

ISSN 1004-4957

CODEN: FCXES

CN 44-1318/TH

中文核心期刊

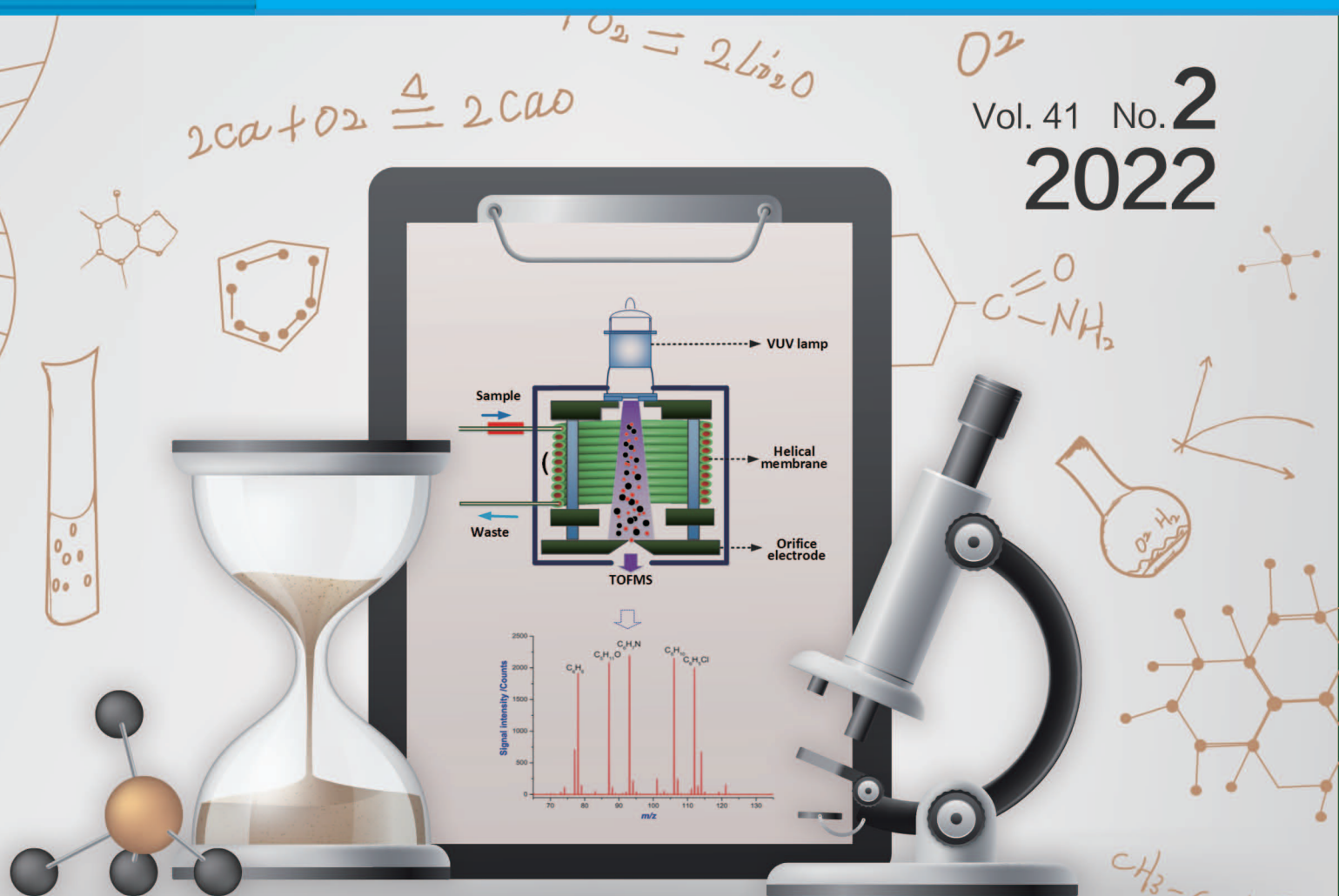
分析测试学报



FENXI CESHIXUEBAO

JOURNAL OF INSTRUMENTAL ANALYSIS

Vol. 41 No. 2
2022



ISSN 1004-4957



9 771004 495222



万方数据

中国广州分析测试中心 主办
中国分析测试协会



目 次

研究报告

- 149 基于超高效液相色谱-高分辨质谱的非靶向代谢组学技术结合化学计量学对信阳茶树品种差异的研究…………… 李淑芳, 刘继红, 尹海燕, 刘冬梅, 郭晓萌, 杨亚琴, 王会锋, 于永杰
- 156 离子印迹共价有机骨架材料对放射性铈的替代物—铈的吸附及应用…………… 何嘉铨, 刘洋洋, 朱德荣, 刘嘉伟, 李尹铮熙, 崔安琪, 叶俊彬, 郭晓忆, 孙 慧
- 164 基于掺杂金属有机骨架 CeDUT-52 分散固相萃取/高效液相色谱法检测水中的双酚类化合物…………… 郭丽因, 王雅慧, 闫 萌, 冀欠欠, 姜心瑶, 王曼曼, 王 茜, 郝玉兰
- 172 基于气相色谱-静电场轨道阱高分辨质谱法快速筛查和确证农产品中 222 种农药残留…………… 殷雪琰, 朱佳明, 堵燕钰, 王洁琼, 翟云忠
- 187 基于混合吸附剂磁性固相萃取/高效液相色谱-串联质谱法测定水中磺胺和喹诺酮类抗生素残留…………… 魏 丹, 张 菊, 国 明
- 196 全二维气相色谱-飞行时间质谱法测定汽油中 21 种抗爆添加剂…………… 刘一龙, 薛秋红, 管晓倩, 王凯歌, 冯真真, 周龙龙, 王群威
- 204 一步水热法制备氮掺杂碳点用于 Fe^{3+} 检测及细胞成像…………… 齐海燕, 黄德敏, 衣同辉, 刘立琨, 刘春彤
- 213 抗黄曲霉毒素 B_1 多价纳米抗体融合蛋白的构建及活性分析…………… 帅文苑, 何庆华, 钟引凤, 黄云祥, 张 航, 刘传勇, 张乐平, 涂 追
- 220 超高效液相色谱-串联质谱法测定化妆品中的 6 种镇痛类化学成分…………… 董亚蕾, 乔亚森, 黄传峰, 王海燕, 孙 磊
- 227 超高效液相色谱-串联质谱检测干血斑中 29 种 β_2 -受体激动剂…………… 赵 鹏, 常 靖, 吴小军, 董林沛, 刘冰洁, 张云峰
- 234 高温燃烧-水蒸气吸收-离子色谱法测定纺织品中的有机卤化物…………… 曹丽华, 丁友超, 张 秀, 顾从英, 周 佳, 钱 凯, 汤 娟

实验技术与方法

- 242 基于聚乙烯吡咯烷酮功能化磁性氧化石墨烯固相萃取鸡饲料中 Cu(II)、Zn(II)、Cr(III)、Cd(II) 和 Pb(II) 离子…………… 邱素艳, 俞熙仁, 董一帆, 魏益华, 黄 琴, 张大文

本期封面根据 283-289 页文章设计

分析测试学报

第 41 卷 第 2 期
2022 年 2 月 15 日出版
月刊, 1982 年创刊

刊名题字: 启功

