

IN THIS ISSUE

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Cover
See Liang-Liang Zhang *et al.*, pp. 2296–2305. Image reproduced by permission of Liang-Liang Zhang from *J. Anal. At. Spectrom.*, 2025, **40**, 2296.



Inside cover
See Luning Li, Weiming Xu *et al.*, pp. 2306–2326. Image reproduced by permission of Weiming Xu from *J. Anal. At. Spectrom.*, 2025, **40**, 2306.

ATOMIC SPECTROMETRY UPDATES

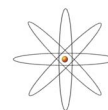
2275

Atomic spectrometry update: review of advances in X-ray fluorescence spectrometry

Christine Vanhoof,* Alan Cross, Ursula E. A. Fittschen and Laszlo Vincze



Atomic
Spectrometry
Updates

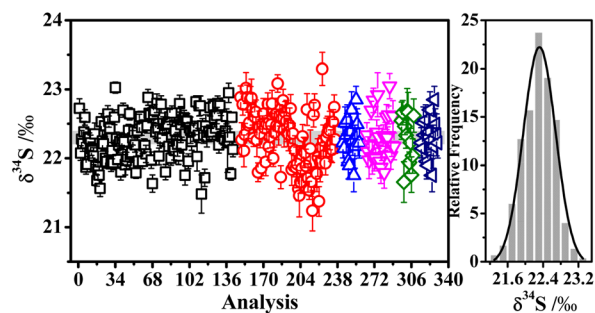


TECHNICAL NOTE

2290

Development of sulfur isotope microanalysis of calcite using secondary ion mass spectrometry: methodology and matrix effects

Miaohong He,* Wenfeng Deng, Zexian Cui, Qing Yang, Yanqiang Zhang and Gangjian Wei



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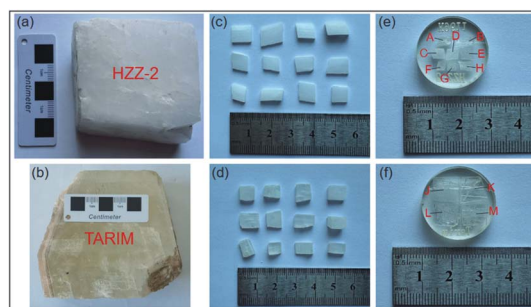
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Fundamental questions
Elemental answers

2296

Two potential natural calcite reference materials for laser *in situ* Sr isotope analysis

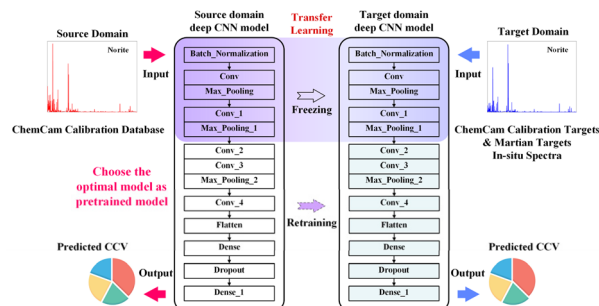
Hao-Jie Li, Zhi-Zhong Hu, Liang-Liang Zhang,*
Di-Cheng Zhu, Jin-Cheng Xie, Qing Wang, Wen-Tan Xu,
Li-Juan Xu, Wei Guo and Jian Wu



2306

Laser-induced breakdown spectroscopy chemometrics for ChemCam Mars *in situ* data analysis based on deep learning and pretrained-model-based transfer learning

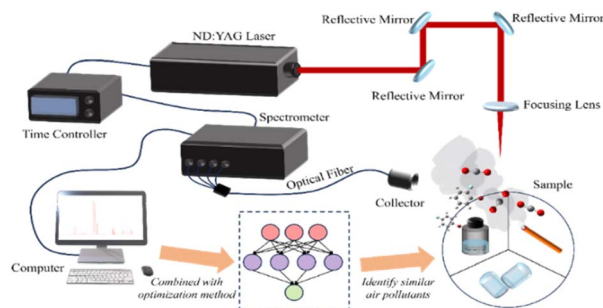
Zhicheng Cui, Luning Li,* Rong Shu, Fan Yang,
Yuwei Chen, Xuesen Xu, Jianyu Wang, Agnès Cousin,
Olivier Forni and Weiming Xu*



