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Inside cover
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Atomic spectrometry update: review of advances in atomic spectrometry and related techniques

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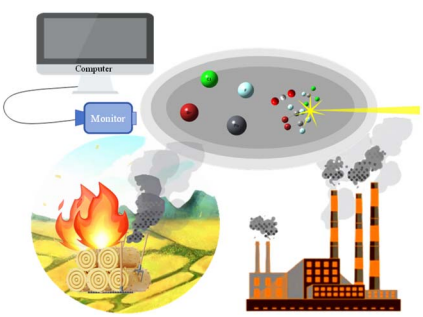
***In situ* online detection of atmospheric particulate matter based on laser induced breakdown spectroscopy: a review**

Zhuoyi Sun, Cong Yu, Jun Feng, Junyi Zhu and Yuzhu Liu*



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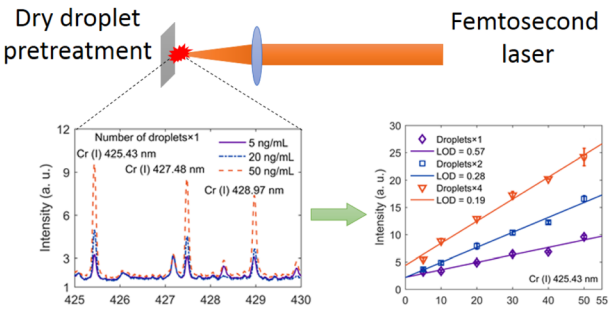
TECHNICAL NOTE

1225

High-sensitivity analysis of trace elements in water using femtosecond LIBS with dry droplet pretreatment on a metallic substrate

Yutong Chen, Xiangtong Wan, Jiarui Si, Jianhui Han,* Anmin Chen* and Mingxing Jin*



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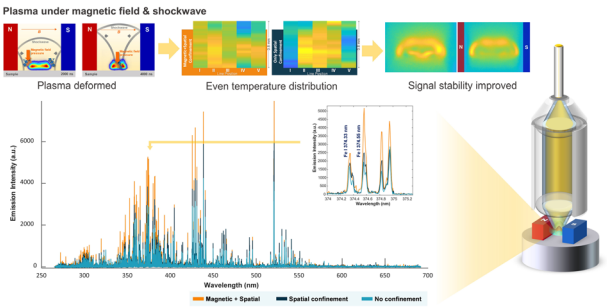
Synergy enhancement and signal uncertainty of magnetic-spatial confinement in fiber-optic laser-induced breakdown spectroscopy

Jinghui Li, Jian Wu,* Mingxin Shi, Yan Qiu, Ying Zhou, Hao Sun, Xinyu Guo, Di Wu, Yuhua Hang, Hailiang Yang and Xingwen Li



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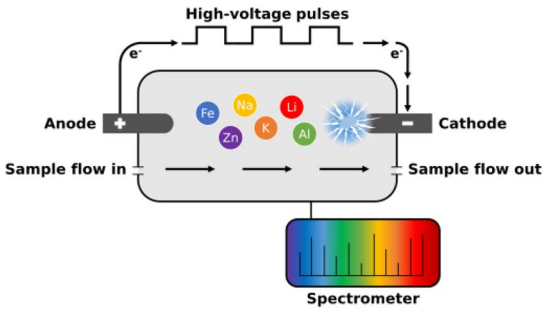
Trace element analysis in lithium matrices using micro-discharge optical emission spectroscopy

Bastian Wiggershaus, Miisamari Jeskanen, Aappo Roos, Carla Vogt* and Toni Laurila



