensitively and simply.

## PAPERS

4284

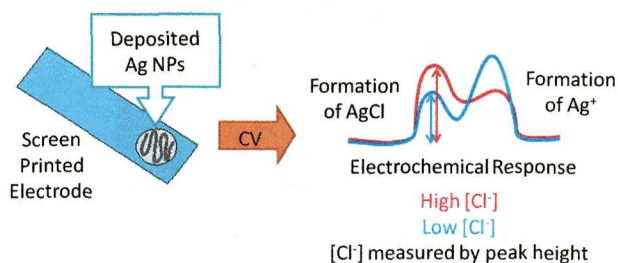


### A disposable electrochemical immunosensor for the determination of leptin in serum and breast milk

Irene Ojeda, María Moreno-Guzmán, Araceli González-Cortés, Paloma Yáñez-Sedeño\* and José M. Pingarrón

The preparation of a disposable electrochemical immunosensor for the quantification of the hormone leptin is described in this work.

4292



### Electrochemical detection of chloride levels in sweat using silver nanoparticles: a basis for the preliminary screening for cystic fibrosis

Her Shuang Toh, Christopher Batchelor-McAuley, Kristina Tschulik and Richard G. Compton\*

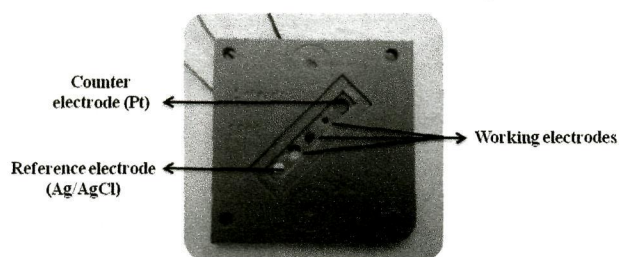
Detection of chloride ion concentration in synthetic sweat samples with silver nanoparticle modified electrodes provides a proof-of-concept for a point-of-care system for preliminary screening of cystic fibrosis.

4298

### A novel LTCC electrochemical cell construction and characterization: a detection compartment for portable devices

Naira Canevarolo Pesquero,\* Mário Ricardo Gongora-Rubio and Hideko Yamanaka

A novel and promising electrochemical detection cell constructed from LTCC material and carbon screen-printed electrode attractive for the development of portable diagnosis devices.

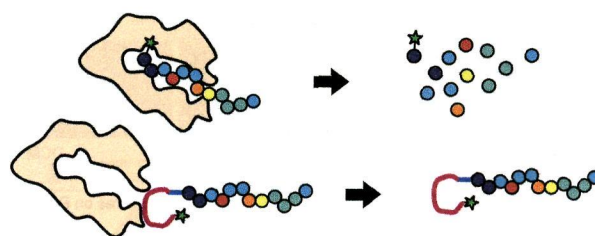


4305

### $\beta$ -Turn sequences promote stability of peptide substrates for kinases within the cytosolic environment

Shan Yang, Angela Proctor, Lauren L. Cline, Kaiulani M. Houston, Marcey L. Waters and Nancy L. Allbritton\*

Native peptides are hydrolyzed by peptidases into individual amino acids while peptides possessing a  $\beta$ -turn structure appended to the N-terminus are protected.

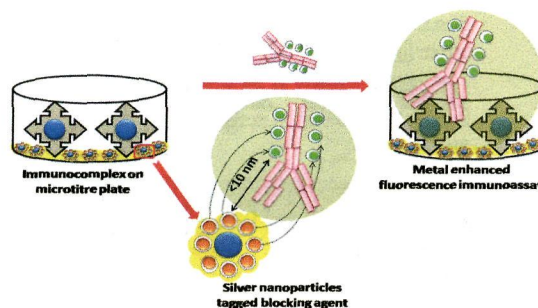


4312

### Plasmon enhanced fluoro-immunoassay using egg yolk antibodies for ultra-sensitive detection of herbicide diuron

Priyanka Sharma, Manil Kukkar, Ashok K. Ganguli, Aman Bhasin and C. Raman Suri\*

Plasmon enhanced fluoro-immunoassay using specific egg yolk antibodies for ultra-sensitive detection of herbicide diuron.