2327

Optimization of atmospheric pollutant detection and identification based on LIBS technology

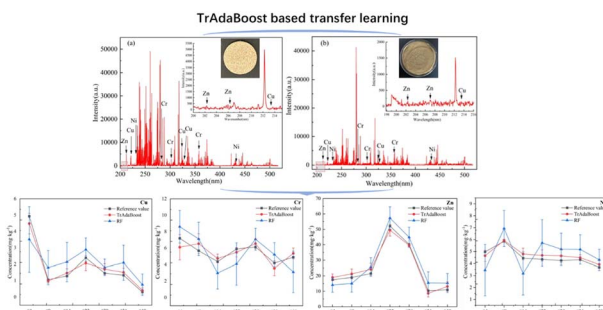
Zhuoyi Sun, Jun Feng, Wenhan Gao, Yanpeng Ye
and Yuzhu Liu*



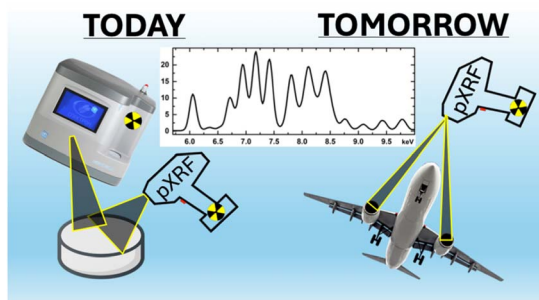
2338

LIBS combined with TrAdaBoost based transfer learning for quantitative analysis of heavy metals in soil particles

Maogang Li,* Kui Zhou, Mengfan Zhang, Xuedong Chen,
Chunhua Yan, Tianlong Zhang and Hua Li*



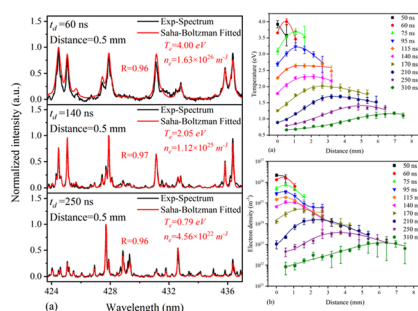
2352



Determination of rare-earth elements in medium- and high-entropy ceramics by WDXRF and handheld XRF. Critical evaluation of the need for deconvolution

Timur F. Akhmetzhanov,* Alexandra A. Arkhipenko, Mikhail A. Ryumin, Ilya A. Yakushev, Marina S. Doronina and Vasilisa B. Baranovskaya

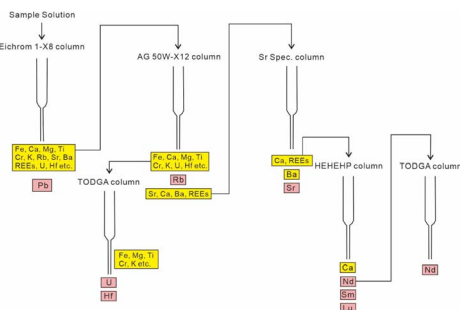
2362



Dynamics of laser-ablated molybdenum plasma in vacuum: a novel spectral matching algorithm based on Saha–Boltzmann equilibrium for n_e and T_e determination in fusion wall diagnostics

Xiaohan Hu, Huace Wu, Ding Wu,* Xinyue Wang, Shiming Liu, Ke Xu, Ran Hai, Cong Li, Chunlei Feng and Hongbin Ding*

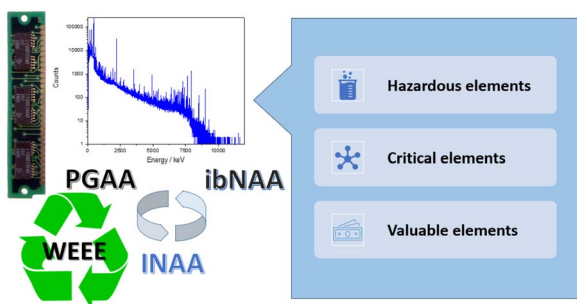
2373



A comprehensive chromatographic method for sequential separation of Pb, Rb, Sr, Nd, Sm, Lu, U, and Hf for high-precision isotope analysis of micro-sized silicate samples

