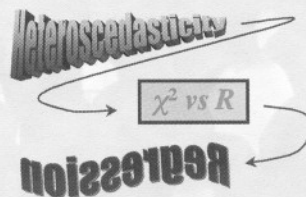


1649

### Univariate calibration by reversed regression of heteroscedastic data: a case study

Qiaoling Charlene Zeng, Elizabeth Zhang and Joel Tellinghuisen

In a case study of calibration with heteroscedastic HPLC data, consideration of the  $\chi^2$  statistic forces the conclusion that the least-squares regression should be reversed.



## PAPERS

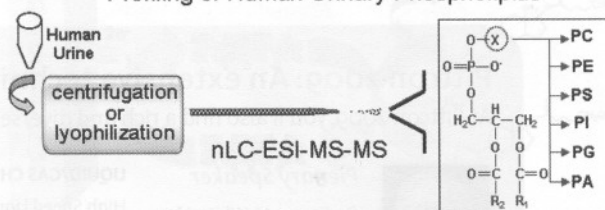
1656

### Profiling of human urinary phospholipids by nanoflow liquid chromatography/tandem mass spectrometry

Hanna Kim, Eunjeong Ahn and Myeong Hee Moon\*

Shotgun profiling of human urinary phospholipids is introduced by utilizing nanoflow LC-ESI-MS-MS and the efficiency of lipid extraction (ultracentrifugation vs. lyophilization) from 1 mL of urine sample is discussed.

#### Profiling of Human Urinary Phospholipids

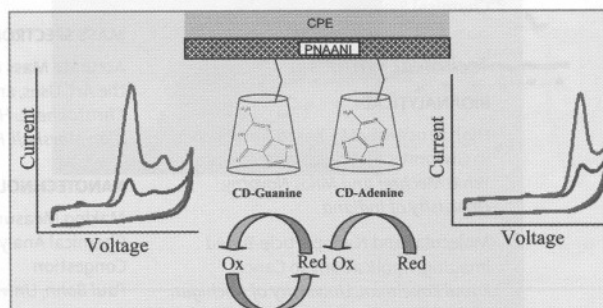


1664

### Electrochemical studies on the oxidation of guanine and adenine at cyclodextrin modified electrodes

Abdolkarim Abbaspour\* and Abolhassan Noori

Mechanistic information on the oxidation of guanine and adenine at a cyclodextrin modified carbon paste electrode, and a new method for their determination is illustrated in this study.



1673

### Imprinted polymers for chiral resolution of (±)-ephedrine. Part 2: probing pre-polymerisation equilibria in different solvents by NMR

Richard J. Ansell,\* Dongyao Wang and Janice K. L. Kuah

NMR titrations and data fitting have been used to determine multiple association equilibria in the pre-polymerisation stage of molecular imprinting, confirming the strength of the 1 : 1 ephedrine-methacrylic acid interaction in different solvents and the utility of binding sites formed from the 1 : 1 complex.

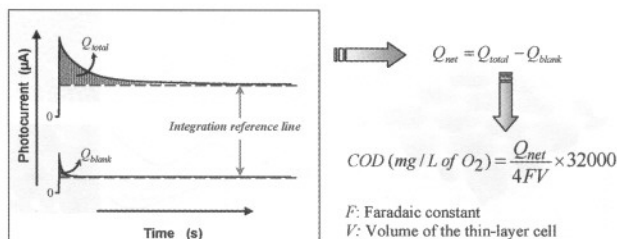


1684

### A new approach prevailing over chloride interference in the photoelectrochemical determination of chemical oxygen demand

Shanqing Zhang and Huijun Zhao\*

A new approach to overcome chloride interferences in the photoelectrochemical determination of chemical oxygen demand (PeCOD™) was proposed and validated. The proposed approach greatly extends the applicability of the PeCOD™ method, covering a wide range of possible real-world scenarios.

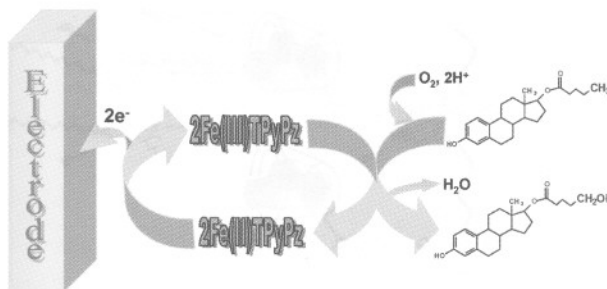


1692

### Electrochemical sensor highly selective for estradiol valerate determination based on a modified carbon paste with iron tetrapyrroline

Isabelle V. Batista, Marcos R. V. Lanza, Iara L. T. Dias, Sônia M. C. N. Tanaka, Auro A. Tanaka and Maria D. P. T. Sotomayor\*

This work describes the construction of a highly selective, sensitive and robust sensor for the determination of estradiol valerate hormone as a real alternative to the official method of analysis.

