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See Hunter B. Andrews, Benjamin T. Manard *et al.*, pp. 1678–1688. Image reproduced by permission of Hunter Andrews from *J. Anal. At. Spectrom.*, 2025, 40, 1678.



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See Andrea Raab, Hamid Badiei and Jörg Feldmann, pp. 1689–1699. Image reproduced by permission of H. Badiei from *J. Anal. At. Spectrom.*, 2025, 40, 1689.

ATOMIC SPECTROMETRY UPDATES

1615

Atomic spectrometry update: review of advances in elemental speciation

Robert Clough,* Chris F. Harrington, Steve J. Hill, Yolanda Madrid and Julian F. Tyson

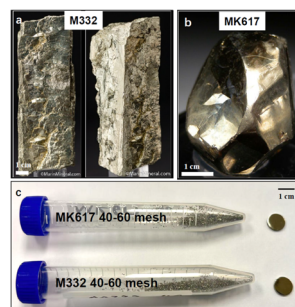


TECHNICAL NOTES

1645

M332 and MK617: two new potential pyrite reference materials for *in situ* sulfur isotope analysis

Jia-Long Hao,* Ruo-Long Chi, Zheng-Jie Qiu,* Guo-Qiang Tang, Ze-Xian Cui, Lian-Jun Feng, Hao Yan, Qiao-Qiao Zhu, Ping Gao and Wei Yang



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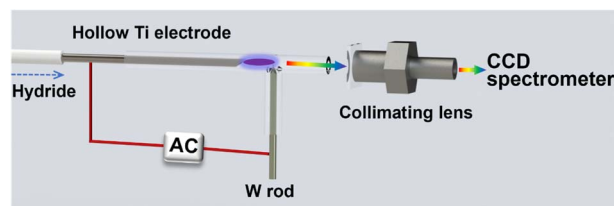
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TECHNICAL NOTES

1652

A radially confined point discharge microplasma for a miniaturized optical emission spectrometer

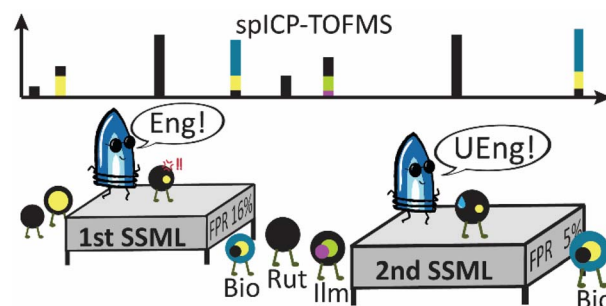
Wen Zeng, Tao Lin, Qinsong Tang, Xiaoming Jiang* and Xiandeng Hou*



1658

Two-stage semi-supervised machine learning for classification of Ti-rich nanoparticles and microparticles measured by spICP-TOFMS

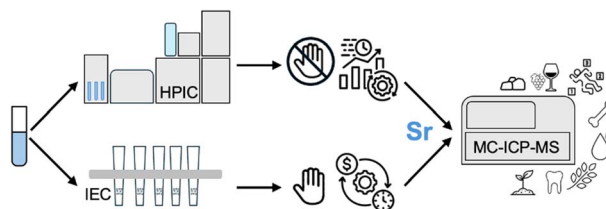
Raven L. Buckman Johnson, Hark Karkee and Alexander Gundlach-Graham*



1666

A workflow-optimized protocol for accelerated sample preparation and automated Sr separation from natural waters for $^{87}\text{Sr}/^{86}\text{Sr}$ determination

Grace N. Manestar,* Hilary M. K. Lewis, Alex McCoy-West, Nishen Naidoo, Stefan Makart, Ondrea Thompson and Brandon Mahan

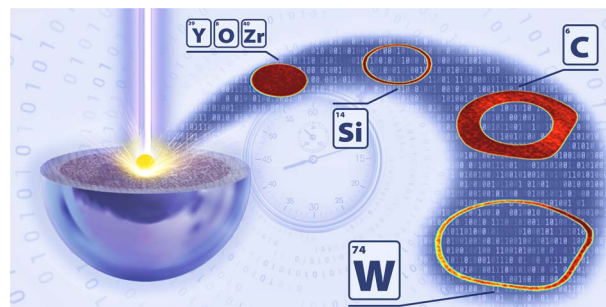


PAPERS

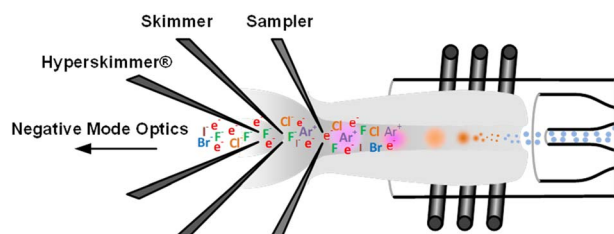
1678

Rapid spatial analysis of surrogate TRISO fuel particles using laser-induced breakdown spectroscopy image analysis

