

IN THIS ISSUE

ISSN 0267-9477 CODEN JASPE2 40(3) 531–922 (2025)



Cover

See H. B. Andrews *et al.*, pp. 689–699. Image reproduced by permission of H. B. Andrews from *J. Anal. At. Spectrom.*, 2025, **40**, 689.

ATOMIC SPECTROMETRY UPDATES

541

Atomic spectrometry update: review of advances in the analysis of clinical and biological materials, foods and beverages

Marina Patriarca,* Nicola Barlow, Alan Cross, Sarah Hill, David Milde and Julian Tyson

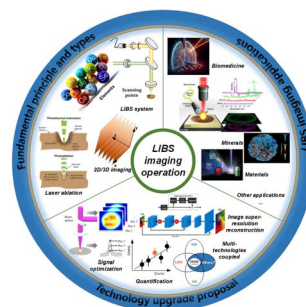


TUTORIAL REVIEW

665

Recent advances in chemical composition imaging operation based on laser-induced breakdown spectroscopy

Shangyong Zhao, Yuchen Zhao, Yujia Dai, Ziyuan Liu, Zongyu Hou, Xun Gao and Zhe Wang*



**GOLD
OPEN
ACCESS**

EES Batteries

**Exceptional research on
batteries and energy storage**

Part of the EES family

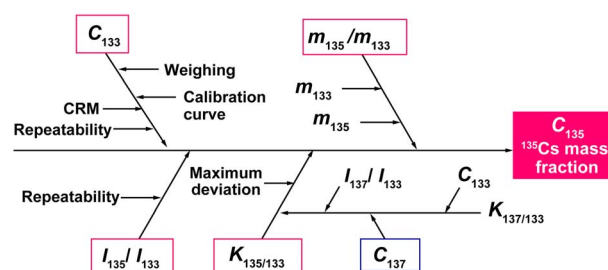
**Join
in** | Publish with us
rsc.li/EESBatteries

TECHNICAL NOTE

679

SI-traceable quantification of ^{135}Cs in ^{137}Cs solution for ^{135}Cs standardization

Shiho Asai,* Taiyo Tajima, Aya Sakaguchi, Yasushi Sato, Hideki Harano and Katsuhiko Shirono

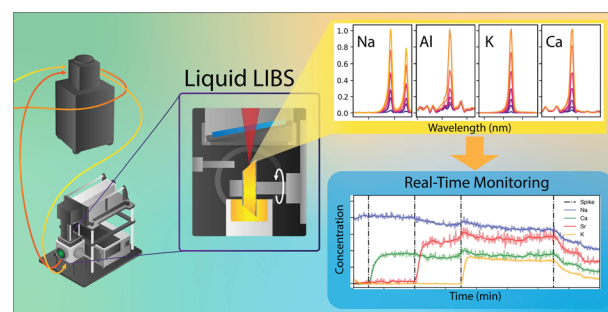


PAPERS

689

Real-time elemental analysis of liquids for process monitoring using laser-induced breakdown spectroscopy with a liquid wheel sampling approach

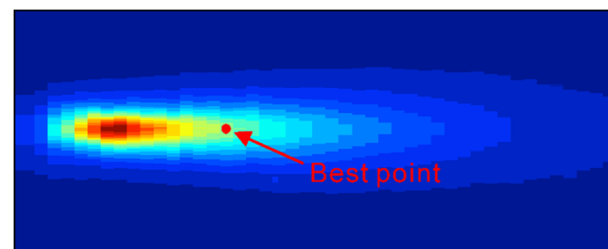
H. B. Andrews,* Z. B. Kitzhaber, B. T. Manard, M. Z. Martin and L. R. Sadergaski



700

In situ carbon isotope analysis of diamonds using LA-MC-ICP-MS inspired by the distribution of ions and isotope ratios in ICP