主办单位: 中国广州分析测试中心
中国分析测试协会
主管单位: 广东省科学院

主 编: 陈小明
副主编: 庞国芳 江桂斌 吴惠勤(常务)
郑建国 王海水
编辑部主任: 龙秀芬

国际标准连续出版物号: ISSN 1004-4957
国内统一连续出版物号: CN44-1318/TH
CODEN: FCXES
发行范围: 国内外公开发行
总发行处: 广东省报刊发行局
邮发代号: 46-104
订购处: 全国各地邮局
定价: 60.00 元/册
国外总发行: 中国国际图书贸易总公司
国外发行代号: BM6013
广告经营许可证: 440000100186

编辑出版: 《分析测试学报》编辑部
地址: 广州市先烈中路 100 号(510070)
电话: 020-37656606, 87684776(传真)
E-mail: fxcxb@china.com
http://www.fxcxb.com
印刷: 广州市新齐彩印刷有限公司

责任编辑: 盛文彦 丁 岩 龙秀芬

- * 中文核心期刊
- * 中国分析测试协会会刊
- * 中国精品科技期刊
- * 广东省品牌期刊
- * 广东省优秀期刊
- * 广东省优秀科技期刊

- * 中国科技论文统计源期刊(中国科技核心期刊)
- * 《中国科学引文数据库》来源期刊
- * 《中国科技期刊数据库》来源期刊
- * 《中国学术期刊(光盘版)》收录期刊
- * 《中国期刊网》全文收录期刊
- * 《中国科技期刊精品数据库》收录期刊
- * 美国《化学文摘》(CA)收录期刊
- * 俄罗斯《文摘杂志》收录期刊
- * 日本科学技术社科学技术数据库收录期刊
- * 英国皇家化学学会《分析文摘》(AA)及《质谱》(MBS)系统摘录期刊
- * 荷兰《文摘与引文数据库》(Scopus)

目 次

- 249 羧基功能化磁性碳纳米管的制备及其对猪肉中瘦肉精的萃取
..... 连丽丽, 陈柏森, 邓艺辉, 王希越, 张凌赫, 姜大伟
- 255 一种通过水光谱探究木犀草素浓度测定的新方法
..... 冯昱龙, 贺小刚, 韩 想, 于佳萍, 楚刚辉
- 261 离心超滤/离子色谱-三重四极杆质谱法同时测定蔬菜中乙烯利和2,4-二氯苯氧乙酸 卢思佳, 杨瑞琴, 于素华, 王 勇
- 266 微气相色谱法分析氢氘同位素组分气体
..... 刘振兴, 杨洪广, 赵巍巍, 杨丽玲
- 271 超声提取辅助顶空式固相微萃取/气相色谱-质谱法测定塑胶跑道面层中7种挥发性硫化物 叶元坚, 郑 煜, 蔡锦安, 刘海燕, 卢家俊, 李晓增, 陈伟力
- 276 公共安全视域下精神药物光谱学无损分类
..... 李佳瑞, 王继芬, 刘津彤

综 述

- 283 膜进样质谱技术及其应用 王卫国, 黄 卫, 阮慧文, 徐楚婷, 杨俊超, 李 斌, 李海洋
- 290 内滤效应设计对非制式爆炸物高锰酸钾检测性能提升策略研究进展
..... 万知欣, 蔡珍珍, 窦新存

广告目录

分析测试学报广告(封二) 华南标准物质网 中国广州分析测试中心科力公司(插页1) 北京海光仪器有限公司(封三) 上海兰博贸易有限公司(封底)

