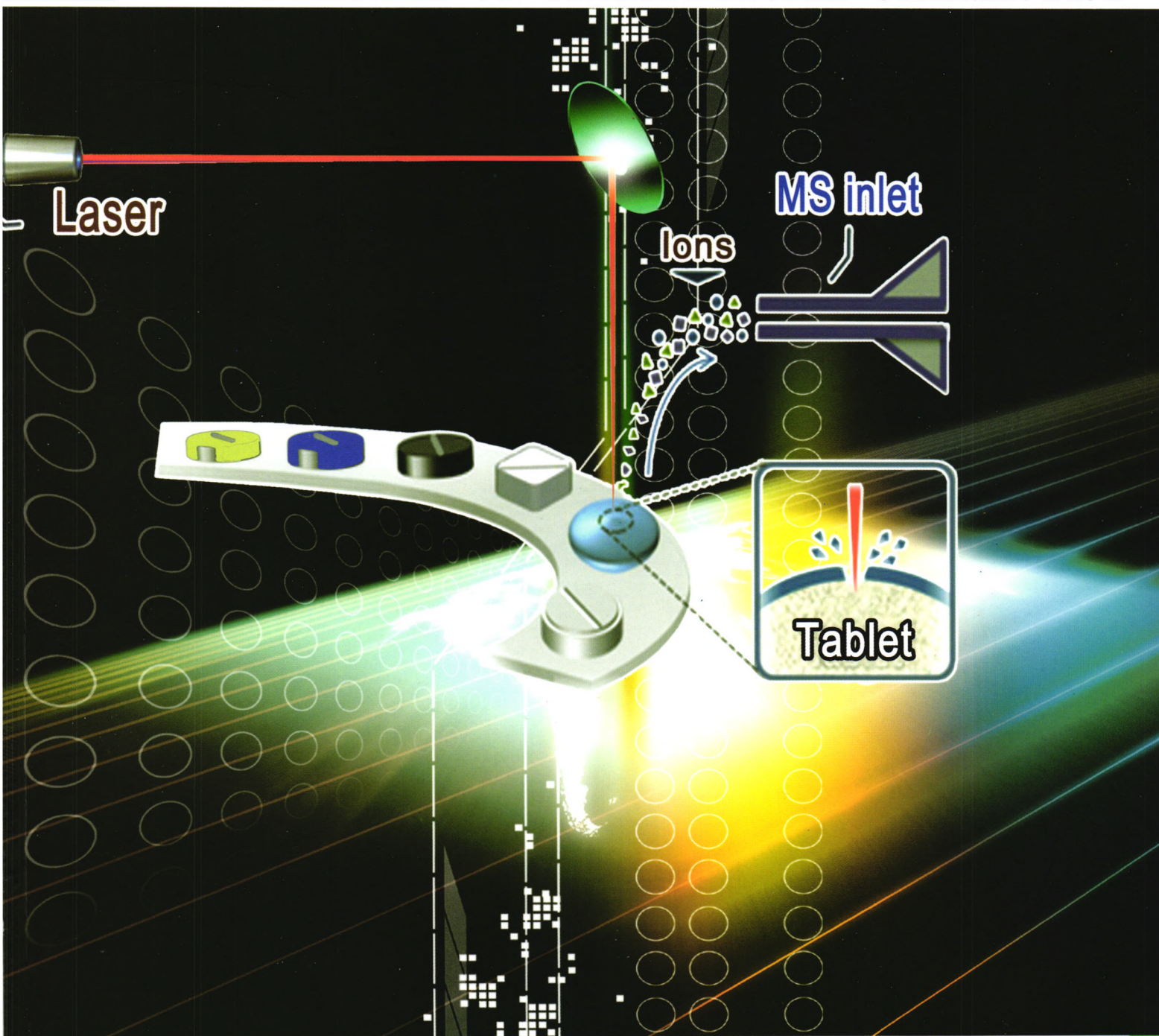


分析化学

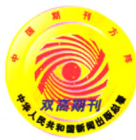
No.3 Vol.41

2013.3

CHINESE JOURNAL OF ANALYTICAL CHEMISTRY



中国化学会 主办
中国科学院长春应用化学研究所 出版
科学出版社



分析化学

第41卷第3期 2013年3月

目次

特 约 来 稿

- 吸头小柱微萃取-解吸电晕束电离质谱用于快速分析体液中的降压药物
..... 游金清 郝艳红 黄云清 程玉鹏 孙文剑 余琮卫 袁必锋 冯钰铸* (319)
- 基于荧光标记核酸探针及核酸染料 SYBR Green I 定量检测单链 DNA
..... 郑爱华 朱庆 向东山 何治柯* (325)
- ★NaYF₄:Yb,Er 纳米粒子作为过氧化物模拟酶用于尿酸检测 ... 唐雨榕 张玉 刘睿 苏颖颖 吕弋* (330)