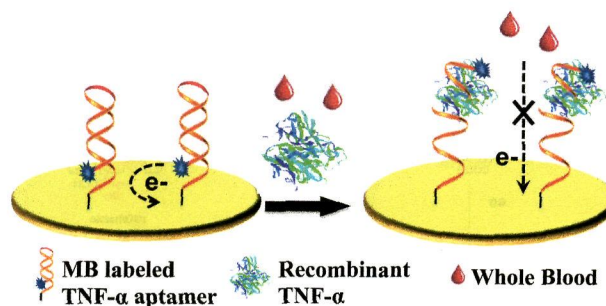


4321

### An aptasensor for electrochemical detection of tumor necrosis factor in human blood

Ying Liu,\* Qing Zhou and Alexander Revzin\*

This manuscript describes the use of aptamer-modified electrodes in detecting tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) secretion from whole blood. TNF- $\alpha$  production is monitored by detecting changes in the electrical properties of a redox-labeled aptamer.



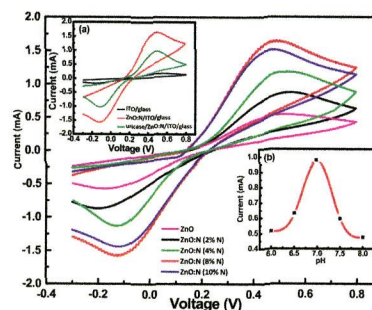


4353

### Nitrogen-doped zinc oxide thin films biosensor for determination of uric acid

Kajal Jindal, Monika Tomar and Vinay Gupta\*

Nitrogen-doped ZnO (ZnO:N) thin film offers an efficient platform for the development of a uric acid biosensor with enhanced response in comparison to that of the undoped ZnO thin film.

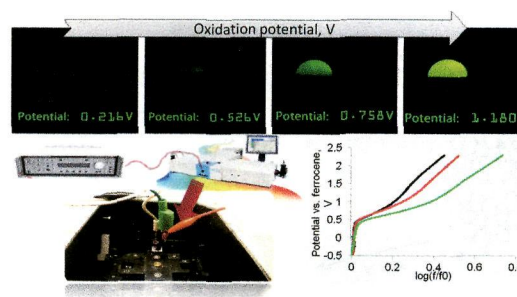


4363

### Sensitivity of activatable reactive oxygen species probes by fluorescence spectroelectrochemistry

Steven T. Wang, Natalia G. Zhegalova, Tiffany P. Gustafson, Andrew Zhou, Joel Sher, Samuel Achilefu, Oleg Y. Berezin and Mikhail Y. Berezin\*

Integrated fluorescence overpotential spectroscopy (iFOS) measures the sensitivity of ROS probes.

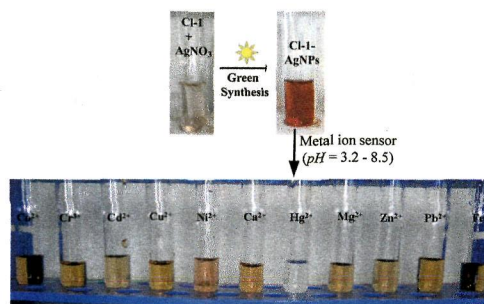


4370

### Green synthesized silver nanoparticles for selective colorimetric sensing of $\text{Hg}^{2+}$ in aqueous solution at wide pH range

Selvan Sukanya Ravi, Lawrence Rene Christena, Nagarajan SaiSubramanian and Savarimuthu Philip Anthony\*

Citrus fruit extracts in the presence of sunlight produced silver nanoparticles (AgNPs) in a quick reaction time. These green synthesized AgNPs exhibited selective sensing of potentially hazardous  $\text{Hg}^{2+}$  in an aqueous solution in a wide pH range.