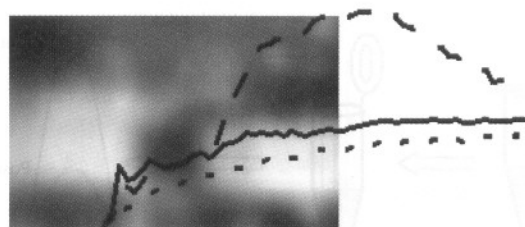


1700

### Visualization of local electrochemical activity and local nickel ion release on laser-welded NiTi/steel joints using combined alternating current mode and stripping mode SECM

D. Rühlig, H. Gugel, A. Schulte, W. Theisen and W. Schuhmann\*

Scanning electrochemical (SECM)-based local conductivity and  $\text{Ni}^{2+}$  release measurements on laser-welded NiTi/stainless steel joints identified weld regions as better protected by passivation than the neighboring parental wires.

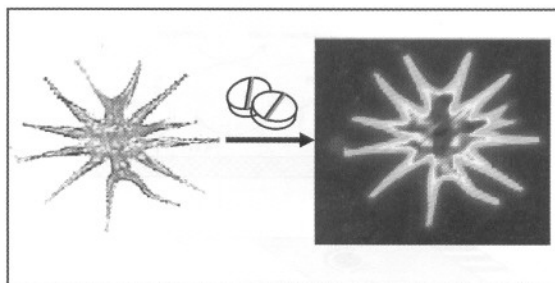


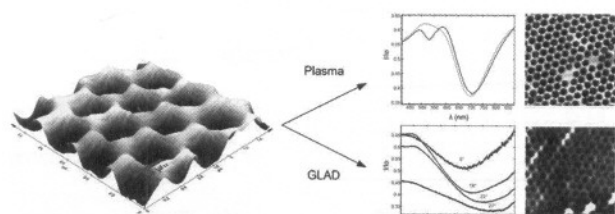
1707

### Spatial metabolic fingerprinting using FT-IR spectroscopy: investigating abiotic stresses on *Micrasterias hardyi*

Soyab A. Patel, Felicity Currie, Nalin Thakker and Royston Goodacre\*

Spatial metabolic fingerprinting, using infrared microspectroscopy with appropriate chemometrics, was used to investigate abiotic stresses on single algal cells following exposure to active pharmaceutical ingredients.

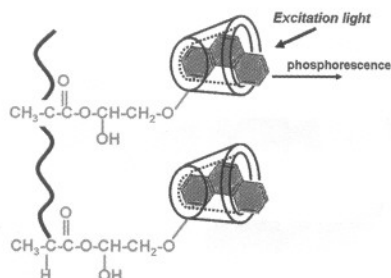




Marie-Pier Murray-Methot, Nicola Menegazzo and Jean-Francois Masson\*

This work describes the analytical and physical properties of nanohole arrays prepared with glancing angle deposition (GLAD) or plasma treatment of a nanosphere lithography (NSL) mask prior to the deposition of a thin Au film.

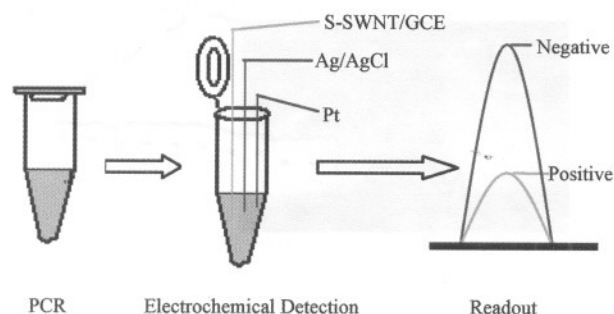
1722



Zhu Ruohua\* and Xu Wenting

A  $\beta$ -CD modified organic polymeric monolithic disk has been synthesized. The material shows the low background, high selectivity and extraction ability as the solid substrate and solid extraction membrane for SPE-RTP.

