

## IN THIS ISSUE

ISSN 0267-9477 CODEN JASPE2 39(1) 1–294 (2024)



## Cover

See Gui-Qin Wang *et al.*, pp. 86–98. Image reproduced by permission of Gui-Qin Wang from *J. Anal. At. Spectrom.*, 2024, **39**, 86.



## Inside cover

See Ye Tian *et al.*, pp. 99–108. Image reproduced by permission of Ye Tian from *J. Anal. At. Spectrom.*, 2024, **39**, 99.

## ATOMIC SPECTROMETRY UPDATES

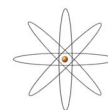
11

## Atomic spectrometry update – a review of advances in environmental analysis

Jeffrey R. Bacon,\* Owen T. Butler, Warren R. L. Cairns, Olga Cavoura, Jennifer M. Cook, Christine M. Davidson and Regina Mertz-Kraus



Atomic Spectrometry Updates

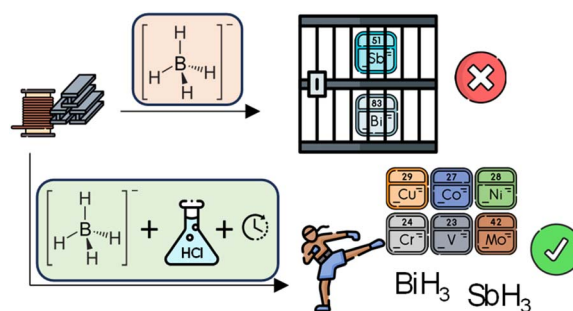


## COMMUNICATIONS

66

## Managing transition metal interferences during chemical vapor generation using the hydrolysis products of tetrahydridoborate: a proof-of-concept study

Michelle Buoso, Beatrice Campanella,\* Massimo Onor, Emanuela Pitzalis and Alessandro D'Ulivo



# Advance your career in science

with professional recognition that showcases  
your **experience, expertise and dedication**

## Stand out from the crowd

Prove your commitment  
to attaining excellence in  
your field

## Gain the recognition you deserve

Achieve a professional  
qualification that inspires  
confidence and trust

## Unlock your career potential

Apply for our professional  
registers (RSci, RSciTech)  
or chartered status  
(CChem, CSci, CEnv)

## Apply now

[rsc.li/professional-development](https://rsc.li/professional-development)

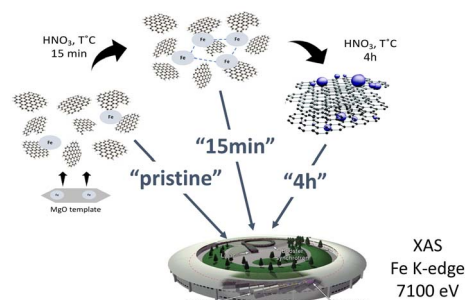


## COMMUNICATIONS

71

### Stability of iron single atoms in graphene structures from X-ray absorption spectroscopy data

Anna Krot, Serguei Savilov, Ekatherina Arkhipova and Stepan Kalmykov\*

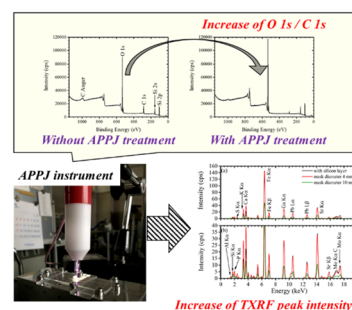


## TECHNICAL NOTE

76

### Evaluations of the optimal plasma treated area in total reflection X-ray fluorescence analysis and the retention period of superhydrophilic ability of the substrate

Tsugufumi Matsuyama,\* Yudai Tanaka, Naoya Taniguchi, Jun-Seok Oh and Kouichi Tsuji

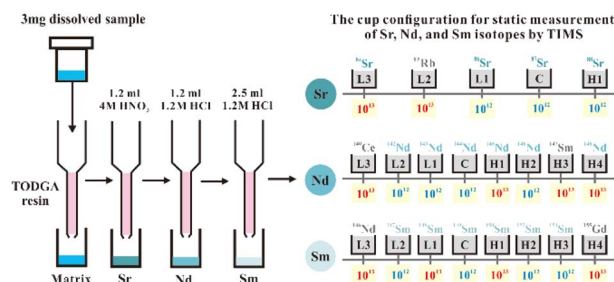


## PAPERS

86

### A single-column separation procedure for Sr, Nd, and Sm in small-size samples and high-precision isotope measurements using a TIMS with $10^{13}$ and $10^{12}$ $\Omega$ amplifiers