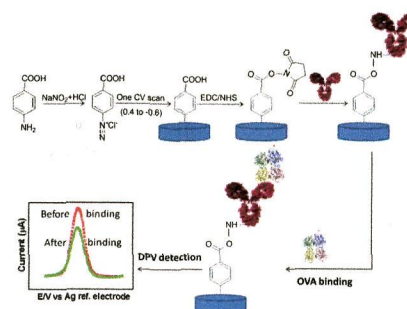


4378

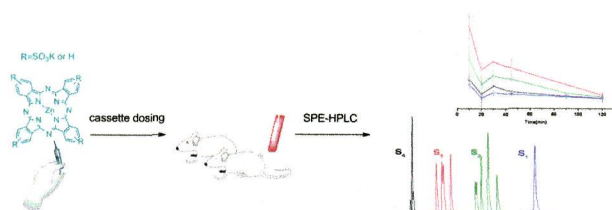
### A graphene-based label-free voltammetric immunosensor for sensitive detection of the egg allergen ovalbumin

Shimaa Eissa, Lamia L'Hocine, Mohamed Siaj and Mohammed Zourob\*

A graphene-based label-free voltammetric immunosensor for the sensitive detection of the egg white allergen ovalbumin has been developed.



4385

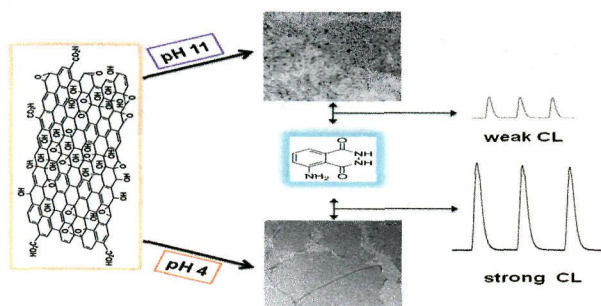


### A novel SPE-HPLC method for simultaneous determination of selected sulfonated phthalocyanine zinc complexes in mouse plasma following cassette dosing

Zhou Jiang, Jingwei Shao, Meili Chen, Jian Wang and Lee Jia\*

Sulfonated phthalocyanine zinc complexes ( $\text{ZnPcS}_n$ ) are a mixture of polymolecules with different number of the sulfonic groups.

4393

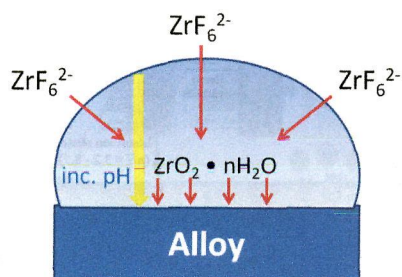


### A new luminol chemiluminescence sensor for glucose based on pH-dependent graphene oxide

Minjia Hao, Na Liu and Zhanfang Ma\*

Graphene oxide (GO) was found to catalyze the luminol- $\text{O}_2$  reaction, which yielded a novel chemiluminescence (CL). Remarkably, the CL emission can be tuned by modulating the pH of the GO dispersion and was developed to detect glucose.

4398

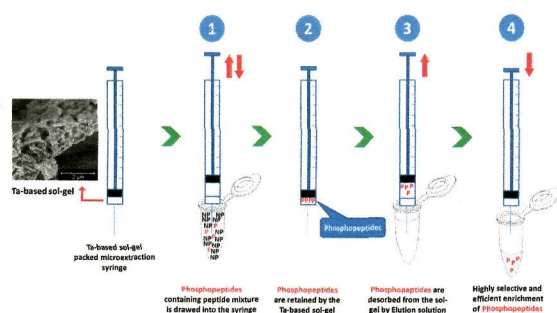


### *In situ* pH measurement during the formation of conversion coatings on an aluminum alloy (AA2024)

Liangliang Li, Annika Laura Desouza and Greg M. Swain\*

The measurement of interfacial pH change is important for understanding the formation mechanism of conversion coatings that are used to protect metals from corrosion.

4403



### A novel tantalum-based sol-gel packed microextraction syringe for highly specific enrichment of phosphopeptides in MALDI-MS applications

Ömür Çelikbıçak, Mehmet Atakay, Ülkü Güler and Bekir Salih\*

A highly selective and efficient phosphopeptide enrichment method was developed using a tantalum-based sol-gel packed microextraction syringe for MALDI-MS applications.