Zhu-Yin Chu,* Yue-Heng Yang, Hong-Gang Zhu, Xu-Li Yang, Chao-Feng Li and Peng Peng

2385



Elemental composition analysis of electronic waste using neutron-based analytical techniques: a novel approach to assessing environmental and resource recovery potential

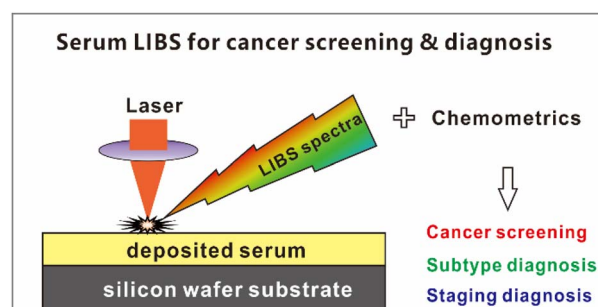
Noémi Anna Buczkó,* Boglárka Maróti, Katalin Gméling and László Szentmihályi



2397

Discrimination of subtypes and stages of non-Hodgkin lymphomas using serum laser-induced breakdown spectroscopy

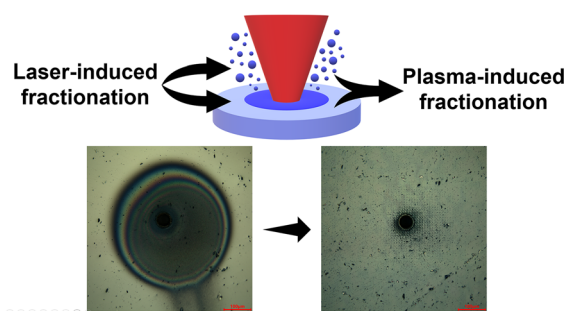
Xiaohui Li,* Xinxin Zhang, Xue Chen, Zihao Guo and Yumeng Yuan



2408

Evaluation of laser-induced and ICP-induced elemental fractionation using laser ablation-ICP-TOFMS

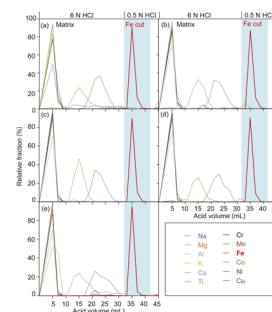
D. Käser, T. Van Acker, J. Koch, B. Hattendorf and D. Günther*



2418

High-precision Fe isotope analysis for low contents using a Nu Sapphire instrument

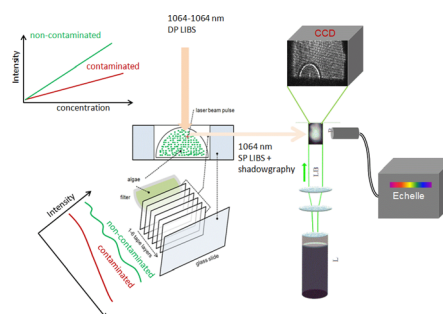
Kai Yang,* Hongfu Zhang,* Jinjun Zhou, Qiwen Ying, Shenghua Zhou, Yishan Cheng, Xiping Wei, Xiaoyan Gu, Qunke Xia and Jia Liu



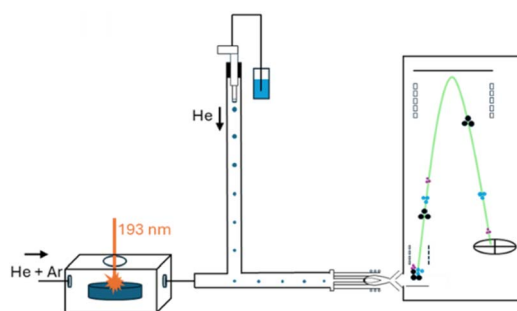
2426

Influence of sample matrix and filter fixation on LIBS signal in analysis of algae on filter

Aleš Hrdlička,* Jana Horská, Jitka Hegrová, Martina Bucková, David Prochazka, Jakub Buday, Pavel Pořízka, Viktor Kanický and Jozef Kaiser