研 究 报 告

- ★中空纤维脂质体微筛选及其用于中药中香豆素类和木脂素类可透膜成分群的筛选和捕获
..... 李利华 薛雪 彭超 白小红* (337)
- 基于液相色谱-串联质谱的氨基酸代谢组学方法研究黄芪注射液治疗脑缺血
..... 吴宏伟 高健 李韶菁 唐力英 许海玉 唐仕欢 杨洪军* (344)
- ★芯片纳流动注射-等离子体质谱测定血浆中的铂 吴春玲 程和勇* 刘金华 徐子刚* 殷学锋
分散固相萃取-液相色谱-串联质谱法测定水果中 19 种酸性农药
..... 金芬 史晓梅 于志勇 李敏洁 邵华 金茂俊 王静* (354)
- 基于天然气敏材料猪肉中优势腐败菌的可视化检测 黄晓玮 赵杰文 石吉勇 黄林 邹小波* (360)
- ★大气压激光解吸附离子化质谱技术用于药片有效成分的快速实时分析
..... 任昕昕 刘佳 张成森 罗海* (366)
- 尿液代谢组学方法研究人参总皂苷治疗糖尿病心肌病大鼠作用机制
..... 谷金宁 牛俊 皮子凤 赵皓 吴绥生* 刘淑莹* (371)
- 基于芘荧光行为的表面活性剂胶束及其与酶缔合作用研究
..... 梁运姍* 袁兴中 曾光明 牛承岗 王伟伟 孙婷 韩增辉 (377)
- 高效液相色谱法同时测定滁菊样品中的 9 种酚酸
..... 谢越 俞浩 汪建飞* 张祖亮 陈世勇 肖新 李孝良 (383)
- 超高效液相色谱法测定饲料中苯乙醇胺 A 王瑞国 苏晓鸥* 王培龙 李 阳 樊宇飞 (389)
- 固相萃取-超快速液相色谱-串联质谱法同时测定化妆品中 9 种抗过敏药物残留
..... 王燕芹* 车文军 王莉 徐春祥 卢剑 (394)
- 阳离子交换毛细管整体柱的制备及其在毛细管离子色谱中的应用 李晶 朱岩* (400)
- 基于新型硼酸固相萃取柱的多巴胺色谱分析方法 段语晖 卫引茂* (406)

研 究 简 报

- 气相色谱法测定海洋沉积物中十氯酮残留 王艳洁 那广水 王震 姚子伟* (412)
- 石墨烯/二氧化钛复合材料富集-石墨炉原子吸收光谱法测定铅和镉
..... 谷晓稳 吕学举 贾琼* 周伟红 刘云凌 (417)
- 固相萃取-气相色谱/质谱联用法同时检测水体中 9 种环境雌激素
..... 廖涛 吴晓翠 王少华 谢松光 熊光权 耿胜荣 李新 钮晓艳 胡筱波* (422)

基于铂镍铁金属纳米花颗粒/碳纳米片复合材料的克伦特罗电化学传感器的研制
..... 冯亚娟 牛司朋 符雪文 赵锦航 杨云慧* (427)

双[2,4,6-三氯苯基]草酸酯-过氧化氢体系流动注射化学发光法检测地沟油中的胆固醇
..... 肖虎勇 陈佳 魏国芬 胡芹芹 艾永青 韩韵 周兴旺 吕鉴泉* (432)

评述与进展

★光致电化学分析及其传感器的研究进展 张兆霞 赵常志* (436)

★聚乙二醇表面改性抑制蛋白质非特异性吸附 肖锡峰 江小群 周雷激* (445)

仪器装置与实验技术

基于负温度系数热敏电阻的催化燃烧型一氧化碳传感器 黄彩霞 高国强* (454)