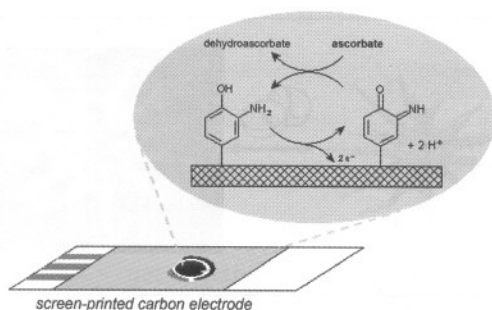
1729



Xuzhi Zhang, Shufeng Liu, Kui Jiao,\* Hongwei Gao  
and Yanjing Shi

The electrochemical response of dGTP in the post-PCR sample was employed to estimate whether the sequence-specific DNA was present or not in the DNA template.

1736



Hossam M. Nassef, Laia Civit, Alex Fragoso\* and Ciara K. O'Sullivan\*

The use of commercial, disposable screen-printed electrodes functionalised *via* the reduction of an aminophenol diazonium salt, for the selective oxidation of ascorbic acid is reported. The dynamic linear range is 2–20  $\mu\text{M}$ , and a limit of detection of 0.86  $\mu\text{M}$  was obtained with an excellent reproducibility ( $\text{RSD}\% = 1.98$ ,  $n = 8$ ).

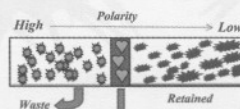
1742

### Highly selective and sensitive assay for paclitaxel accumulation by tumor cells based on selective solid phase extraction and micro-flow liquid chromatography coupled to mass spectrometry

Julio R. Gaspar, Jun Qu, Ninfa L. Straubinger and Robert M. Straubinger\*

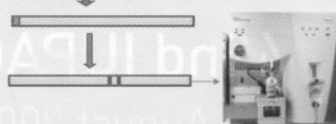
High sensitivity and excellent reproducibility has been achieved for quantifying low concentrations of paclitaxel in cell culture medium and cell extracts.

1. Selective SPE extraction:
  - Polar components: washed out
  - Target taxanes: selectively extracted
  - Non-polar components: not eluted



2. Large sample volume focused on a capillary column

3. Ultra-sensitive capillary LC/MS/MS quantification

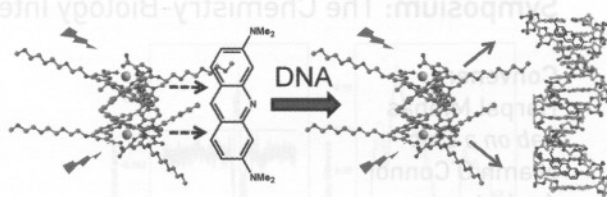


1749

### A versatile method for quantification of DNA and PCR products based on time-resolved $\text{Eu}^{III}$ luminescence

Bo Song, Caroline D. B. Vandevyver,\* Emmanuel Deiters, Anne-Sophie Chauvin, Ilkka Hemmilä and Jean-Claude G. Bünzli

In the presence of DNA, the luminescence of  $\text{Eu}^{III}$  complexes quenched by acridine orange is restored, giving rise to a versatile and robust method for the determination of DNA and PCR products.

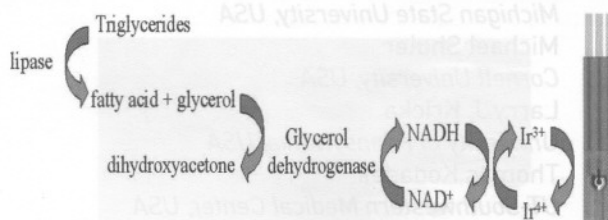


1757

### Detection of triglyceride using an iridium nano-particle catalyst based amperometric biosensor

Wei-Yin Liao, Chung-Chiun Liu\* and Tse-Chuan Chou

An iridium nano-particle modified carbon based-biosensor which provides a simple means for triglyceride (TG) measurements in serum by the electrochemical detection/quantification of NADH, produced by the enzymatic degradation of TG, has been fabricated.