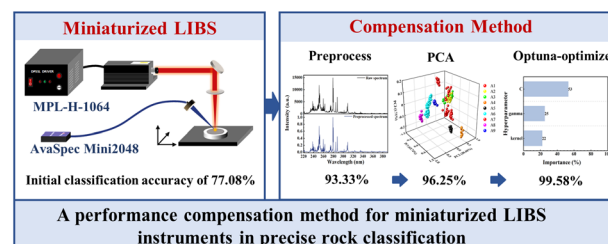
Yi-Ming Huo, Zhi-Yong Zhu,* Chang-Fu Fan, Yu-Wei She, Jia-Long Hao and Xiang-Kun Zhu



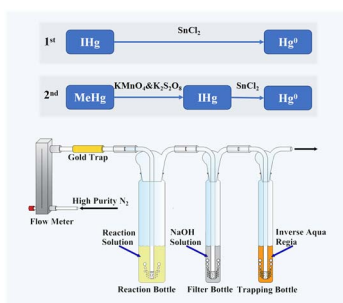
715

A performance compensation method for miniaturized LIBS instruments in precise rock classification

Yuting Fu, Jing Chen, Biye Liu, Beibei Hu, Xueying Jin, Guang Yang* and Huihui Sun*



727



A dual-stage purge-trap protocol to separate species-specific mercury from marine biota for precise isotopic analysis

Songjing Li, Ruoyu Sun,* Xiaowei Chen, Wei Zhang, Mei Meng, Yi Liu, Wang Zheng and Jiubin Chen

738

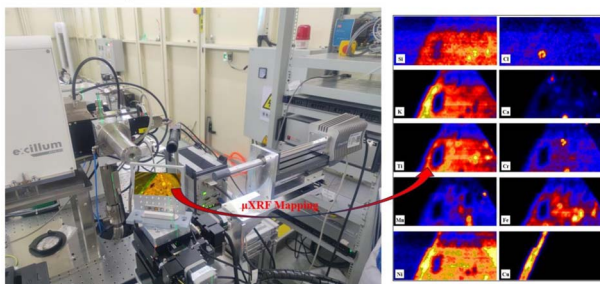


Second version of the open-source software GSA for gamma-ray spectrum analysis

Lahcen El Amri,* Hamid Amsil, Omar El Bounagui, Abdelouahed Chetaine, Brahim Elmokhtari, Hamid Bounouira and Abdessamad Didi

747

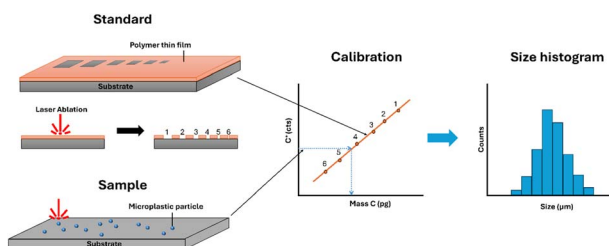
A lab-based micro X-ray fluorescence spectrometer



A lab-based micro-X-ray fluorescence spectrometer with high photon flux and spatial resolution for ancient ceramic research

Xiao-Sheng Lin, Miao-Miao Wang, Miao Shu, Chao-Yang Li, Hai-Jing Li, Xu Wang,* Chun-Zhen Yang* and Rui Si*

753



Novel calibration approach for particle size analysis of microplastics by laser ablation single particle-ICP-MS

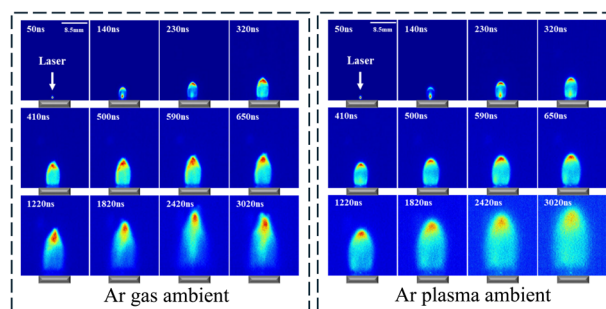
Lukas Brunnbauer,* Laura Kronlachner, Elias Foisner and Andreas Limbeck*