一种敞开式离子聚焦装置的研制及其检测方法研究 刘坤* 王晓浩 唐飞 (459)

本刊“研究快报”征稿启事(426)

会议消息

“第十四届国际电分析化学会议”的通知(329)

书刊征订

《界面膜原理与应用》(353)、《液-液萃取》(365)、《配位化学》(376)、《中药材高效液相色谱检定:〈中华人民共和国药典〉(2010年版)收载品种对应方法集》(388)、《表面活性剂、胶体与界面化学基础》(405)、《天然糖化学_测试2》(416)、《色谱在材料分析中的应用》(431)

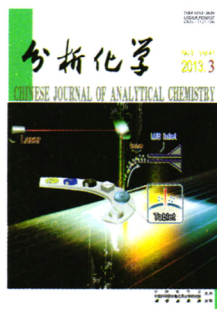
广告目录

通用电气(中国)医疗集团生命科学部(封二) 岛津国际贸易(上海)有限公司(文前1) 岛津国际贸易(上海)有限公司(文前2) 岛津技迹(上海)商贸有限公司(文前3) 飞世尔实验器材(上海)有限公司(文前4) 成都超纯科技有限公司(文前5) 大连依利特分析仪器有限公司(文前6) 安捷伦科技有限公司(文前7) 安捷伦科技有限公司(文前8) 订阅《分析化学》(文前9) 北京浩天晖科贸有限公司(文前10) 北京浩天晖科贸有限公司(文前11) 信息仪器网(文前12) 订阅《分析化学》(文前13) 上海伍丰科学仪器有限公司(目录前14) 赛默飞世尔科技(中国)有限公司(中插1) 赛默飞世尔科技(中国)有限公司(中插2) 德国耶拿分析仪器股份公司(中插3) 北京氮普北分气体工业有限公司(中插4) 北京氮普北分气体工业有限公司(中插5) 北京莱伯泰科仪器有限公司(中插6) 山东禹王实业有限公司(文后1) 北京海光仪器公司(封三) 北京吉天仪器有限公司(封底)

(本期责任编辑:罗虎璋 编排、制图:潘文革)

* 联系人

★ 该文章的英文电子版由 Elsevier 出版社在 ScienceDirect 上出版(<http://www.sciencedirect.com/science/journal/18722040>)



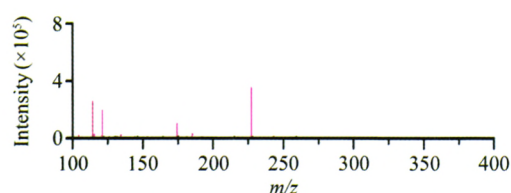
The cover image presents the schematic diagram of atmospheric pressure laser desorption/ionization mass spectrometry (APLDI-MS). On page 366, REN et al demonstrate a method for fast and direct screening of active ingredients in drug tablets.

Invited Papers

Coupling Micropipette Tip-based Micro-extraction with Desorption Corona Beam Ionization Mass Spectrometry for Rapid Analysis of Anti-hypertensive Drugs in Body Fluid

YOU Jin-Qing, HAO Yan-Hong, Huang Yun-Qing, CHENG Yu-Peng, SUN Wen-Jian, YU Qiong-Wei, YUAN Bi-Feng, FENG Yu-Qi*

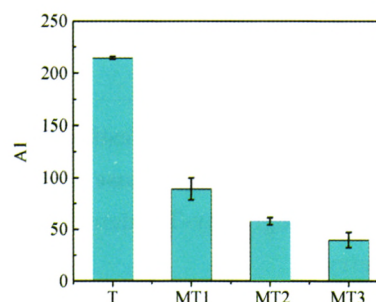
Chinese J. Anal. Chem., 2013, 41(3): 319-324



Quantitative Determination of Sequence-specific Nucleic Acid Based on Fluorescent Labeled DNA Probe and Dye SYBR Green I

ZHENG Ai-Hua, ZHU Qing, XIANG Dong-Shan, HE Zhi-Ke*

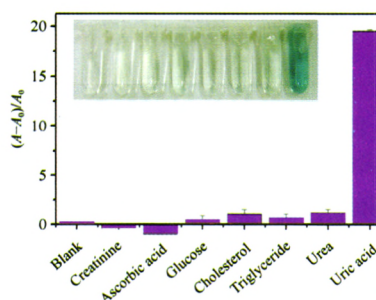
Chinese J. Anal. Chem., 2013, 41(3): 325-329