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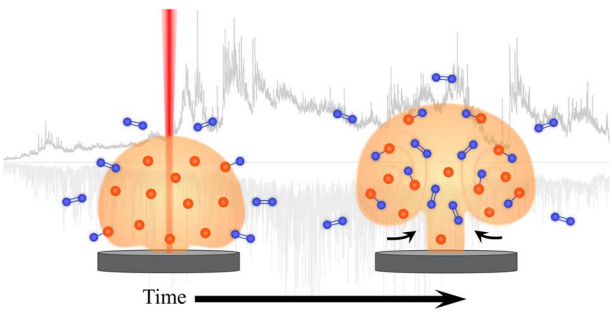
Spatiotemporal characterization of cerium monoxide in laser ablation plasmas using spectrally-resolved fast-gated imaging

Emily H. Kwapis* and Kyle C. Hartig



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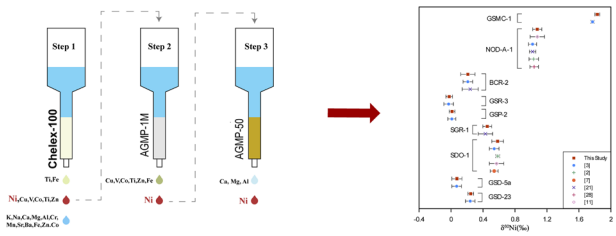

Development of a Chelex-100 based three-step chromatographic procedure for nickel isotope analysis in geological samples

Tao Yang,* Huiyang Yu, Zhiyong Zhu, Rui Ding, Jin Wang and Bi Zhu

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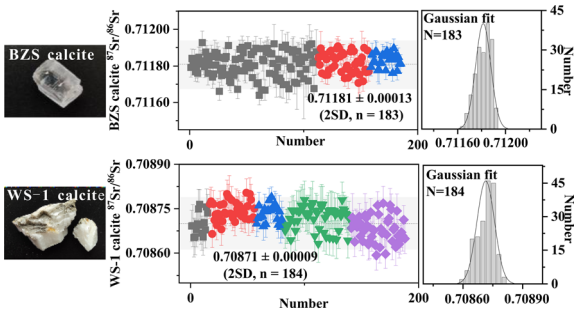

Development of two novel natural calcite reference materials for enhanced *in situ* elemental and Sr isotopic analysis

Xuna Yin, Miaohong He,* Le Zhang,* Guanhong Zhu, Wenfeng Deng and Gangjian Wei

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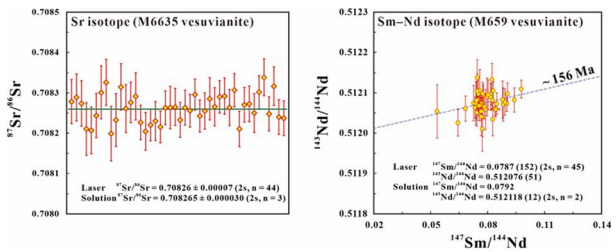

In situ Sr–Nd isotope analysis of vesuvianite by LA-MC-ICP-MS: methodology and application

Qin-Di Wei, Yue-Heng Yang,* Hao Wang, Shi-Tou Wu, Ming Yang, Chao Huang, Lei Xu, Lie-Wen Xie, Jin-Hui Yang and Fu-Yuan Wu

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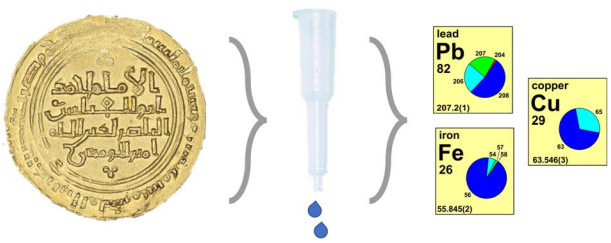

Development of a multi-isotopic (Pb, Fe, Cu) analytical protocol in gold matrices for ancient coin provenance studies

Louise de Palaminy,* Franck Poitrasson, Sandrine Baron, Maryse Blet-Lemarquand and Loïc Perrière

