

ISSN 1001-8042

CN 31-1559/TL

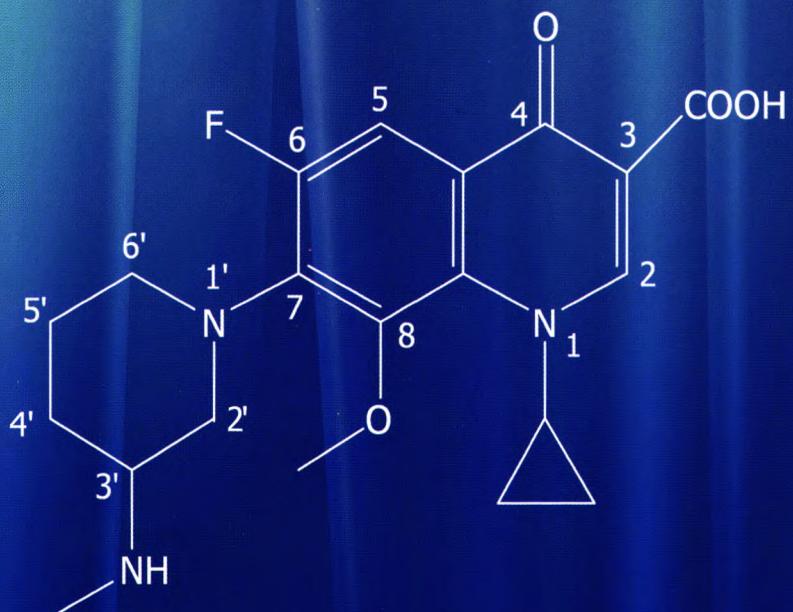
CODEN:NSETEC



# NUCLEAR SCIENCE AND TECHNIQUES

核技术(英文版)

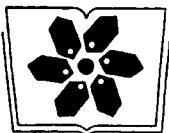
Vol.24 No.S1 Dec. 2013



Structure of BFX (P.S010216)

Shanghai Institute of Applied Physics,  
Chinese Academy of Sciences

Science Press



# NUCLEAR SCIENCE AND TECHNIQUES

Vol.24 S.1

## CONTENTS

December 2013

### LOW ENERGY ACCELERATOR, RAY AND APPLICATIONS

**S010201 Prototype of multi-filament electron curtain accelerator**

LI Guohua TANG Huaping LIU Jinsheng ZHANG Huayi LIU Yaohong ZHANG Dongsheng HE Yu LI Jian GUAN Weiqiang

**S010202 A comparison of pilot scale electron beam and bench scale gamma irradiations of cyanide aqueous in solution**

YE Longfei HE Shijun YANG Chunping WANG Jianlong YU Jiang

### NUCLEAR CHEMISTRY, RADIOCHEMISTRY, RADIOPHARMACEUTICALS AND NUCLEAR MEDICINE

**S010301 Degradation of chitosan for rice crops application**

Norzita Yacob Maznah Mahmud Norhashidah Talip Kamaruddin Hashim Abdul Rahim Harun Khairul Zaman Hj Dahlani

**S010302 Carboxymethyl starch cross-linked by electron beam radiation in presence of acrylic acid sensitizer**

Doan Binh Nguyen Thanh Duoc Pham Thi Thu Hong

**S010303 Properties of radiation curable hyperbranched polyurethane acrylate from palm oil oleic acid**

Mek Zah Salleh Khairiah Badri Sahrim Haji Ahmd Mohd Hilmi Mahmood Rida Tajau Nik Ghazali Nik Salleh Mohamad Lokman Latif

**S010304 Synthesis of functional polymers by pre-radiation induced grafting of acrylaldehyde onto FEP film**

LI Zhi WU Songliang YANG Xiangmin ZHANG Weidong YANG Cunzhong FANG Bin XIE Pengfei