762

Spatio-temporal evolution of laser ablation W plasma under low-pressure Ar gas and Ar plasma ambients

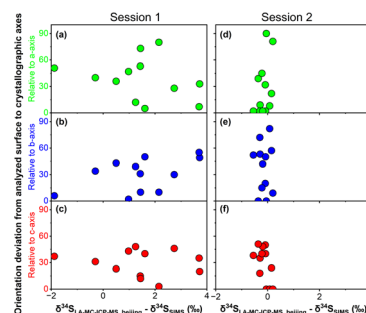
Boliang Men, Cong Li,* Qi He, Hongmin Qu, Shiming Liu, Longfei Li, Huace Wu, Zhonglin He, Jielin Shi, Ding Wu, Ran Hai, Xingwei Wu and Hongbin Ding



775

No significant crystal orientation effect during sulfur isotope analysis of marcasite using SIMS

Rucao Li,* Jinyu Yan, Jianwei Yu, Xiao-Lei Wang, Tao Yang, Shengping Qian, Chengming Wang* and Haiyang Xian

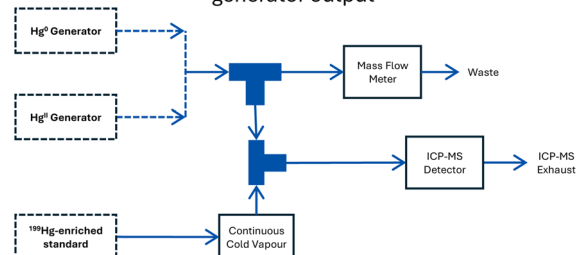


785

An isotope dilution approach for validating the output of mercury gas generators for mercury pollution monitoring

Sophie Page, Philip J. H. Dunn,* Panayot Petrov, Sreekanth Vijayakumaran Nair, Igor Živković, Milena Horvat, Warren T. Corns and Heidi Goenaga-Infante*

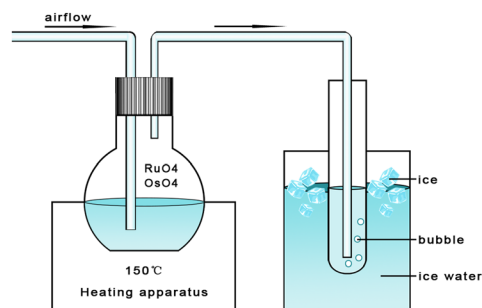
Online IDMS quantification of Hg generator output



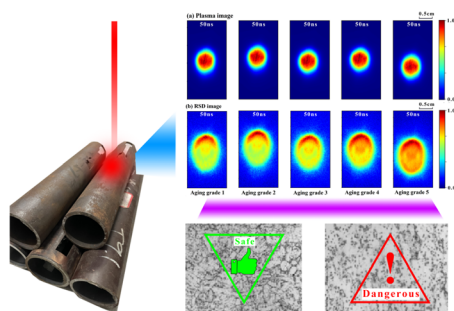
795

Determination of Ru and Os with enhanced sensitivity and Rh, Pd, Pt and Ir at sub ng g⁻¹ levels in geological samples by ICP-MS

Qishuai Huang,* Yali Sun* and Shouqian Zhao



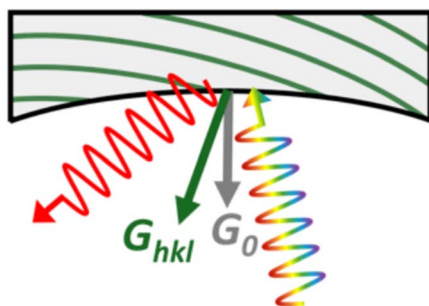
808



Plasma evolution investigation and aging grade evaluation of heat resistant steel based on laser induced plasma images