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PAPERS

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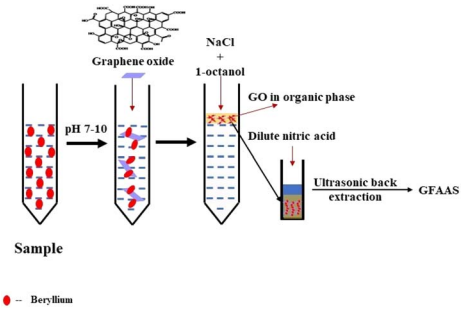
Interference free ultratrace beryllium determination in alkaline effluents of beryllium processing plants by graphite furnace atomic absorption spectrometry after a novel graphene oxide-assisted dispersive micro solid phase extraction without using a chelating agent

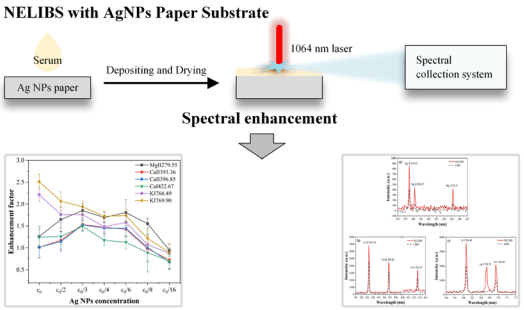
Saikrishna Devulapally,* N. N. Meeravali and A. C. Sahayam



1332

Nanoparticle-enhanced laser-induced breakdown spectroscopy for serum element analysis using an Ag NP-coated filter paper substrate

Xinxin Zhang, Xiaohui Li,* Xue Chen, Mengshan Shi and Tao Ren



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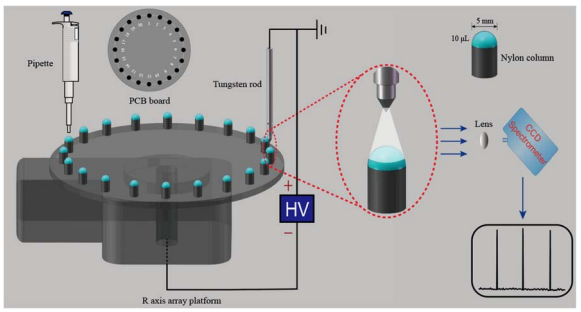
Development of a droplet cathode glow discharge excitation source for high throughput detection of Li, Ca and K in serum samples

Jinzhao Liu, Junhang Dong, Shanru Han, Jingwen Zhang, Xing Liu, Hongtao Zheng and Zhenli Zhu*



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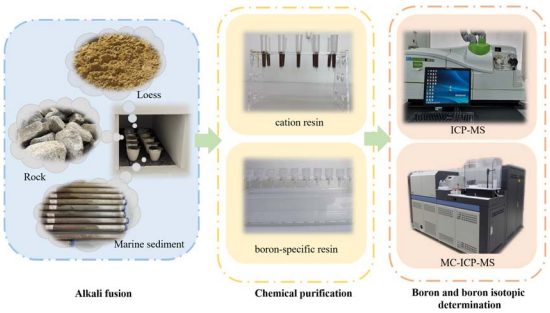
Purification of boron using a combination of cationic and boron-specific resins and determination of boron isotopic composition in sediments by MC-ICP-MS

Ning Zhang, Xue-Qin Wen, Mao-Yong He,* Tongxiang Ren,* Li Deng, Yuanyuan Cheng, Xiaolin Zhang and Junhua Guo



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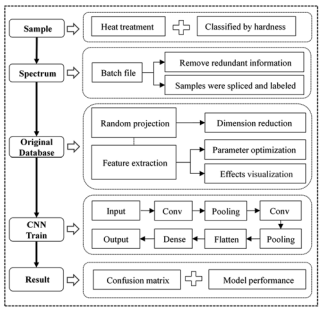

Microstructure classification of steel samples with different heat-treatment processes based on laser-induced breakdown spectroscopy (LIBS)

Minchao Cui,* Guangyuan Shi, Lingxuan Deng, Haorong Guo, Shilei Xiong, Liang Tan, Changfeng Yao, Dinghua Zhang and Yoshihiro Deguchi*