Journal of Instrumental Analysis

Vol. 41, No. 2

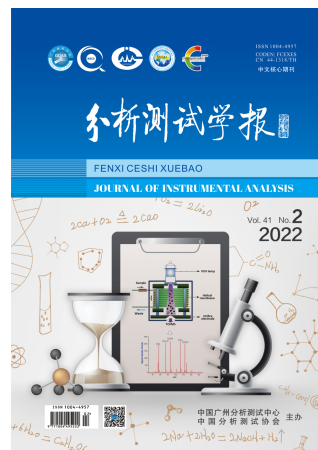
Feb. 15, 2022

Sponsored by China National Analysis Center, Guangzhou
and China Association for Instrumental Analysis

Editor-in-chief: CHEN Xiao-ming

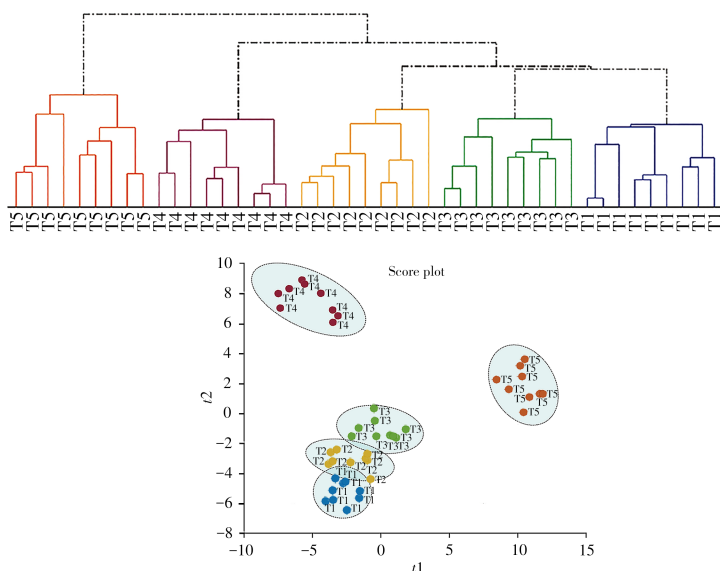
Edited & published by the editorial office of Journal of Instrumental Analysis

(E-mail: fxcxb@china.com, http://www.fxcxb.com)



Contents

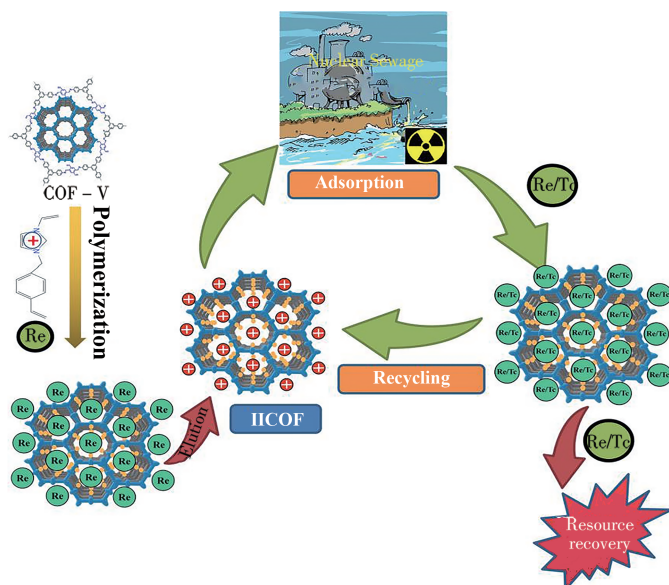
Scientific Papers



Study on Difference of Tea Cultivars Planted in Xinyang by Non-targeted Metabolomics with Chemometrics Based on Ultrahigh Performance Liquid Chromatography – High Resolution Mass Spectrometry

LI Shu-fang, LIU Ji-hong, YIN Hai-yan, LIU Dong-mei, GUO Xiao-meng, YANG Ya-qin, WANG Hui-feng, YU Yong-jie

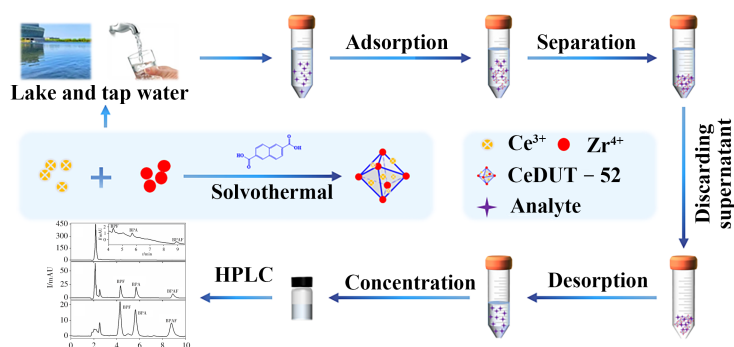
J. Instrum. Anal., **2022**, 41(2): 149 – 155.
doi: 10.19969/j.fxcxb.21061201



Application of Ion Imprinted Covalent Organic Framework in the Adsorption of Rhenium as a Substitute for Technetium

HE Jia-hua, LIU Yang-yang, ZHU De-rong, LIU Jia-wei, LI YIN Zheng-xi, CUI An-qi, YE Jun-bin, WU Xiao-yi, SUN Hui