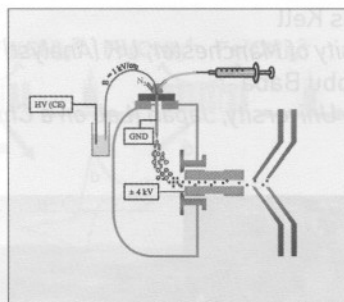


1764

### Fast capillary electrophoresis coupled with time-of-flight mass spectrometry under separation conditions of high electrical field strengths

Frank-Michael Matysik,\* Christian Neusüß and Matthias Pelzing

Very fast capillary electrophoretic separations in conjunction with time-of-flight mass spectrometry are achieved by using a short separation capillary and field strengths exceeding  $1 \text{ kV cm}^{-1}$  which resulted in migration times on the timescale of seconds.

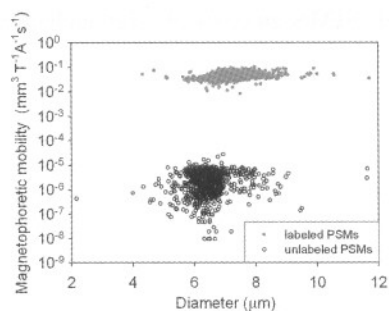


1767

### Differences in magnetically induced motion of diamagnetic, paramagnetic, and superparamagnetic microparticles detected by cell tracking velocimetry

Xiaoxia Jin, Yang Zhao, Aaron Richardson, Lee Moore, P. Stephen Williams, Maciej Zborowski\* and Jeffrey J. Chalmers\*

Motions of diamagnetic, paramagnetic, and superparamagnetic microparticles at varying magnetic fields are measured and discussed. The sensitivity of the cell tracking velocimetry analysis to changes in the particle motion caused by labeling is demonstrated.

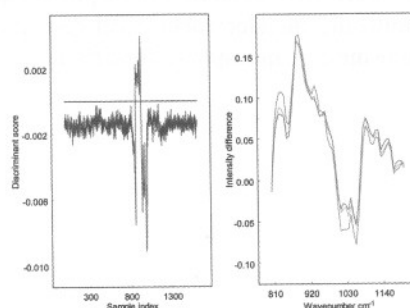


1776

### Airborne passive Fourier transform infrared remote sensing of methanol vapor from industrial emissions

Boyong Wan and Gary W. Small\*

Airborne passive Fourier transform infrared remote sensing measurements of industrial emissions are used to develop and evaluate automated methods for detecting the signatures of volatile organic compounds.



1785

### Determination of the neurotoxin BMAA (β-N-methylamino-L-alanine) in cycad seed and cyanobacteria by LC-MS/MS (liquid chromatography tandem mass spectrometry)

Johan Rosén\* and Karl-Erik Hellenäs

Are cyanobacteria linked to neurodegenerative diseases such as Alzheimer's? Previous reports, that cyanobacteria produce large amounts of the neurotoxic amino acid BMAA, are questioned by Swedish researchers.

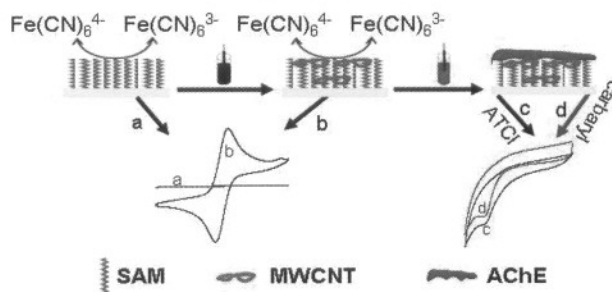


1790

### Immobilization of acetylcholinesterase based on the controllable adsorption of carbon nanotubes onto an alkanethiol monolayer for carbaryl sensing

Dan Du,\* Minghui Wang, Jie Cai, Yuan Tao, Haiyang Tu and Aidong Zhang

The multiwalled carbon nanotube adsorbed onto an alkanethiol self-assembled monolayer surface restores heterogeneous electron transfer between bare electrode and redox system in solution phase.



1796

**Imaging TOF-SIMS analysis of oligonucleotide microarrays**

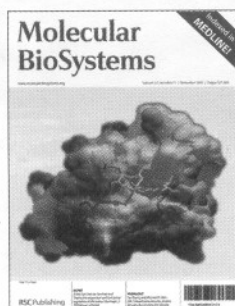
Larisa-Emilia Cheran, Dajana Vuckovic and Michael Thompson

1796

**Rapid and cost-effective detection of sequence-specific DNA by monitoring the electrochemical response of 2'-deoxyguanosine 5'-triphosphate in a PCR sample**

Xuzhi Zhang, Shufeng Liu, Kui Jiao, Hongwei Gao and Yanjing Shi

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