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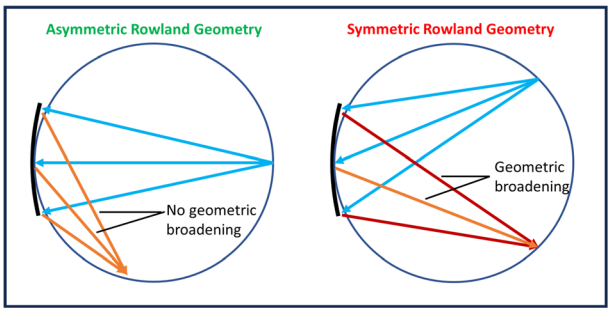

Asymmetric Rowland circle geometries for spherically bent crystal analyzers in laboratory and synchrotron applications

Anthony J. Gironda, Jared E. Abramson, Yeu Chen, Mikhail Solovyev, George E. Sterbinsky and Gerald T. Seidler*

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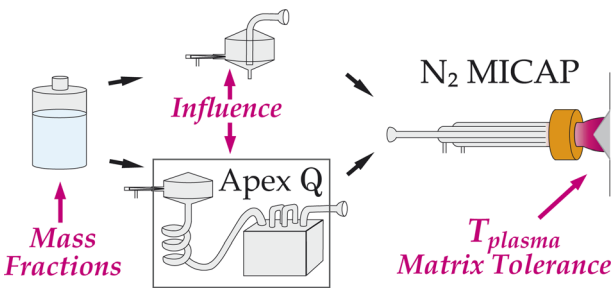

Quantification capabilities of N_2 MICAP-MS with solution nebulization and aerosol desolvation

Monique Kuonen, Bodo Hattendorf and Detlef Günther*

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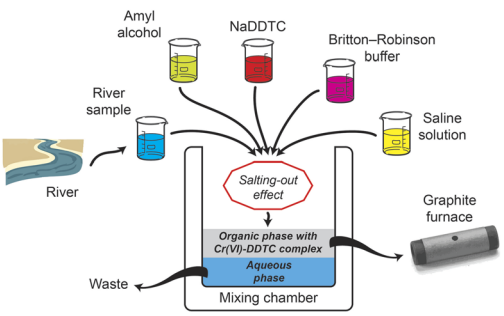

Automated salting-out assisted single-phase liquid–liquid extraction of Cr(VI) from river water samples prior to its atomic absorption spectrometric determination

Francisco Antonio S. Cunha,* Julys Pablo A. Fernandes, Wellington S. Lyra, Amalia Geiza G. Pessoa, Josué C. C. Santos, Mario C. U. Araújo and Luciano F. Almeida

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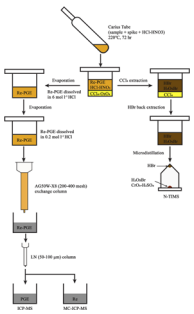
1405

An improved chromatographic method for separation of Re and PGE mass fractions in organic-rich geological samples

An-Ping Zou, Zhu-Yin Chu,* Meng-Jie Wang and Peng Peng



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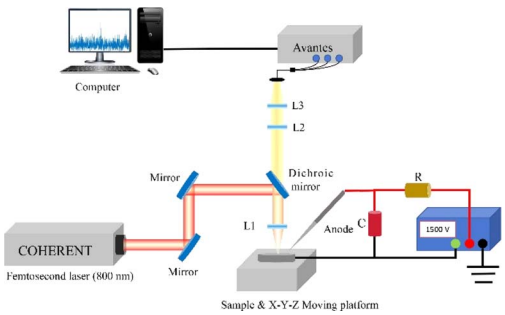
Accurate prediction analysis of steel alloy elements by femtosecond laser-ablation spark-induced breakdown spectroscopy and out-of-bag random forest regression

Xiaoyong He,* Bing Dong, Bingyan Zhou, Jingbo Liu and Yarui Wang