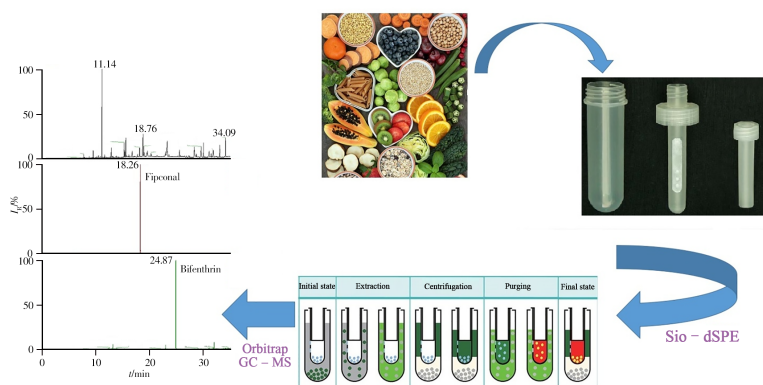
J. Instrum. Anal., **2022**, 41(2): 156 – 163.
doi: 10.19969/j.fxcxb.21042303



Detection of Bisphenols Compounds in Water by High Performance Liquid Chromatography with Dispersive Solid Phase Extraction Based on Ce-Doped DUT-52 Metal Organic Framework

GUO Li-nan, WANG Ya-hui, YAN Meng, JI Qian-qian, JIANG Xin-yao, WANG Man-man, WANG Qian, HAO Yu-lan

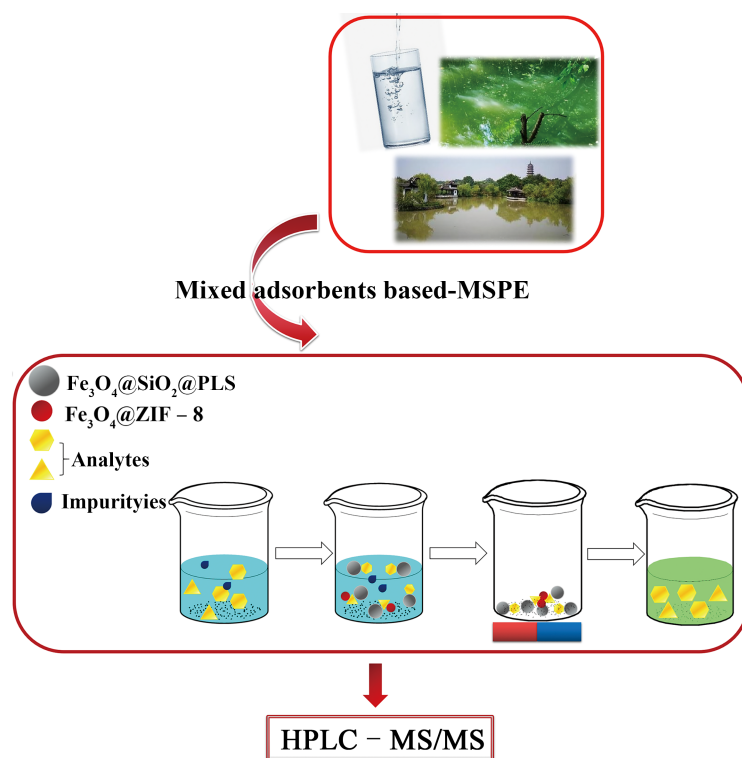
J. Instrum. Anal., **2022**, 41(2): 164 – 171.
doi: 10.19969/j.fxcxb.21052102



Rapid Screening and Confirmation of 222 Pesticide Residues in Agricultural Products by Gas Chromatography – Electrostatic Field Orbitrap High Resolution Mass Spectrometry

YIN Xue-yan, ZHU Jia-ming, DU Yan-yu, WANG Jie-qiong, ZHAI Yun-zhong

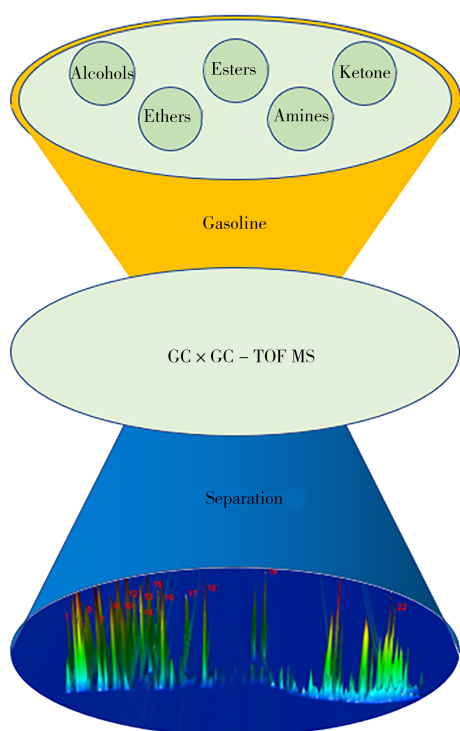
J. Instrum. Anal., **2022**, 41(2): 172 – 186.
doi: 10.19969/j.fxcxb.21052101



Determination of Sulfonamides and Quinolones Antibiotics Residues in Water Samples by High Performance Liquid Chromatography – Tandem Mass Spectrometry with Mixed Adsorbents Based Magnetic Solid Phase Extraction