★ Application of NaYF₄:Yb,Er Nanoparticles as Peroxidase Mimetics in Uric Acid Detection

TANG Yu-Rong, ZHANG Yu, LIU Rui, SU Ying-Ying, LÜ Yi*

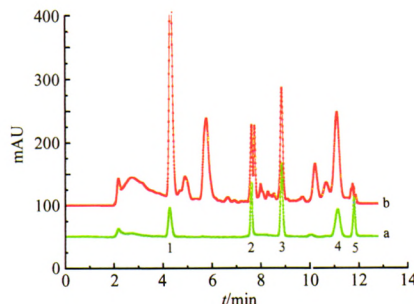
Chinese J. Anal. Chem., 2013, 41(3): 330-336



★ **Hollow Fiber Liposome Microscreening and Its Application in Screening and Fishing Membrane Permeation Ingredient of Coumarins and Lignans in Traditional Chinese Medicine**

LI Li-Hua, XUE Xue, PENG Chao,
BAI Xiao-Hong*

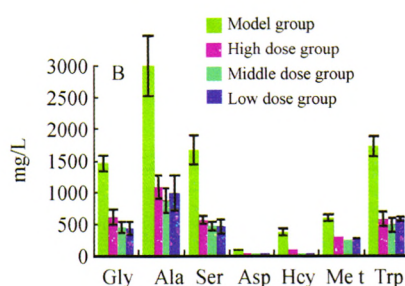
Chinese J. Anal. Chem., 2013, 41(3): 337–343



Study on Blood Amino Acid Metabonomics of Cerebral Ischemia Treated by Huangqi Injection Based on HPLC-MS/MS

WU Hong-Wei, GAO Jian, LI Shao-Jing,
TANG Li-Ying, XU Hai-Yu, TANG Shi-Huan,
YANG Hong-Jun*

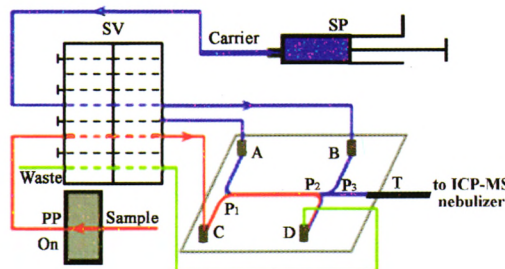
Chinese J. Anal. Chem., 2013, 41(3): 344–348



★ **Determination of Platinum in Human Plasma by Microchip-based Nanoflow Injection and Inductively Coupled Plasma Mass Spectrometry**

WU Chun-Ling, CHENG He-Yong*, LIU Jin-Hua,
XU Zi-Gang*, YIN Xue-Feng

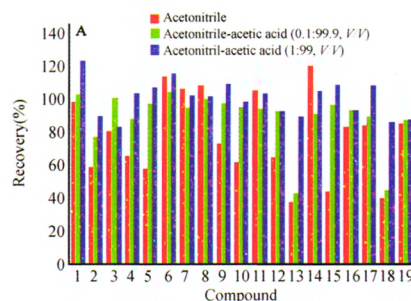
Chinese J. Anal. Chem., 2013, 41(3): 349–353



Determination of 19 Acidic Pesticide Residues in Fruit by Dispersive Solid Phase Extraction and Liquid Chromatography-Tandem Mass Spectrometry

JIN Fen, SHI Xiao-Mei, YU Zhi-Yong, LI Min-Jie,
SHAO Hua, JIN Mao-Jun, WANG Jing*

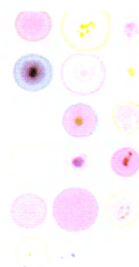
Chinese J. Anal. Chem., 2013, 41(3): 354–359



Research on Discrimination of Dominant Spoilage Bacteria in Pork Based on Natural Gas-Sensing Material