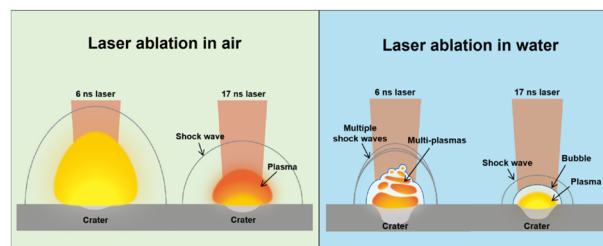
Yu-Ming Xu, Gui-Qin Wang,\* Zhen Yang, Yu-Ling Zeng and Feng Guo



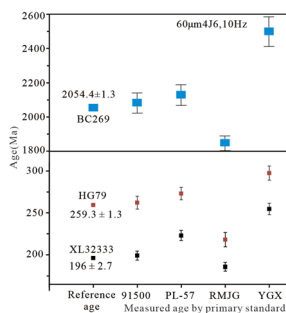
99

### Characteristics of laser-induced plasma generated in water and in air with different nanosecond laser pulse durations

Canxu Zhai, Ye Tian,\* Longshang Wang, Ziwen Jia, Ying Li, Yuan Lu, Jinjia Guo, Wangquan Ye and Ronger Zheng



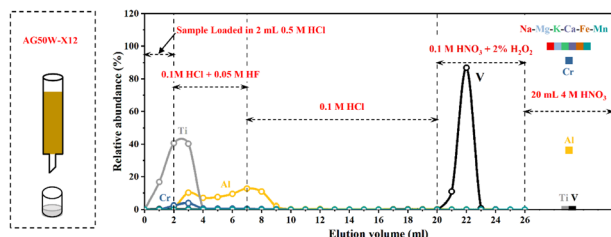
109



## A new appraisal of ilmenite U–Pb dating method by LA-SF-ICP-MS

Yanwen Tang, Tingguang Lan, Jianfeng Gao, Zhongjie Bai,\* Xiaowen Huang,\* Junjie Han and Na Liu

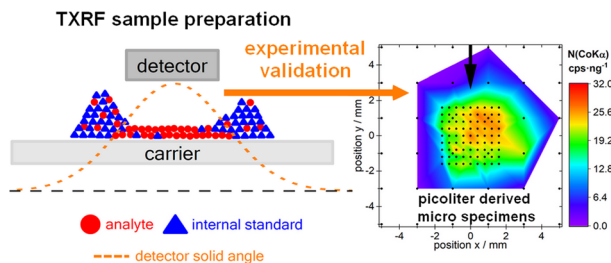
121



## Rapid determination of V isotopes with MC-ICP-MS: new developments in sample purification

Zhen Zeng and Fei Wu\*

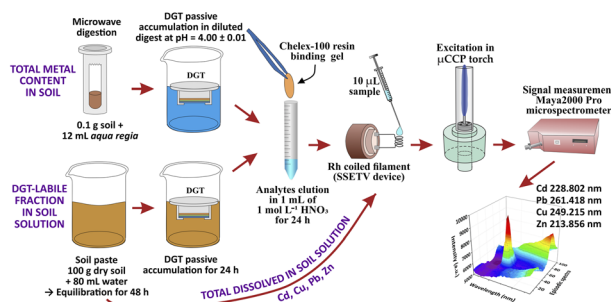
131



## Empirical evaluation of the TXRF detector field of view – a coffee-ring case study

Sven Hampel, Franziska Sand, Heiko Sebastian Till and Ursula Elisabeth Adriane Fittschen\*

141



## Simultaneous determination of Cd, Pb, Cu and Zn as total and labile fractions in soil using a small-sized electrothermal vaporization capacitively coupled plasma microtorch optical emission spectrometer after diffusive gradients in thin-film passive accumulation

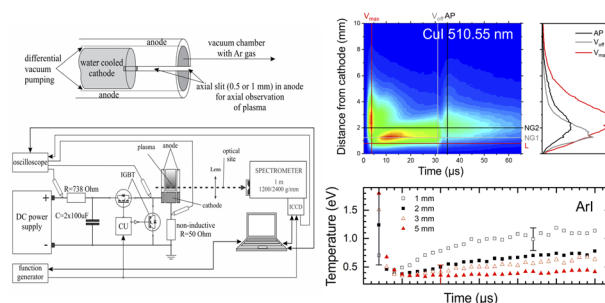
Simion Bogdan Angyus, Marin Senila, Eniko Covaci, Michaela Ponta, Maria Frentiu and Tiberiu Frentiu\*