WEI Dan, ZHANG Ju, GUO Ming

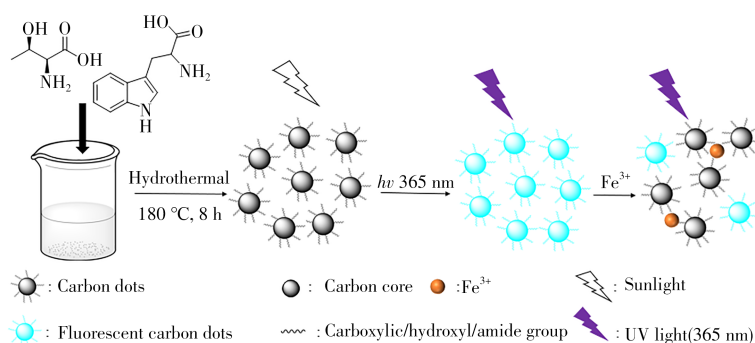
J. Instrum. Anal., **2022**, 41(2): 187 – 195.
doi: 10.19969/j.fxcxb.21042402



Analysis of 21 Antiknock Additives in Gasoline by Comprehensive Two-dimensional Gas Chromatography – Time-of-flight Mass Spectrometry

LIU Yi-long, XUE Qiu-hong, GUAN Xiao-qian, WANG Kai-ge, FENG Zhen-zhen, ZHOU Long-long, WANG Qun-wei

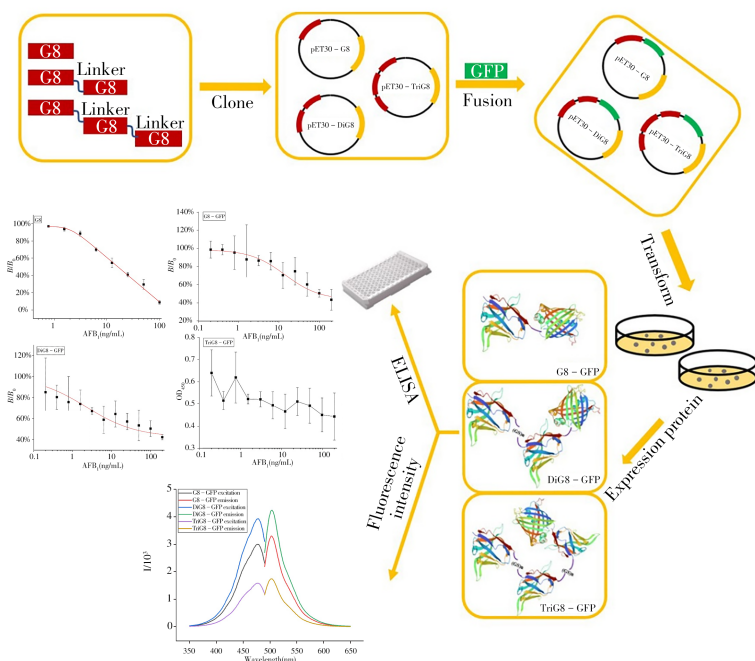
J. Instrum. Anal., **2021**, 41(2): 196 – 203.
doi: 10.19969/j.fxcxb.21063001



One-step Hydrothermal Synthesis of Nitrogen-doped Carbon Dots for Fe³⁺ Detection and Their Application in Cellular Imaging

QI Hai-yan, HUANG De-min, YI Tong-hui, LIU Li-kun, LIU Chun-tong

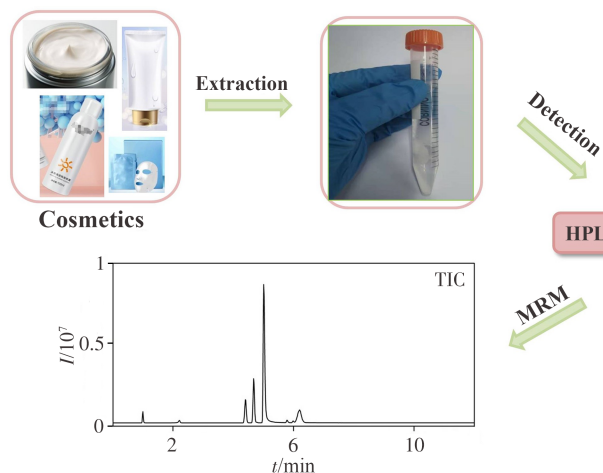
J. Instrum. Anal., **2022**, 41(2): 204 – 212.
doi: 10.19969/j.fxcxb.21070201



Construction and Bioactivity Analysis of Fusion Protein of Polyvalent Anti-aflatoxin B₁ Nanobody

SHUAI Wen-yuan, HE Qing-hua, ZHONG Yin-feng, HUANG Yun-xiang, ZHANG Hang, LIU Chuan-yong, ZHANG Le-ping, TU Zhui