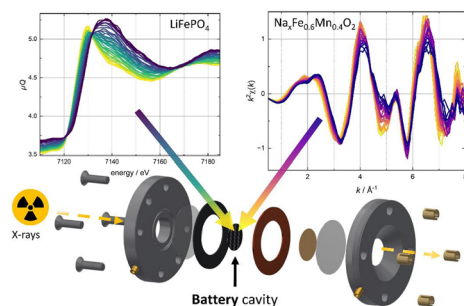
2438



Quantification of laser-induced aerosols by microdroplet calibration and investigation of matrix effects using LA-ICP-TOFMS

Tobias Schöberl, Mirjam Bachmann and Detlef Günther*

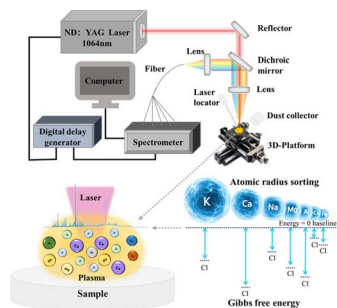
2447



Operando laboratory XAS on battery materials using the DANOISE cell in a von Hámos spectrometer

Sebastian Praetz,* Morten Johansen, Delf Kober, Marko Tesic, Christopher Schlesiger, Dorthe Bomholdt Ravensbæk and Birgit Kanngießer

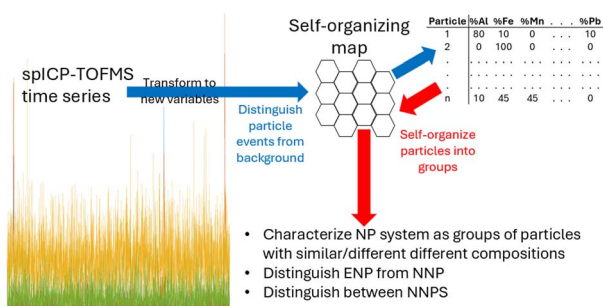
2462



High-precision quantification and low detection limits of chlorine and fluorine in coal via laser-induced breakdown spectroscopy

Yazi Wang, Xiaoning Yang, Wen Yi, Xiaodong Liu, Haohan Sun, Xinyu Zhang, Shuoyu Yang, Yongyi Du, Jiaqi Zhao, Yue Lv, Caihao Ding, Lixiang Zhong* and Ruibin Liu*

2471



Self-organizing maps for the detection and classification of natural nanoparticles, nanoparticle systems and engineered nanoparticles characterized using single particle ICP-time-of-flight-MS

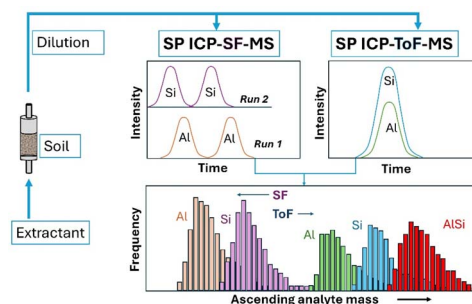
C. W. Cuss,* M. F. Benedetti, Carla Costamanga, Lucas Mesnard and M. Tharaud



2487

Single particle inductively coupled plasma mass spectrometry for the characterization of colloidal particles in soils, sediments and sludges: comparative study of sector field and time-of-flight instruments

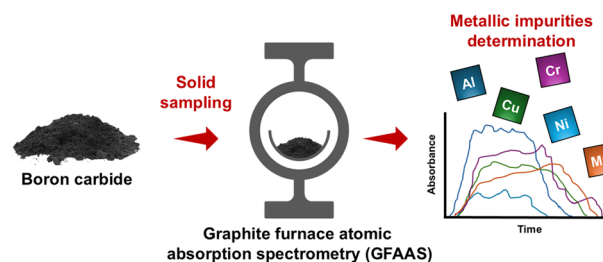
Zhizhong Li, Madjid Hadioui and Kevin J. Wilkinson*



2498

Analysis of high purity boron carbide by solid sampling graphite furnace atomic absorption spectrometry

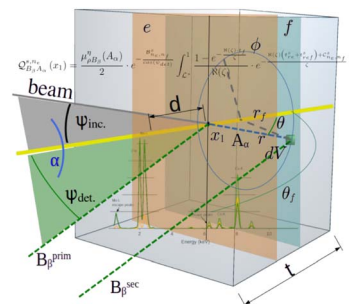
Edson I. Muller, Paola A. Mello, Thiago C. Pereira, Rodrigo C. Bolzan and Erico M. M. Flores*