153

## Spatio-temporal dynamics of a microsecond pulsed Grimm-type glow discharge

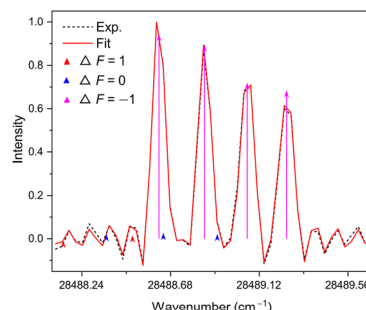
Ivan B. Krstić,\* Bratislav M. Obradović  
and Milorad M. Kuraica



169

## Hyperfine structure measurements for neutral and singly ionized terbium by Fourier-transform spectroscopy

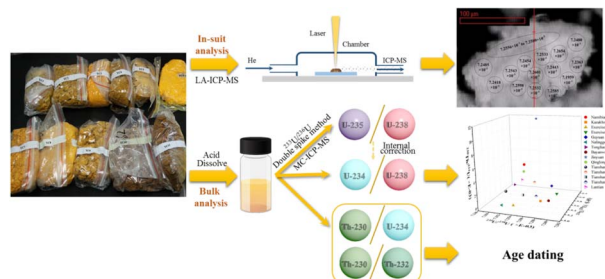
Yu Wang, Huiting Ma, Meina Liu, Xintong Li, Jia Wei  
and Zhenwen Dai\*



178

## Precise and accurate isotopic analysis of uranium and thorium in uranium ore concentrates using ICP-MS and their age dating for nuclear forensic analysis

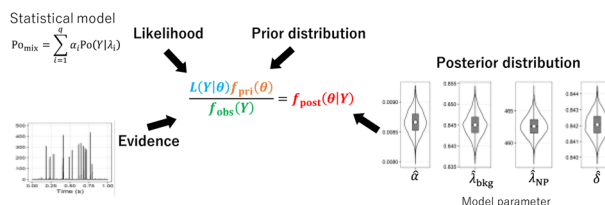
Wei Wang, Jiang Xu, Ruiyang Xi, Siqi Guo, Yongyang Su,  
Sui Fang, Haitao Zhang, Yalong Wang, Jinlong Fan,  
Lei Feng, Yufeng Wang and Zhiming Li\*



190

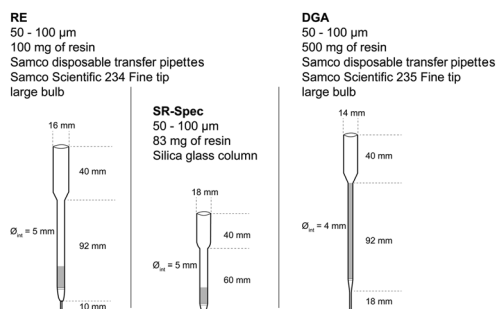
## Bayesian estimation to deconvolute single-particle ICP-MS data with a mixed Poisson distribution

Yoshinari Suzuki,\* Midori Kondo, Masae Harimoto,  
Yusuke Okamoto, Yu-ki Tanaka, Yasumitsu Ogra  
and Hiroshi Akiyama





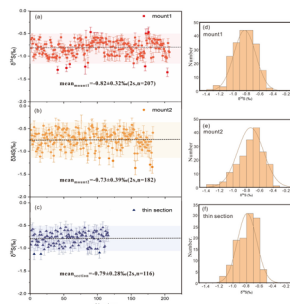
204



## Evaluation of two methods allowing the full preparation in a single day of silicate rocks in view of radiogenic isotope (Nd, Sr, and Pb) analyses

Christian Pin and Abdelmouhcine Gannoun\*

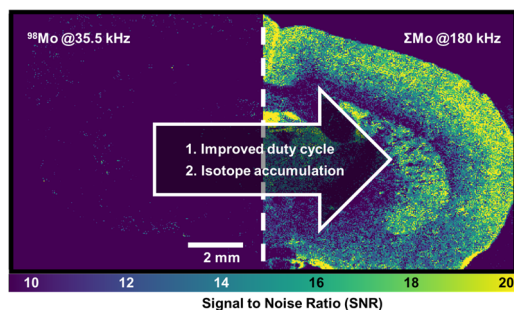
216



## A potential stibnite reference material for sulfur isotope determination by LA-MC-ICP-MS

Zhi-hui Dai,\* Shan-ling Fu,\* Yue-fu Liu, Yu-miao Meng, Zhi-an Bao, Ke-jun Hou and Ting-guang Lan

