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Cover

See Yuzhu Liu, Jozef Lengyel *et al.*, pp. 114–121. Image reproduced by permission of Jun Feng, Yihui Yan and Yuzhu Liu from *J. Anal. At. Spectrom.*, 2025, **40**, 114. Image partly generated using BRIA AI.

ATOMIC SPECTROMETRY UPDATES

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Atomic spectrometry update – a review of advances in environmental analysis

Warren R. L. Cairns, Owen T. Butler,* Olga Cavoura, Christine M. Davidson, José-Luis Todolí-Torró and Marcus von der Au



Atomic Spectrometry Updates

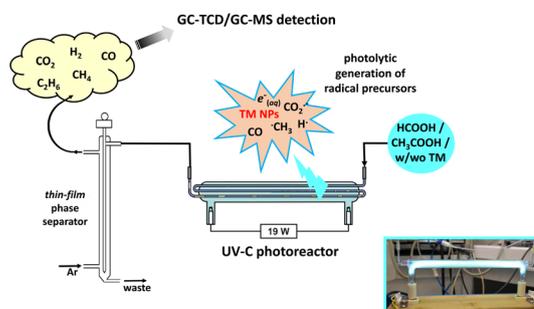


TUTORIAL REVIEW

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Insights into the role of transition and noble metals mediating photochemical vapor generation

Ralph E. Sturgeon,* Enea Pagliano, Gisele S. Lopes, Renato S. A. Neto and Jane K. S. Brito



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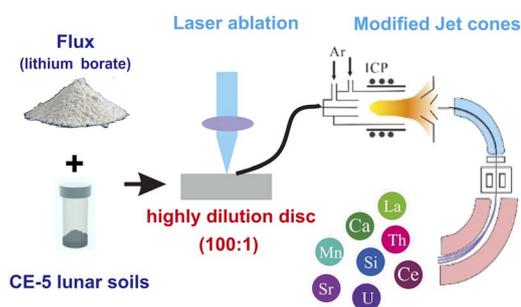
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Fundamental questions
Elemental answers

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Chemical analysis of Chang'e-5 lunar soil using LA-ICP-MS in highly diluted fused glass discs

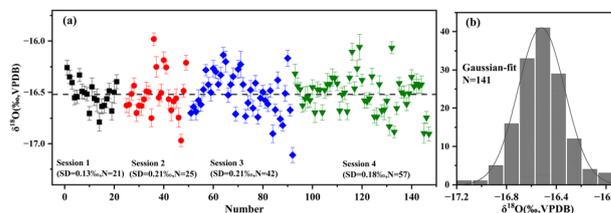
Shitou Wu,* Dingshuai Xue, Yueheng Yang, Hao Wang, Chunlai Li and Fuyuan Wu



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A new calcite reference material for *in situ* oxygen isotope analysis using secondary ion mass spectrometry: development and application constraints

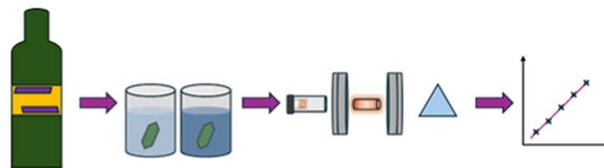
Xuna Yin, Miaohong He,* Le Zhang,* Wenfeng Deng, Yangrui Guo, Zexian Cui, Qing Yang, Yanqiang Zhang and Gangjian Wei



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Ultra-trace elemental determination of Si by means of graphite furnace-atomic absorption spectrometry

Annika Schulze, Maximilian von Bremen-Kühne,* Philipp Albert, Christoph Krösche and Cornel Venzago

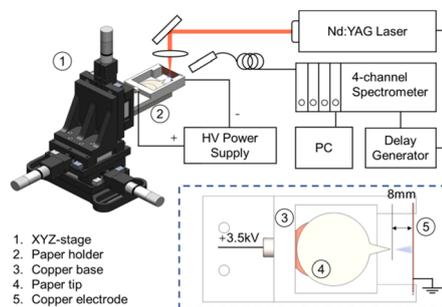


Si, leached from coated glass into food contact simulants, analyzed by GF-AAS. LOQ = 0.2 µg/L.