HUANG Xiao-Wei, ZHAO Jie-Wen, SHI Ji-Yong,
HUANG Lin, ZOU Xiao-Bo*

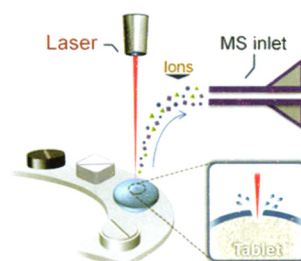
Chinese J. Anal. Chem., 2013, 41(3): 360–365



★ **Rapid and Direct Analysis of Active Ingredients in Tablets Using Atmospheric Pressure Laser Desorption Ionization Mass Spectrometry**

REN Xin-Xin, LIU Jia, ZHANG Cheng-Sen, LUO Hai *

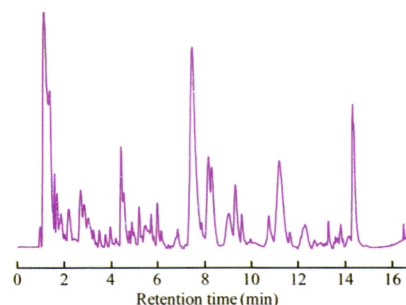
Chinese J. Anal. Chem., 2013, 41(3): 366–370



A Urinary Metabonomics Research on Total Ginsenoside Treated Diabetes Cardiomyopathy Rats Based on Rapid Resolution Liquid Chromatography/Mass Spectrometry

GU Jin-Ning, NIU Jun, PI Zi-Feng, YUE Hao, WU Sui-Sheng *, LIU Shu-Ying *

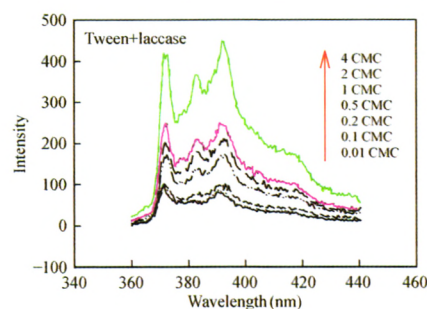
Chinese J. Anal. Chem., 2013, 41(3): 371–376



Analysis of Surfactant Micellers and Their Interaction with Enzymes by Fluorescence of Pyrene

LIANG Yun-Shan *, YUAN Xing-Zhong, ZENG Guang-Ming, NIU Cheng-Gang, WANG Wei-Wei, SUN Ting, HAN Zeng-Hui

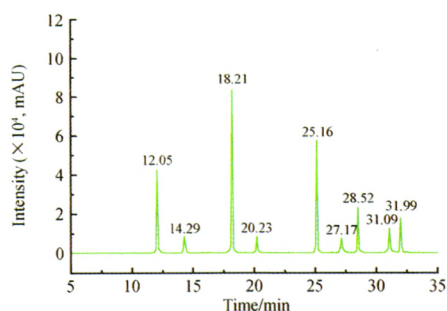
Chinese J. Anal. Chem., 2013, 41(3): 377–382



Simultaneous Determination of Nine Phenolic Acids in *Dendranthema Morifolium* (Ramat) Tzvel. cv. Chuju Samples by High Performance Liquid chromatography

XIE Yue, YU Hao, WANG Jian-Fei *, ZHANG Zu-Liang, CHEN Shi-Yong, XIAO Xin, LI Xiao-Liang

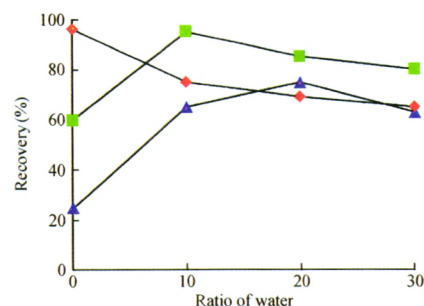
Chinese J. Anal. Chem., 2013, 41(3): 383–388



Determination of Phenylethanolamine A in Animal Feeds Using Ultra High Performance Liquid Chromatography-Photodiode Array Detector

WANG Rui-Guo, SU Xiao-Ou *, WANG Pei-Long, LI Yang, FAN Yu-Fei

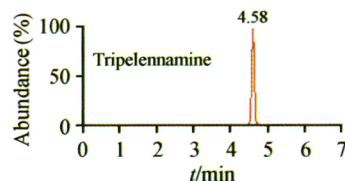
Chinese J. Anal. Chem., 2013, 41(3): 389–393