2507

Multilayer target PIXE spectral simulation (X,X) secondary fluorescence correction algorithm

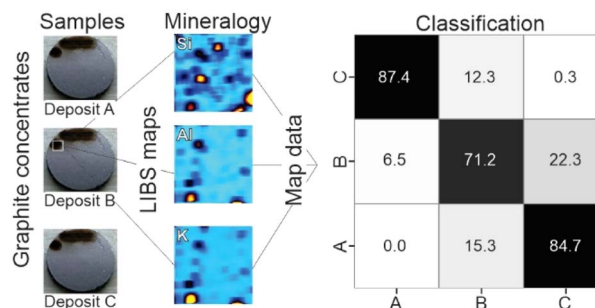
M. A. Reis



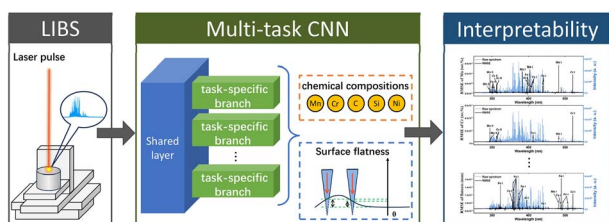
2526

Towards a chemical fingerprint of graphite by laser-induced breakdown spectroscopy

Róbert Arató,* Derrick Quarles, Jr, Gabriella Obbágy, Zsolt Dallos, Miklós Arató, Phillip Gopon and Frank Melcher



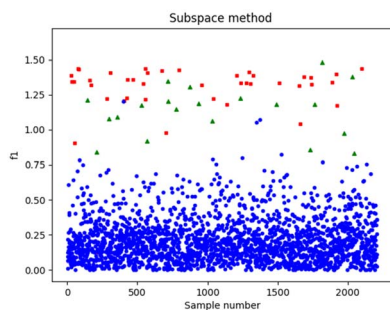
2538



Simultaneous analysis of the chemical composition and surface flatness of steel using laser-induced breakdown spectroscopy combined with a multi-task convolutional neural network

Jinrui Ye, Yaju Li, Zhao Zhang, Qiang Zeng, Yifan Wu, Xueqi Liu, Yanshi Zhang,* Dongbin Qian,* Zuoye Liu, Lei Yang, Shaofeng Zhang and Xinwen Ma

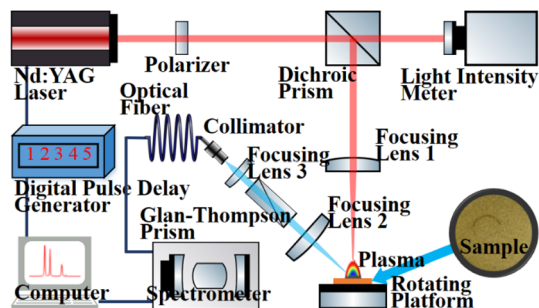
2548



Application of a local outlier detection algorithm based on high-dimensional subspaces in near-infrared spectroscopy

Jinfeng Zhang, Yuhua Qin,* Hao Zhang, Weiyao Hu and Xiaoli Bai

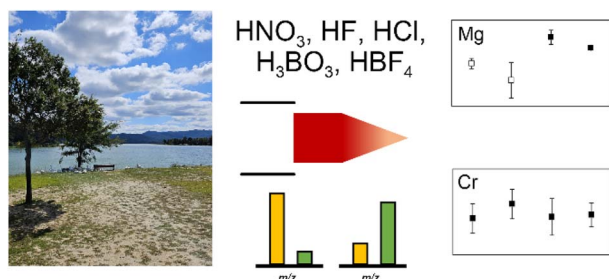
2556



Polarization-resolved LIBS for chromium quantification in soil: a novel chemometric model for matrix effect suppression and detection limit enhancement

Jiang Xu,* Xiao Wang, Mingyin Yao and Muhua Liu*

2562



Evaluation of microwave-assisted digestion methods for ID-ICP-MS characterization of KRISS lake sediment CRM 109-05-002