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A simple method for elemental analysis of liquids in sprayed microdroplets by laser-induced breakdown spectroscopy

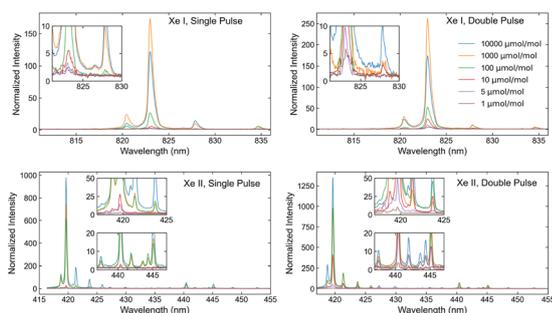
Jun Feng, Yihui Yan, Yuzhu Liu* and Jozef Lengyel*



1. XYZ-stage
2. Paper holder
3. Copper base
4. Paper tip
5. Copper electrode



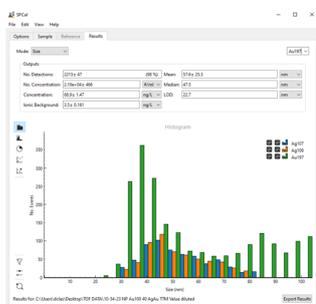
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Trace xenon detection in ambient helium by double-pulse laser-induced breakdown spectroscopy

L. Garrett,* M. Burger, Y. Lee, H. Kim, P. Sabharwall, S. Choi and I. Jovanovic

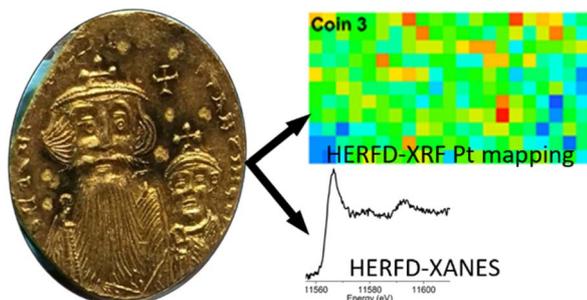
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SPCal – an open source, easy-to-use processing platform for ICP-TOFMS-based single event data

Thomas E. Lockwood, Lukas Schlatt and David Clases*

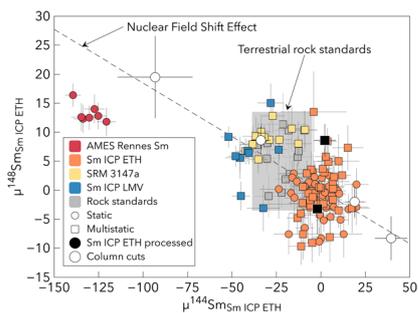
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Finding a needle in a haystack: quantitative HERFD-XRF imaging and HERFD-XANES characterization of trace platinum in gold solidi from the Late Roman and Byzantine Empires

Lisa L. Van Loon,* Y. Zou Finfrock, Debora M. Meira, R. W. Burgess, George Bevan and Neil R. Banerjee

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High-precision Sm isotope analysis by thermal ionisation mass spectrometry for large meteorite samples (>1 g)

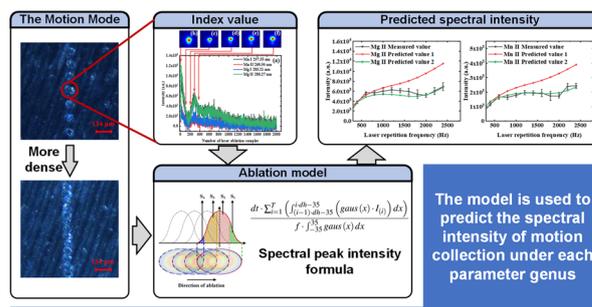
Paul Frossard,* James M. J. Ball and Maria Schönbacher



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A Gaussian spot overlap ablation model for prediction of aluminium alloy spectral peak intensity in high pulse repetition frequency LIBS

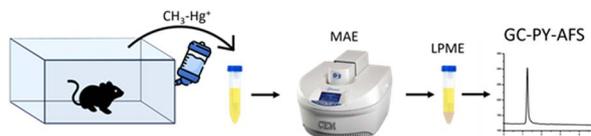
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Development of a selective methodology for methylmercury quantification and evaluation of its accumulation in hippocampus

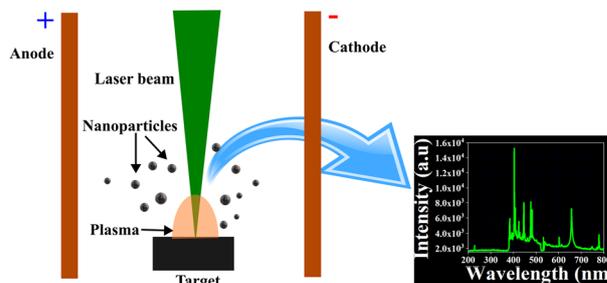
Marcelo Verdugo,* Ferdinand Ávila, Jhoel Ruiz, Constanza Vásquez, Nicole Roldán, M. Gabriela Lobos and Álvaro O. Ardiles