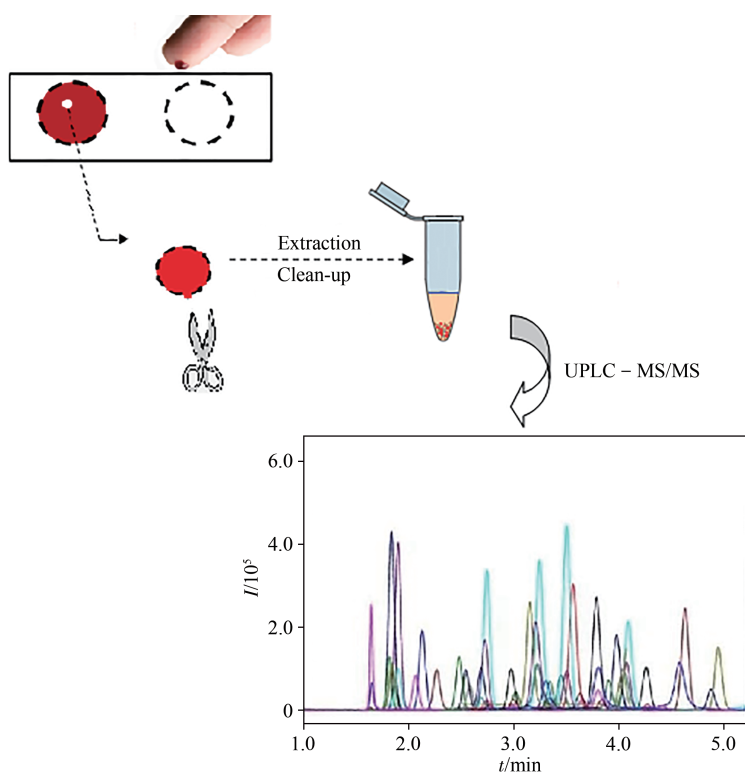
J. Instrum. Anal., **2022**, 41(2): 213 – 219.
doi: 10.19969/j.fxcxb.21040704



Determination of 6 Analgesic Drugs in Cosmetics by Ultra-high Performance Liquid Chromatography – Tandem Mass Spectrometry

DONG Ya-lei, QIAO Ya-sen, HUANG Chuan-feng, WANG Hai-yan, SUN Lei

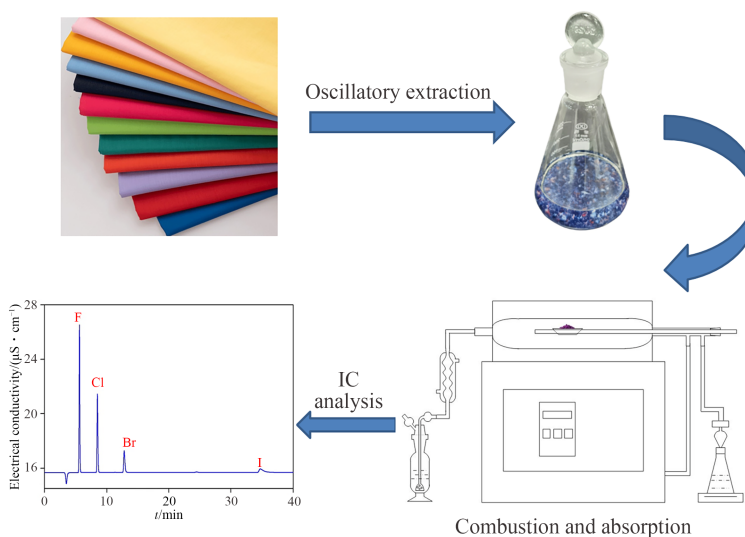
J. Instrum. Anal., **2022**, 41(2): 220 – 226.
doi: 10.19969/j.fxcxb.21042902



Determination of 29 β_2 -agonists in Dried Blood Spots by Ultra-high Performance Liquid Chromatography – Tandem Mass Spectrometry

ZHAO Peng, CHANG Jing, WU Xiao-jun, DONG Lin-pei, LIU Bing-jie, ZHANG Yun-feng

J. Instrum. Anal., **2022**, 41(2): 227 – 233.
doi: 10.19969/j.fxcxb.21040103

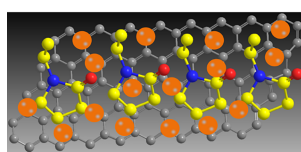
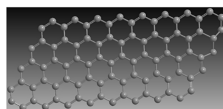


Determination of Organic Halides in Textiles by Ion Chromatography Method with High Temperature Combustion and Water Vapor Absorption

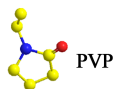
CAO Li-hua, DING You-chao, ZHANG Xiu, GU Cong-ying, ZHOU Jia, QIAN Kai, TANG Juan

J. Instrum. Anal., **2022**, 41(2): 234 – 241.
doi: 10.19969/j.fxcxb.21031205

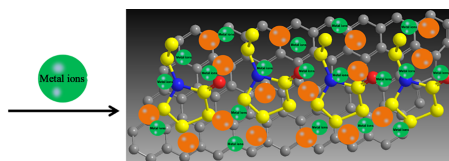
Experimental Techniques and Methods

PVP/Fe₃O₄/GO

GO

Fe₃O₄

PVP

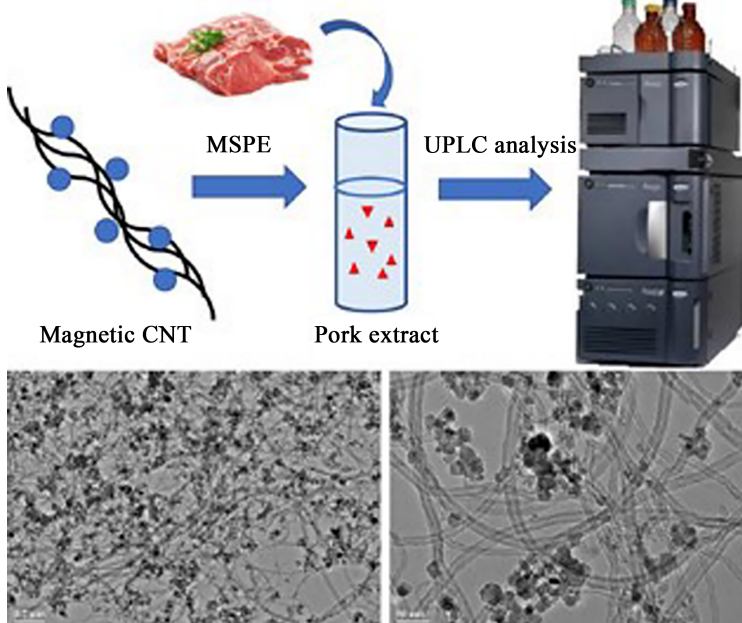


Solid-phase Extraction of Cu (II), Zn (II), Cr (III), Cd (II) and Pb (II) Ions in Chicken Feed Based on Polyvinylpyrrolidone Functionalized Magnetic Graphene Oxide

