

IN THIS ISSUE...

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In this issue...

Chemical Science—a 'snapshot' of the latest news and developments across the chemical sciences
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Cover

Illustration is a close-up of the plasma discharge in a plasma ball.

CHEMICAL SCIENCE

C9

Chemical Science is a 'snapshot' of the latest news and developments across the chemical sciences.

Chemical Science

February 2005/Volume 2/Issue 2

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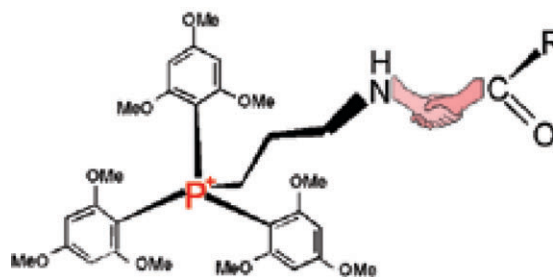
ARTICLES

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Detection of phosphorus tagged carboxylic acids using HPLC-SF-ICP-MS

Andrew J. Cartwright, Phil Jones, Jean-Claude Wolff and E. Hywel Evans*

The phosphorus-containing reagent tris(2,4,6-trimethoxyphenyl)phosphonium propylamine (TMPP) is used to tag carboxylic acids, making them detectable by LC-ICP-MS. This opens up the possibility of detecting a wide range of organic compounds using functionalised tagging reagents.

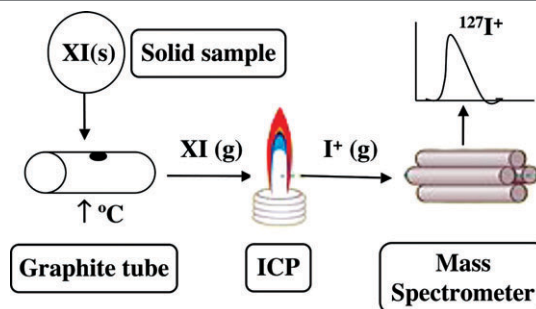


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Solid sampling-electrothermal vaporization-inductively coupled plasma mass spectrometry for the direct determination of traces of iodine

M. Resano,* E. Garcia-Ruiz, L. Moens and F. Vanhaecke

This paper shows the potential of ETV-ICP-MS for the direct and reliable determination of iodine at ppm and sub-ppm levels in solid samples using straightforward calibration with aqueous standards.



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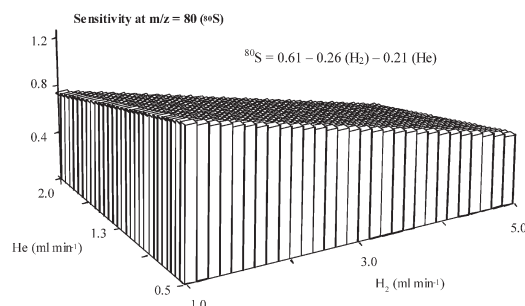
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Operational optimisation of ICP—octopole collision/reaction cell—MS for applications to ultratrace selenium total and speciation determination

Jérôme Darrouzès,* Maïté Bueno, Gaëtane Lespès and Martine Potin-Gautier

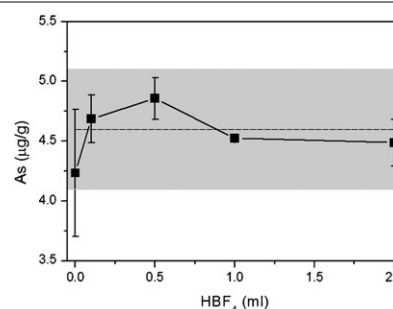
This paper describes the optimisation of inductively coupled plasma-mass spectrometry (ICPMS) equipped with collision/reaction cell (C/RC) technology for selenium analysis at ultratrace level.



Improved determination of arsenic in environmental and geological specimens using HG-AFS

Bin Chen, Michael Krachler,* Zayre I. Gonzalez and William Shotyk

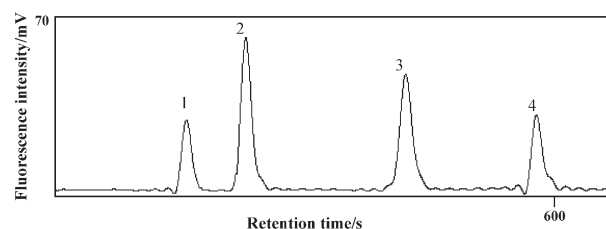
A sensitive (LOD 6 ng l⁻¹) and robust analytical procedure allows the direct determination of As in plant, coal and sediment samples in acid digests using HG-AFS.