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External electric field assisted laser-induced plasma and bubble dynamics for optimizing Mn_2O_3 nanoparticles as UV emitters

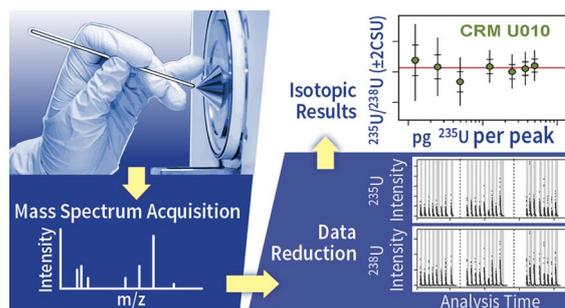
Sanchia Mae Kharphanbuh and Arpita Nath*



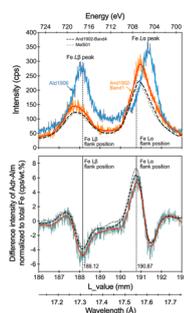
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Rapid $^{235}\text{U}/^{238}\text{U}$ determination by matrix assisted ionization–time-of-flight mass spectrometry

Shelby Bowden,* Kyle M. Samperton, Elizabeth D. LaBone, Haley B. Lawton, Abigail M. Waldron, Joseph M. Mannion, Matthew S. Wellons and Danielle R. Mannion



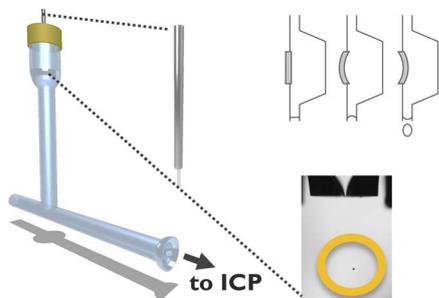
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New natural garnet reference materials for determining the oxidation state of iron in garnet using the electron microprobe flank method

Yonghua Cao, Chang-Ming Xing,* Christina Yan Wang, Xianquan Ping and Xiaoju Lin

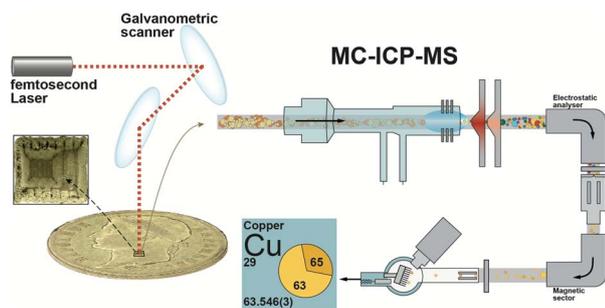
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Quantitative elemental analysis of human leukemia K562 single cells by inductively coupled plasma mass spectrometry in combination with a microdroplet generator

Yu-ki Tanaka,* Hinano Katayama, Risako Iida and Yasumitsu Ogra

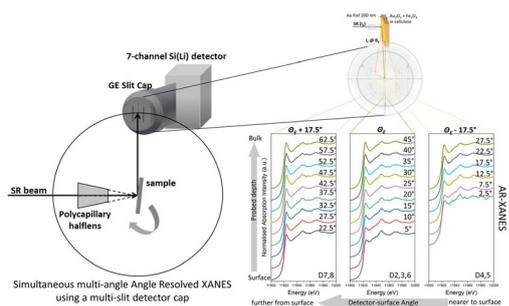
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In situ copper isotope analysis by femtosecond laser ablation multicollector inductively coupled plasma mass spectrometry (fs-LA-MC-ICP-MS) on historical gold coins

Louise de Palaminy,* Franck Poitrasson, Christophe Péchevran, Gaëlle Barbotin, Pascale Louvat, Sylvain Béral, Anne-Laure Ronzani, Luc Robbiola and Sandrine Baron

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Simultaneous multi-angle AR-XANES for surface-sensitive chemical speciation of gold nanolayers in wall painting replica

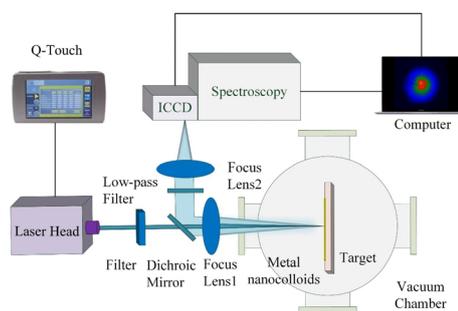
Maram Na'es,* Lars Lühl, Daniel Grötzsch, Ioanna Mantouvalou, Jonas Baumann and Birgit Kanngießer