Hunter B. Andrews,* C. Derrick Quarles Jr, Toya Beiswenger, Joseph Petrus, Bence Paul and Benjamin T. Manard*



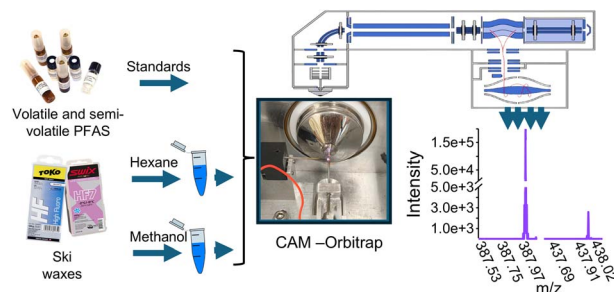
1689



How are negative ions in an ICPMS formed?

Andrea Raab, Hamid Badiei and Jörg Feldmann

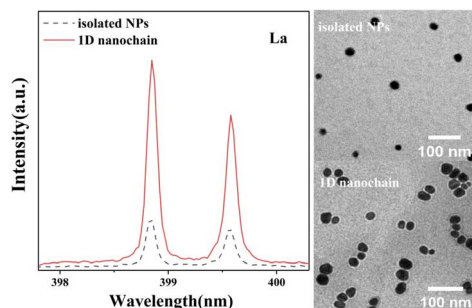
1700



Feasibility of closing the PFAS mass balance: exploring the potential of liquid sampling atmospheric pressure glow discharge (LS-APGD) with Orbitrap mass spectrometry for neutral PFAS

Viktoria Müller,* Davide Bleiner, Joseph V. Goodwin, Vasily Grebennikov, R. Kenneth Marcus and Jörg Feldmann*

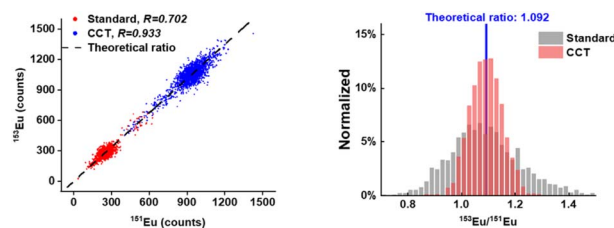
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Highly sensitive determination of lanthanides by nanochain enhanced laser-induced breakdown spectroscopy

Zhifan Li, Huiwei Wei, Gentao Gao, Zhiyong Deng,* Shaohua Sun, Zuoye Liu, Baowei Ding, Bitao Hu and Jie Shen*

1718



Single-particle isotope ratio analysis of lanthanide-doped microplastics using inductively coupled plasma time-of-flight mass spectrometry

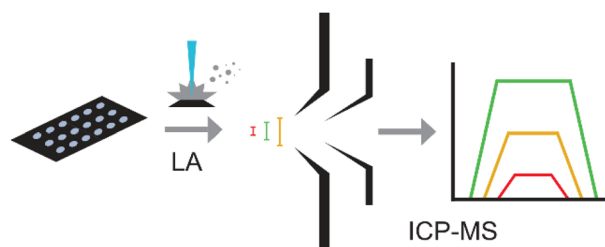
Jiale Tian, Lingna Zheng, Ziwei Meng, Wenjing Wang, Shanshan Liang, Hao Fang, Tingfeng Zhang, Bing Wang, Meng Wang* and Weiyue Feng*



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The influence of cone orifice diameter on ion transmission in solution and laser ablation ICP-MS

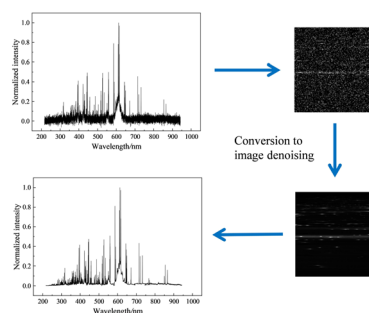
Claire A. Richards, Matthew A. Turner and Amy J. Managh*



1733

GHCTWNNM: a gradient histogram constraint truncated WNNM denoising algorithm for LIBS with spectrum-to-image conversion

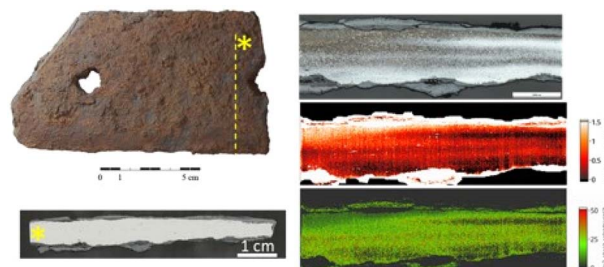
Shengjie Ma, Shilong Xu,* Congyuan Pan, Jiajie Fang, Fei Han, Xi Wang, Yuhao Xia, Wanying Ding and Yihua Hu*