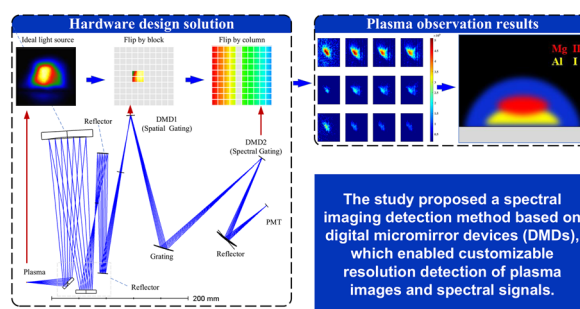
Jong Wha Lee,* Youngran Lim, Hana Cho and Sung Woo Heo



2573

Design and analysis of a spectral imaging detection instrument based on a digital micromirror device

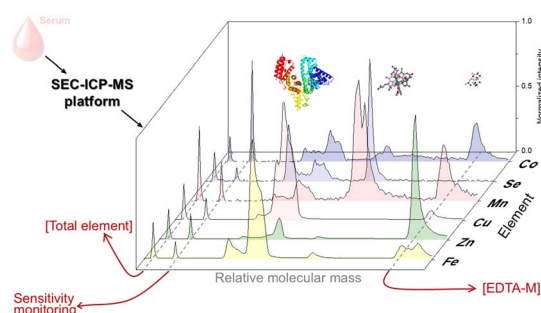
Tingwen Gu, Ziheng Xu, Zihan Wang, Junjie Huang, Guang Yang* and Chunsheng Li



2582

Development of a SEC-ICP-MS platform for multielement metalloprotein profiling and quantitation using a blood serum reference material

Georgia Panagou, Nikos Lydakis-Simantiris and Spiros A. Pergantis*

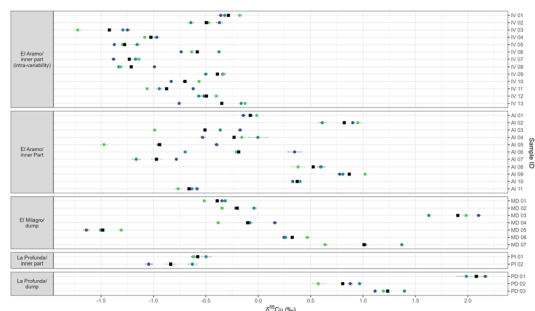


COMMENTS

2599

Comment on "Limitations in using the Cu isotopic composition of minerals from ancient copper mines for archaeometric purposes – a case study" by P. A. Penanes, M. Costas-Rodríguez, M. Moldovan, J. I. García Alonso and F. Vanhaecke, *J. Anal. At. Spectrom.*, 2023, 38, 1611

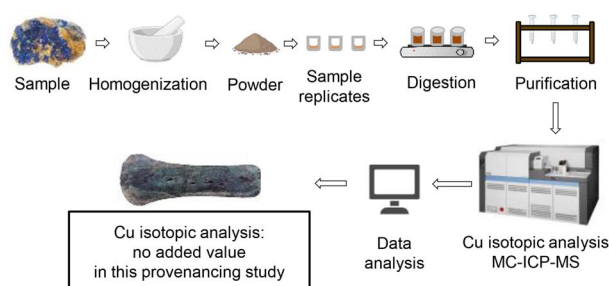
Thomas Rose,* Andreas Wittke and Sabine Klein



2604

Reply to the 'Comment on "Limitations in using the Cu isotopic composition of minerals from ancient copper mines for archaeometric purposes – a case study"' by T. Rose, A. Wittke and S. Klein, *J. Anal. At. Spectrom.*, 2025, 40, DOI: 10.1039/D4JA00260A

Pelayo Alvarez Penanes, Marta Costas-Rodríguez, Mariella Moldovan, Jose Ignacio García Alonso and Frank Vanhaecke*



CORRECTIONS

2608

Correction: Quantification of ferric iron content in minerals via the STEM-EELS-mapping method

Shan Li, Ke Wen, Yiping Yang, Xiaojun Lin, Yonghua Cao, Yao Xiao, Haiyang Xian,* Jianxi Zhu and Hongping He

2609

Correction: A novel *in situ* methodology for U–Pb, (U–Th)/He, and fission track triple dating

Jie Hu, Zhiwu Li,* Jinxi Li, Shugen Liu, Ganqing Xu, Chaoqun Yang, Kui Tong and Yin Li