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Vacuum degree detection performance improvement of vacuum switches based on NELIBS

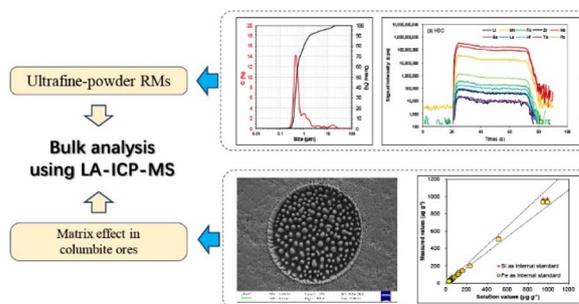
Jiaqi Liu, Xiaokang Ding, Feilong Zhang, Huan Yuan,*
Xiaohua Wang,* Aijun Yang, Jifeng Chu and Mingzhe Rong



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Bulk analysis of columbite ores by LA-ICP-MS: development of reference materials and investigation into matrix effects

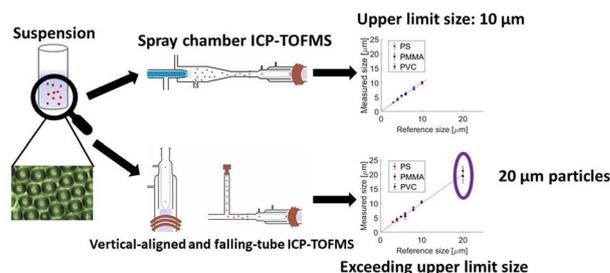
Subramaniyan Balachandar, Wen Zhang,* Yongsheng Liu,
Zhaochu Hu, Haihong Chen, Tao Luo, Tao He
and Xianli Zeng



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Quantitative sizing of microplastics up to 20 µm using ICP-TOFMS

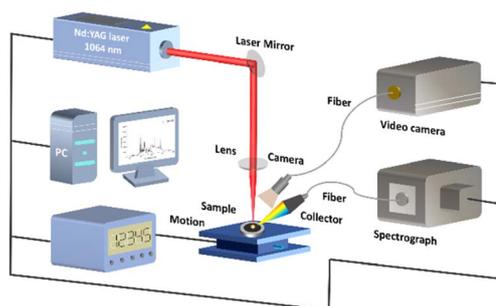
Fazzolari Sandro, Hattendorf Bodo and Günther Detlef*



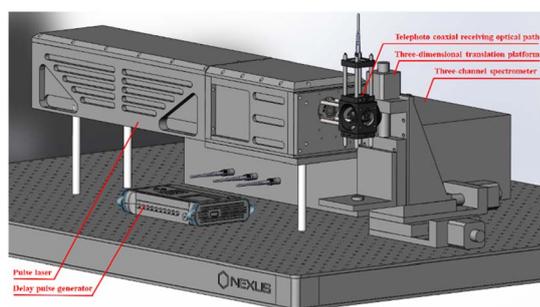
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High-precision coal classification using laser-induced breakdown spectroscopy (LIBS) coupled with the CST-PCA-based ISSA-KELM

Shuaijun Li, Xiaojian Hao,* Biming Mo, Junjie Chen,
Hongkai Wei, Junjie Ma, Xiaodong Liang and Heng Zhang



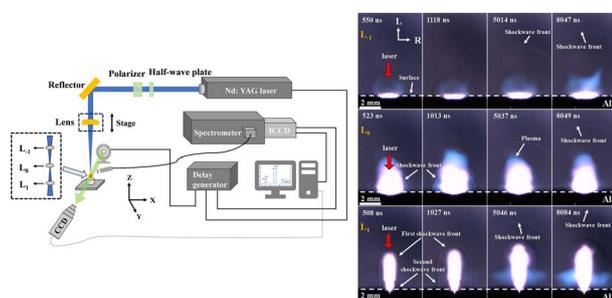
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An accurate quantitative method for NdFeB magnetism based on laser-induced breakdown spectroscopy

Guanyu Chen, Jing Chen, Dongming Qu, Guang Yang* and Huihui Sun*

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Influence of the distance between the focused point and Al surface on atomic and molecular emission spectra in air

Huihui Zhu, Bowen Fan, Yubo Zhang, Zhuo Wu, Fuli Chen, Xiaohui Su and Tao Lü*