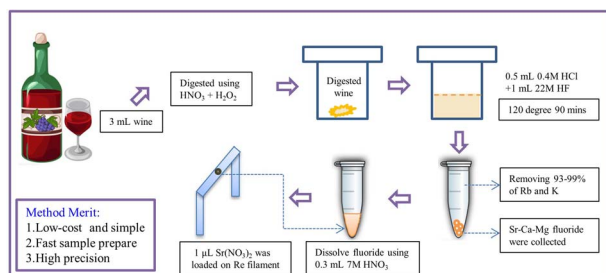
227



## Strategies to enhance figures of merit in ICP-ToF-MS

T. E. Lockwood, R. Gonzalez de Vega, Z. Du, L. Schlatt, X. Xu and D. Clases\*

235



## A low-cost and high precision determination method of $^{87}\text{Sr}/^{86}\text{Sr}$ ratios for red wine using thermal ionization mass spectrometry without column separation

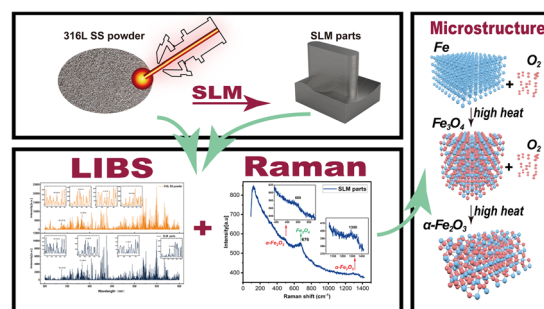
Chao-Feng Li,\* Xuan-Ce Wang, Zhu-Yin Chu and Peng Peng



244

## The mechanism of sample composition variation in the selective laser melting process based on the laser-induced breakdown spectroscopy and Raman system detection

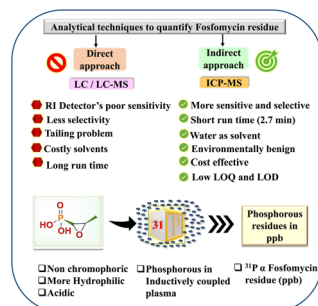
Jingjun Lin, Yao Li, Xiaomei Lin\* and Changjin Che\*



253

## ICP-MS: a tool for detection and quantitation of fosfomycin residues in cleaning samples of finished product by estimation of phosphorous load

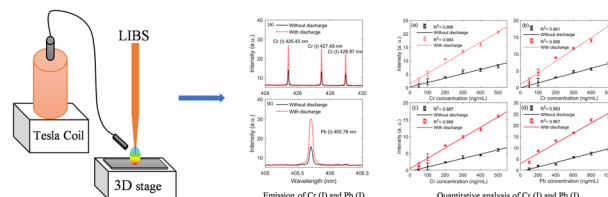
Anirban Roy Chowdhury,\* Sujal Shah, Rahul Y. Kapse, Tushar Mehta and Amit Mukharya



261

## Sensitivity improvement of laser-induced breakdown spectroscopy to detect heavy metals in water by Tesla coil discharge

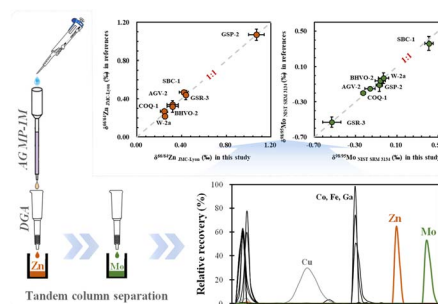
Qiuyun Wang, Anmin Chen\* and Xun Gao\*

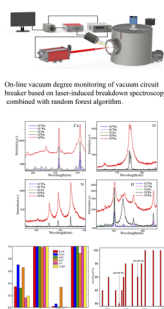


269

## A fast double-stack column chemical separation of Zn and Mo from geological samples for isotopic analysis by MC-ICP-MS

Yan Han, Lian Zhou, Minghui Shi, Yating Hu, Ge Zhang, Xin Hou and Lanping Feng\*





## On-line vacuum degree monitoring of vacuum circuit breakers based on laser-induced breakdown spectroscopy combined with random forest algorithm

Feilong Zhang, Huan Yuan,<sup>\*</sup> Aijun Yang,<sup>\*</sup> Xiaohua Wang, Jifeng Chu, Dingxin Liu and Mingzhe Rong