**Determination of Nine Anti-allergy Drugs
Residue in Cosmetics by Solid Phase Extraction-
Rapid Resolution Liquid Chromatography
Tandem Mass Spectrometry**

WANG Yan-Qin*, CHE Wen-Jun, WANG Li,
XU Chun-Xiang, LU Jian

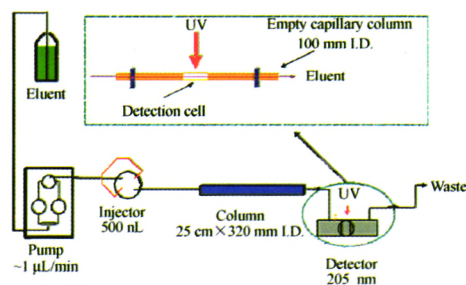
Chinese J. Anal. Chem., 2013, 41(3): 394–399



**Preparation and Application of Cation-exchange
Capillary Monolithic Column in Capillary Ion
Chromatography**

LI Jing, ZHU Yan*

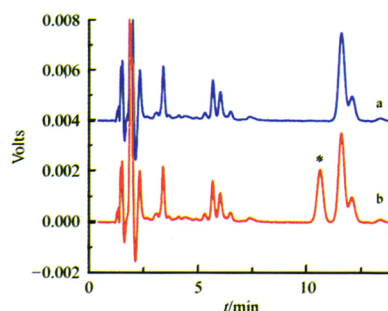
Chinese J. Anal. Chem., 2013, 41(3): 400–405



**Solid Phase Extraction by Boric Acid-Functional-
ized Silica for Determination of Dopamine with
High Performance Liquid Chromatography**

DUAN Yu-Hui, WEI Yin-Mao*

Chinese J. Anal. Chem., 2013, 41(3): 406–411

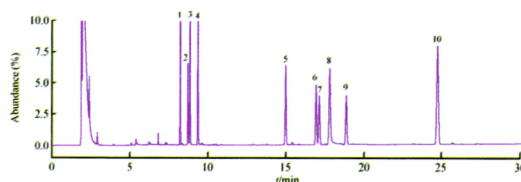


Research Notes

**Determinaton of Kepone in Marine Sediment by
Gas Chromatorgraphy**

WANG Yan-Jie, NA Guang-Shui, WANG Zhen,
YAO Zi-Wei*

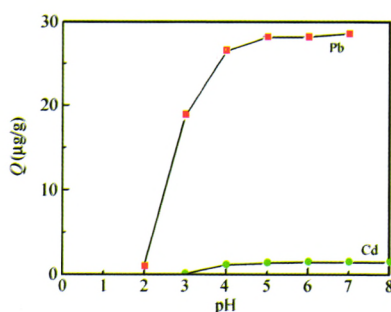
Chinese J. Anal. Chem., 2013, 41(3): 412–416



**Determination of Pb(II) and Cd(II) by Graphite
Furnace Atomic Absorption Spectrometry after
Preconcentration with Graphene-Titanium
Dioxide Composites**

GU Xiao-Wen, LÜ Xue-Ju, JIA Qiong*,
ZHOU Wei-Hong, LIU Yun-Ling

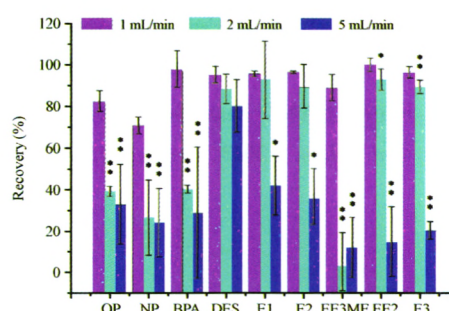
Chinese J. Anal. Chem., 2013, 41(3): 417–421



Simultaneous Detection of Nine Kinds of Estrogens in Water by Solid Phase Extraction Coupled with Gas Chromatography-Mass Spectrometry

LIAO Tao, WU Xiao-Cui, WANG Shao-Hua,
XIE Song-Guang, XIONG Guang-Quan,
GENG Sheng-Rong, LI Xin, ZU Xiao-Yan,
HU Xiao-Bo*