QIU Su-yan, YU Xi-ren, DONG Yi-fan, WEI Yi-hua, HUANG Qin, ZHANG Da-wen

J. Instrum. Anal. , **2022**, 41(2): 242 – 248.

doi: 10.19969/j.fxcxb.21050603

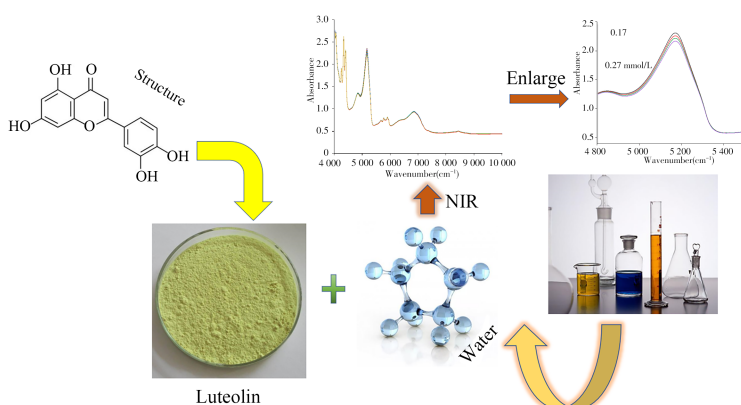


Synthesis of a Carboxyl-functionalized Magnetic Carbon Nanotube and Its Extraction for Clenbuterol in Pork Samples

LIAN Li-li, CHEN Bai-sen, DENG Yi-hui, WANG Xi-yue, ZHANG Ling-he, LOU Da-wei

J. Instrum. Anal. , **2022**, 41(2): 249 – 254.

doi: 10.19969/j.fxcxb.21051803

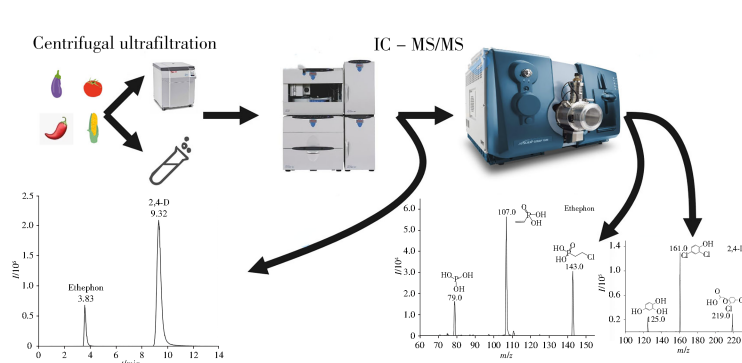


Study on a New Method for Determination of Luteolin Concentration through Water Spectra

FENG Yu-long, HE Xiao-gang, HAN Xiang, YU Jia-ping, CHU Gang-hui

J. Instrum. Anal. , **2022**, 41(2): 255 – 260.

doi: 10.19969/j.fxcxb.21030409

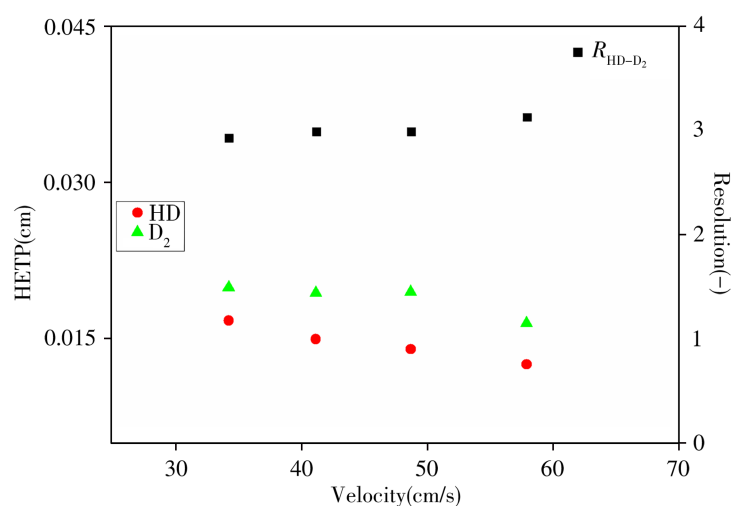


Simultaneous Determination of Ethephon and 2,4-Dichlorophenoxy-Acetic Acid in Vegetables by Centrifugal Ultrafiltration/Ion Chromatography-Triple Quadrupole Mass Spectrometry