1746

Laser-induced breakdown spectroscopy (LIBS) imaging for carbon quantification in archaeological ferrous alloys

Sarah Richiero, Xueshi Bai,* Clothilde Comby-Zerbino, Nicolas Herreyre, Agnès Piednoir, Manon Gosselin, Philippe Dillmann, Florian Téreygeol, Nicolas Wilkie-Chancellor, Vincent Motto-Ros and Vincent Detalle

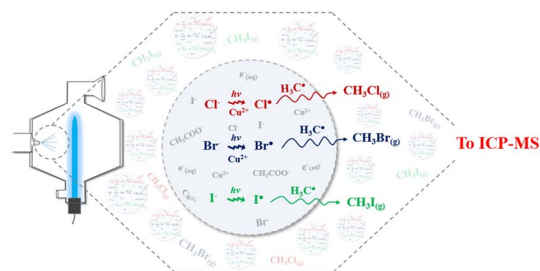


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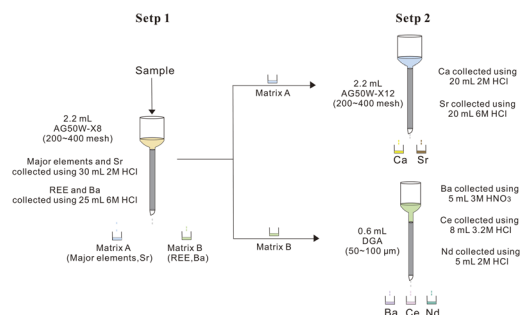
Simultaneous determination of Cl, Br and I by aerosol-assisted PVG-ICP-MS

Gustavo R. Bitencourt, Paola A. Mello, Patricia Grinberg* and Ralph E. Sturgeon

UV-assisted spray chamber



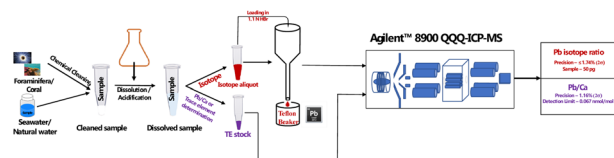
1767



Sequential separation of multi-isotopes from limited samples through a two-step column chromatography approach

Lei Li, Fang Liu,* Qingyao Peng, Zhaofeng Zhang, Xin Li and Yajun An

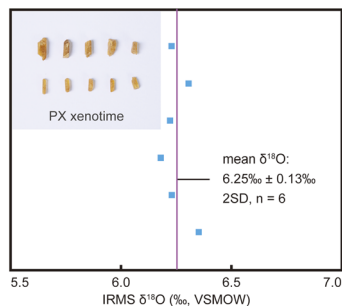
1776



Accurate and precise determination of Pb/Ca and lead isotopes ($^{206}\text{Pb}/^{207}\text{Pb}$) from mass-limited coral samples by ICP-QQQ-MS

I. V. Satya Chanakya,* Sambuddha Misra and Waliur Rahaman

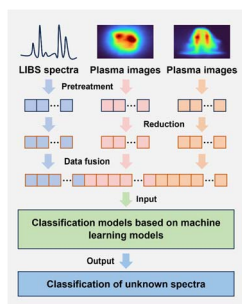
1788



PX xenotime: a new reference material for SIMS oxygen isotopic microanalysis and potential applications

Li-Guang Wu, Xiao-Xiao Ling,* Guo-Qiang Tang, Yu Liu, Zhenyu Chen, Qiu-Li Li, Xian-Hua Li and Benita Putlitz

1796



Rapid and accurate classification of coal by laser-induced breakdown spectroscopy coupled with a plasma image-spectrum fusion strategy

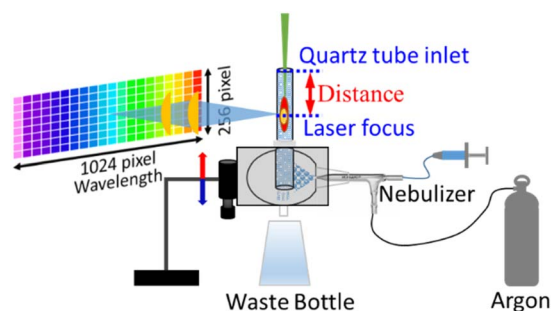
Honghua Ma, Shengqun Shi, Xiujuan Hu, Geng Li, Yongtai Zhuang, Ziqi Zhu, Deng Zhang* and Lianbo Guo*