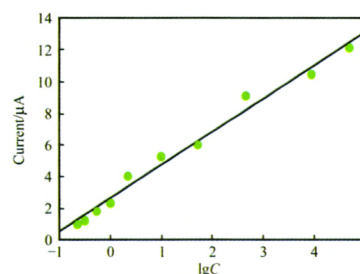
Chinese J. Anal. Chem., **2013**, 41(3): 422–426



Electrochemical Sensor Based on Platinum-Nickel-Iron/Carbon Nanosheets Nanocomposite for Determination of Clenbuterol

FENG Ya-Juan, NIU Si-Peng, FU Xue-Wen,
ZHAO Jin-Hang, YANG Yun-Hui*

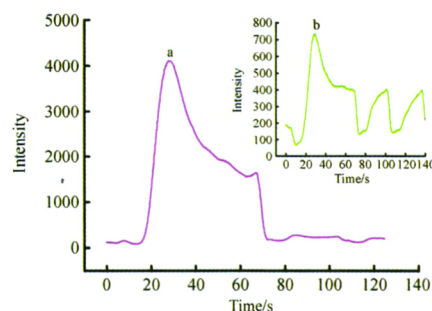
Chinese J. Anal. Chem., **2013**, 41(3): 427-431



Determination of Cholesterol in Hogwash Oil by Flow Injection Chemiluminescence with Bis (2 , 4 , 6-trichlorophenyl) oxalate-Hydrogen Peroxide System

XIAO Hu-Yong, CHEN Jia, WEI Guo-Fen,
HU Qin-Qin, AI Yong-Qing, HAN Yun,
ZHOU Xing-Wang, LÜ Jian-Quan *

Chinese J. Anal. Chem., 2013, 41(3): 432-435



Review and Progress

★ Progress of Photoelectrochemical Analysis and Sensors

ZHANG Zhao-Xia, ZHAO Chang-Zhi *

Chinese J. Anal. Chem., 2013, 41(3): 436-444

The photoelectrochemical analysis based on this phenomenon has a great application potential for analytical chemistry because of good selectivity, high sensitivity, simple equipment and easy miniaturization. In the paper, the progress of photoelectrochemical analysis and its sensors is reviewed through 91 literatures in recent years.

★ **Surface Modification of Poly Ethylene Glycol to Resist Nonspecific Adsorption of Proteins**

XIAO Xi-Feng, JIANG Xiao-Qun, ZHOU Lei-Ji *

Chinese J. Anal. Chem., 2013, 41(3): 445–453

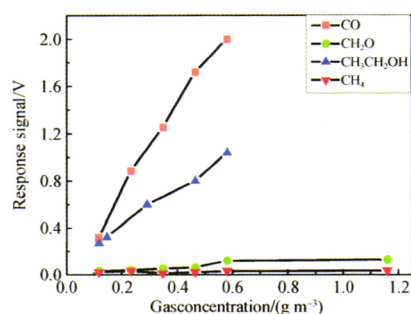
Poly ethylene glycol (PEG), as a polymer of unique properties in hydrophilicity and electrical neutrality, is well known as a significant material to resist protein adsorption. Here we reviewed some developments in recent years in surface modification of PEG on various substrates, including the analysis of PEG structures and characteristics, theoretic interpretation of adsorption resistance, and the strategies of PEG modification on hydrophobic surfaces. We also look forward to its development prospects.

Experimental Technique and Instrument

Based-Negative Temperature Coefficient Thermistor Catalytic Combustion Carbon Monoxide Sensor

HUANG Cai-Xia, GAO Guo-Qiang *

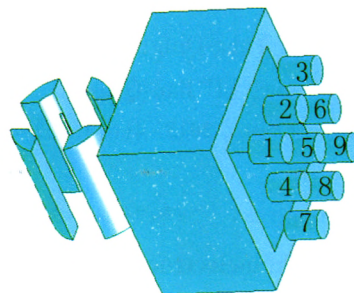
Chinese J. Anal. Chem., 2013, 41(3): 454–458



Development and Application of a Novel Ion Focus Device under Ambient Conditions

LIU Kun *, WANG Xiao-Hao, TANG Fei

Chinese J. Anal. Chem., 2013, 41(3): 459–464



* The author to whom the correspondence should be addressed

* The English electronic version of the article is published by Elsevier BV on ScienceDirect (<http://www.sciencedirect.com/science/journal/18722040>)

Sponsored by
Chinese Chemical Society
Chinese Academy of Sciences