Junbin Cai, Meirong Dong,* Feiqiang Tang, Kaiqing Chen, Zhichun Li, Weijie Li, Shunchun Yao and Jidong Lu

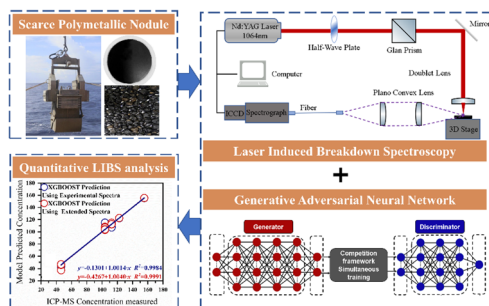
817



hklhop: a selection tool for asymmetric reflections of spherically bent crystal analyzers for high resolution X-ray spectroscopy

Jared E. Abramson, Yeu Chen and Gerald T. Seidler*

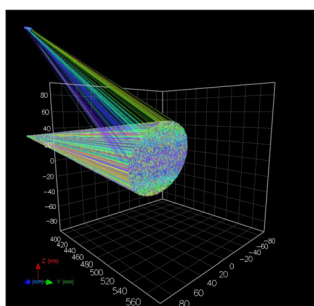
825



Data augmentation using GANN in the quantitative LIBS analysis of scarce samples: a case study on polymetallic nodules from 5000 m ocean depth

Jie Ren, Suming Jiang, Chen Sun, Zhenggang Li, Yanhui Dong, Ling Chen, Xibin Han, Jin Yu and Wendong Wu*

836



A ray tracing survey of asymmetric operation of the X-ray Rowland circle using spherically bent crystal analyzers

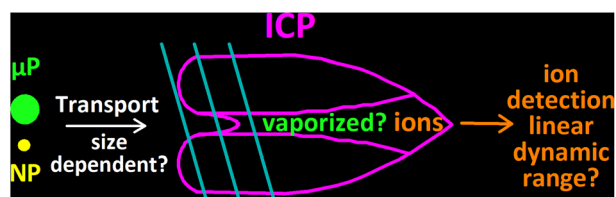
Yeu Chen, Anthony J. Gironda, Yaxin Shen, André D. Taylor and Gerald T. Seidler*



848

Challenges in measuring nanoparticles and microparticles by single particle ICP-QMS and ICP-TOFMS: size-dependent transport efficiency and limited linear dynamic range

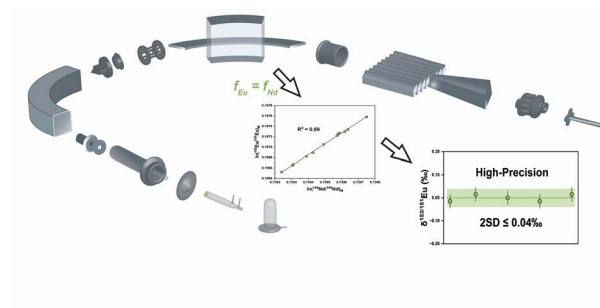
Madeleine Lomax-Vogt, Lucas M. Carter, Jonas Wielinski, Stanislav Kutuzov, Gregory V. Lowry, Ryan Sullivan, Paolo Gabrielli and John W. Olesik*



860

High-precision measurement of Eu isotopes enabled by Nd internal normalization

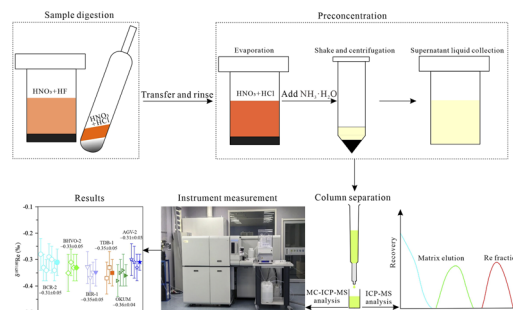
Hao Wu, Jiang-Hao Bai,* Xi-Rong Liang, Xi-Bin Lu, Yong-Ying Li, Yi-Nan Deng, Ye Zhao and Gang-Jian Wei*