LU Si-jia, YANG Rui-qin, YU Su-hua, WANG Yong

J. Instrum. Anal., **2022**, 41(2): 261-265.

doi: 10.19969/j.fxcxb.21062801

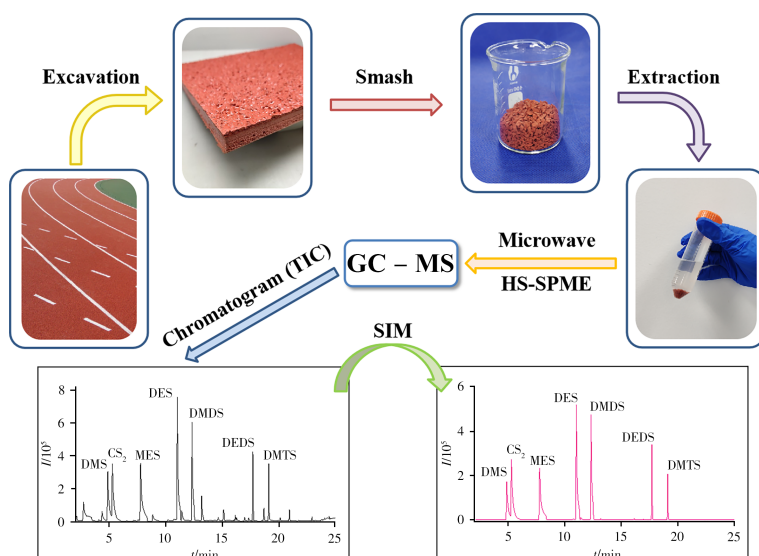


Analysis of Hydrogen Deuterium Components by Micro Gas Chromatography

LIU Zhen-xing, YANG Hong-guang, ZHAO Wei-wei, YANG Li-ling

J. Instrum. Anal., **2022**, 41(2): 266-270.

doi: 10.19969/j.fxcxb.21040601

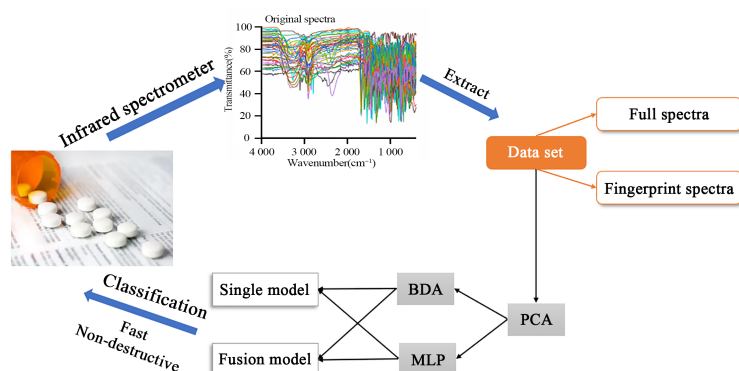


Detection of 7 Volatile Sulfur Compounds in Plastic Track Surface by Ultrasonic Extraction-HS-SPME/GC-MS Technique

YE Yuan-jian, ZHENG Yu, CAI Jin-an, LIU Hai-yan, LU Jia-jun, LI Xiao-zeng, CHEN Wei-li

J. Instrum. Anal., **2022**, 41(2): 271-275.

doi: 10.19969/j.fxcxb.21050501



Non-destructive Classification of Psychotropic Drugs Based on Spectroscopy from the Perspective of Public Security

LI Jia-rui, WANG Ji-fen, LIU Jin-tong

J. Instrum. Anal., **2022**, 41(2): 276 – 282.

doi: 10.19969/j.fxcxb.21042601

Reviews

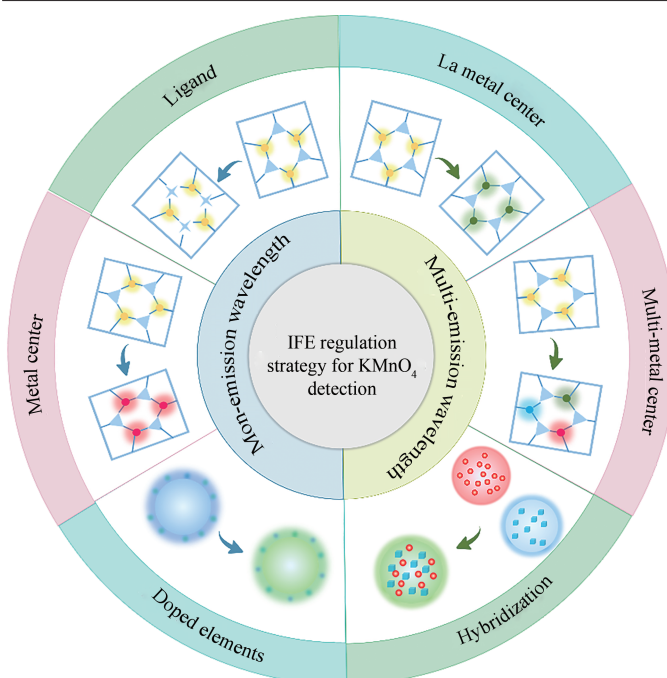


Membrane Inlet Mass Spectrometry Techniques and Their Applications

WANG Wei-guo, HUANG Wei, RUAN Hui-wen,
XU Chu-ting, YANG Jun-chao, LI Bin, LI Hai-
yang

J. Instrum. Anal., **2022**, 41(2): 283 – 289.

doi: 10.19969/j.fxcxb.21050702



Recent Progress in Sensing Performance Improvement Strategy Design via Inner Filter Effect for Improvised Explosive Potassium Permanganate Detection

WAN Zhi-xin, CAI Zhen-zhen, DOU Xin-cun

J. Instrum. Anal., **2022**, 41(2): 290 – 298.

doi: 10.19969/j.fxcxb.21051001