1804

Detection of nitrogen in water by plasma amplification LIBS assisted with spatially resolved spectroscopy

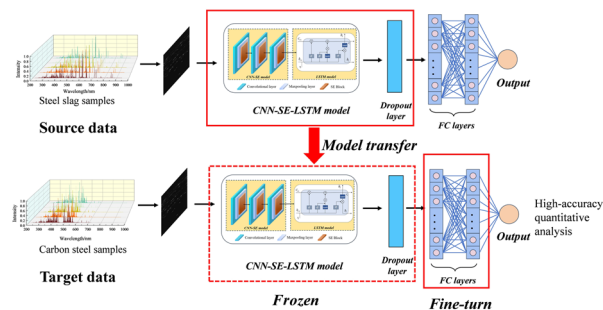
Xinyan Yang,* Xin Wang, Peng Zhu, Fei Han, Hongmei Ren, Zefeng Hua, Zhengbo Qin, Zhongfa Sun and Xianfeng Zheng



1810

TrCSL: a transferred CNN-SE-LSTM model for high-accuracy quantitative analysis of laser-induced breakdown spectroscopy with small samples

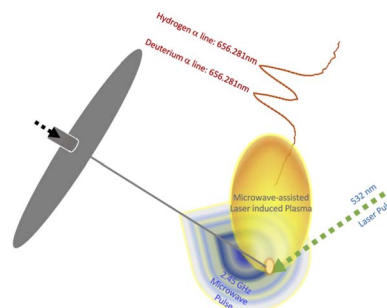
Shengjie Ma, Shilong Xu,* Congyuan Pan, Jiajie Fang, Fei Han, Yuhao Xia, Wanying Ding, Youlong Chen and Yihua Hu*



1821

Highly resolved detection of deuterium at atmospheric pressure

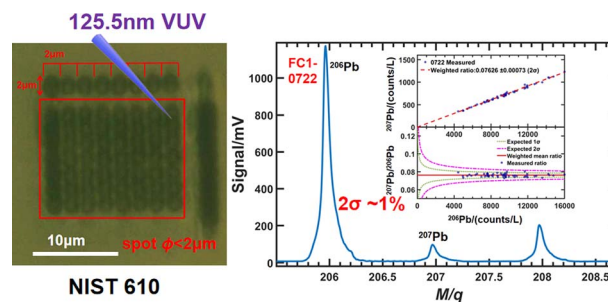
Ali M. Alamri, M. A. Wakil, Philip Kwong and Zeyad T. Alwahabi*



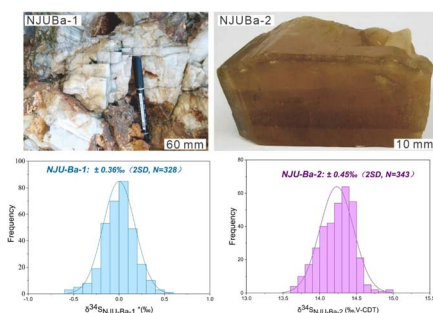
1833

Pb isotope ratio and trace element analysis using VUV-TOF mass spectrometry: applications to NIST 610/612 and zircon FC1

Yixuan Li, Haoyu Shi, Peng Wang and Yuxiang Mo*



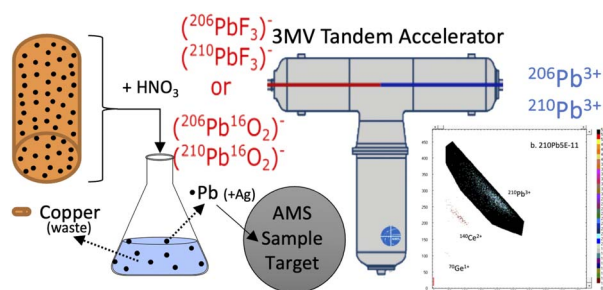
1845



Two new barite reference materials for SIMS sulfur isotope analysis: evaluation of the crystallographic orientation effect and homogeneity

Lan-Lan Tian, Xiao-Lei Wang,* Yue Guan, Wen-Li Xie, Kexin Xu, Feng-Tai Tong, Tao Yang and Yong-Bo Peng

1852



Assay of lead-210 in metallic copper via accelerator mass spectrometry

Doru Pacesila, Iuliana Stanciu,* Razvan Gornea, William E. Kieser, Nimal De Silva, Albert Zondervan, Barbara Francisco, Michaela Froehlich, Michael Hotchkis, Marie-Cécile Piro and Guillaume Giroux

CORRECTION

1862

Correction: The occurrence and sources of Ni in ambient air particulates using synchrotron radiation based X-ray fluorescence and X-ray absorption near edge structure

Abdallah A. Shaltout,* Messaoud Harfouche, Omar H. Abd-Elkader and Diane Eichert