Evaluation of the extraction methods for arsenic speciation in rice straw, *Oryza sativa* L., and analysis by HPLC-HG-AFS

Chun-gang Yuan, Gui-bin Jiang* and Bin He

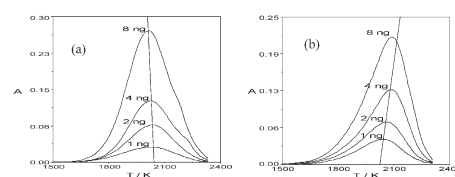
A new and simple extraction method with a water–ethanol mixture using microwave-assisted extraction extracts arsenic species from the terrestrial plant material, rice straw, effectively without internal species conversion.



Investigation of the mechanism of the electrothermal atomization of platinum in a graphite furnace from aqueous solutions and serum samples

Paraskevi S. Eleni, Nikolaos S. Thomaidis and Efrosini A. Piperaki*

The platinum atomization in graphite furnaces in the presence and in the absence of serum matrix is investigated for the first time, using the kinetic methods of Rojas-Olivares and Yan, as well as the physical approach of L'vov.



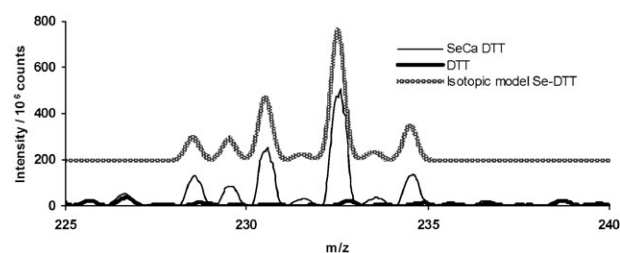
TECHNICAL NOTES



Influence of reducing agents on the integrity of selenocompounds. Exploratory work for selenoproteome analysis

Cyrille C. Chéry, Emmie Dumont, Luc Moens, Frank Vanhaecke* and Rita Cornelis

Gel electrophoresis is one promising way to speciate selenium in proteins. Reducing agents used in combination with gel electrophoresis can jeopardize speciation through species conversion. Thus, their choice is of crucial importance; tributylphosphine was shown to be very promising.



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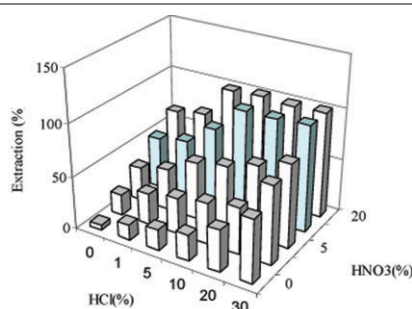
The choice of absorbing lines in flame atomic absorption spectrometry—a new look at an old topic

Part 2. Ni

J. B. Willis* and B. T. Sturman*

Spectral scans of the Ni 232.0 nm, 341.5 nm and 352.45 nm lines help to explain why the 232.0 nm line has no advantage over the less sensitive 341.5 nm and 352.45 nm lines.

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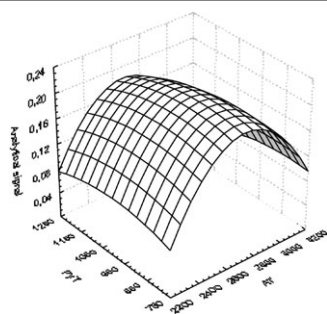


Ultrasonic probe extraction of tin from botanical and biological reference materials and determination using end capped electrothermal atomic absorption spectrometry (EC-ETAAS) with zirconium–iridium permanent modifier

Sunil Jai Kumar,* M. A. Reddy and N. N. Meeravali

An ultrasonic probe extraction procedure is described for the determination of total Sn. The use of a Zr–Ir coated end capped tube improves the sensitivity and reduces the interferences due to the high concentration of acids and other interferents.

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Application of multivariate technique in method development for the direct determination of copper in petroleum condensate using graphite furnace atomic absorption spectrometry

W. N. L. dos Santos, F. de S. Dias, M. S. Fernandes, M. V. Rebouças, M. G. R. Vale, B. Welz and S. L. C. Ferreira*

ATOMIC SPECTROMETRY UPDATE

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Atomic spectrometry update. Environmental analysis

Owen T. Butler, Jennifer M. Cook, Chris F. Harrington, Steve J. Hill, John Rieuwerts and Douglas L. Miles

The Update reviews developments in the field of spectroscopic environmental analysis over the period mid-2003–mid-2004.

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* Indicates the author for correspondence: see article for details.

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