868

High intermediate precision rhenium isotopic measurements in geological samples

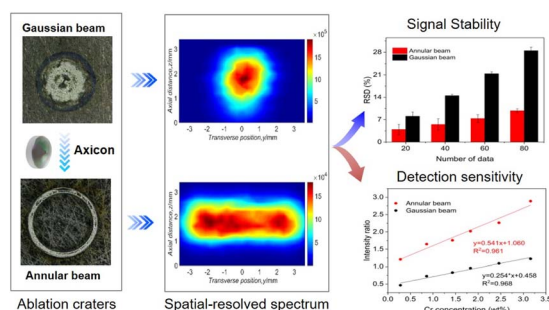
Jinhua Liu, Lian Zhou, Xiang Wang, Jianwei Li, Thomas J. Algeo and Xiaodong Deng*



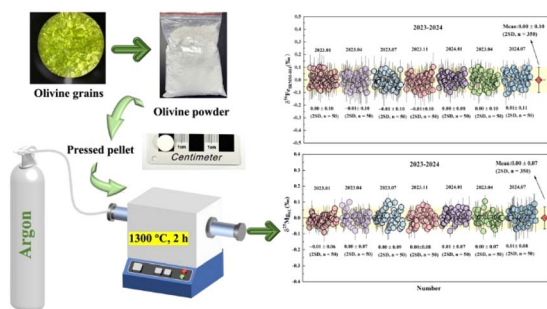
879

Analytical-performance enhancement of laser-induced breakdown spectroscopy using an annular laser beam

Bo Dai, Jingge Wang,* Mianyun Ye, Yonghao Han and Hehe Li



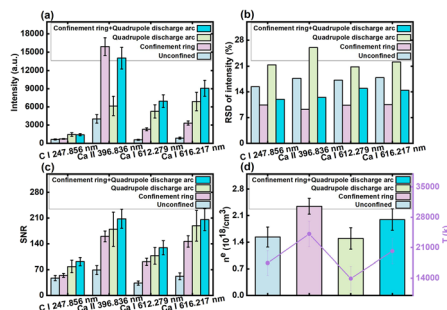
888



Synthesis of a new olivine reference material by a novel method for *in situ* iron and magnesium isotope analyses using laser ablation MC-ICP-MS

Xianli Zeng, Ming Li,* Wen Zhang,* Hongyun Jin, Yongsheng Liu, Zhaochu Hu, Tao Luo, Shengjun Yang, Zhenyan Liu and Jingyuan Wang

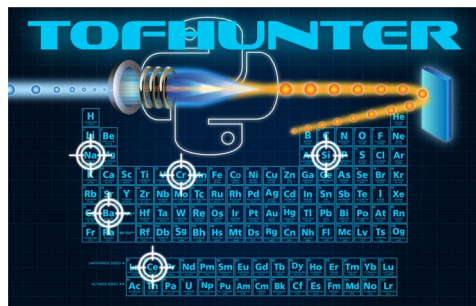
901



Accuracy enhancement of laser-induced breakdown spectroscopy using a combination of a confinement ring and quadrupole discharge arc

Kaiqiang Yu, Yeping Ren, Xiaodong Liu, Xiaoning Yang, Haohan Sun, An Li, Yumei Wu, Caihao Ding, Xianshuang Wang* and Ruibin Liu*

910



TOFHunter—unlocking rapid untargeted screening of inductively coupled plasma–time-of-flight–mass spectrometry data

Hunter B. Andrews,* Lyndsey Hendriks, Sawyer B. Irvine, Daniel R. Dunlap and Benjamin T. Manard