**S010305 Surface modification of the TiO<sub>2</sub> particles induced by  $\gamma$  irradiation**

LI Zhi QI Xiangzhi GE Xueping YANG Cunzhong FANG Bin ZHANG Weidong YANG Xiangmin

**S010306 Irradiation effect of hot electronic beams on parylene films**

WANG Yanbin CHEN Zhimei CHANG Guanjun

**S010307 Radiation synthesis and characterization of 3-(trimethoxysilyl) propyl methacrylate silanized silica-graft-vinyl imidazole for Hg(II) adsorption**

SUN Jian CHEN Zhimin GE Mengyi XU Ling

**S010308 Radiolysis of HA in aqueous solutions using gamma rays**

JIA Wenbao WEI Yonghong LIU Jianguo LING Yongsheng HEI Daqian SHAN Qing ZENG Jie

**S010309 Irradiation detection of oilseed crops by electron spin resonance**

FU Junjie ZHAO Xiaojun XU Furong FENG Duhua WANG Qing DENG Li

**S010310 Study on the rapid detection of irradiated rice based on RVA**

FU Junjie ZHOU Xinyao FENG Duhua WANG Qing DENG Li

**S010311 Pulse radiolysis of sparfloxacin in neutral aqueous solution**

LIU Yancheng LI Haixia CUI Rongrong TANG Ruizhi XU Yulie WANG Wenfeng

**S010312 Pulse radiolysis and laser flash photolysis study of balofloxacin**

XU Yulie LIU Yancheng LI Haixia ZHANG Peng TANG Ruizhi CAO Xiyan WANG Wenfeng

**S010313 Effects of radiation-induced crosslinking on thermal and mechanical properties of poly(lactic acid) composites reinforced by basalt fiber**

LIU Meihua YIN Yuan WEI Wei ZHENG Chunbai SHEN Shirley DENG Pengyang ZHANG Wanxi

### NUCLEAR ENERGY SCIENCE AND ENGINEERING

**S010601 Thermal safety analysis of aluminum matrix B,C irradiation in-pile**

MI Xiangmiao QIAN Dazhi ZHANG Zhihua HUANG Hongwen GUO Haibin

**S010602 Research of Li<sub>4</sub>SiO<sub>4</sub> irradiation tritium production device**

ZHANG Zhihua MI Xiangmiao YE Mao QIAN Dazhi LI Run-dong FENG Qijie

**Editor-in-Chief**

MA Yugang

**Vice Editors-in-Chief**

WU Ziyu

ZOU Yaming

JIANG Dazhen

YE Kairong

WANG Xi

**Advisory Board**

ANDERSEN H H (Denmark)

ANDO M (Japan)

CHEN Jiaer

FANG Shouxian

LIU Yuanfang

RIMINI E (Italy)

SHEN Wenqing

TANG Xiaowei

WANG Naiyan

WENG W T (USA)

WINICK H (USA)

XIAN Dingchang

XU Hongjie

YANG Fujia

ZHU Dezheng

**Editorial Committee**

BYRD J (USA)

CHAI Zhifang

FAN Chunhai

FU Shen

**GONG Jinlong**

HE Jianhua

HU Jun

HUANG Gang

HUANG Huanzhong (USA)

HUANG Ningkang

JIANG Dazhen

JIANG Xiaoming

JIN Yunfan

LI Ding

LIU Dekang

LIU Guimin

LIU Zuping

MA Yugang

QI Yujin

SCHUBIGER P A (Switzerland)

SHENG Kanglong

SUN Xiang (USA)

TAI Renzhong

VANTOMME A (Belgium)

WANG Fan

WANG Xi

WANG Yongxian

WEI Long

WU Ziyu

XIAO Guoqing

XIE Jikang

YE Kairong

ZHANG Chuang

ZHANG Shaohong

ZHANG Xiaowei (Japan)

ZHAO Zhentang

ZHU Zhiyuan

ZHOU Quanfu

ZOU Yaming

**NUCLEAR SCIENCE AND TECHNIQUES**

(Quarterly: 1990~2003; Bimonthly since 2004)

Vol.24, S.1, December 20, 2013

**核技术(英文版)**

(双月刊, 1990年创刊)

第24卷 增刊第1期 2013年12月20日出版

© 2013 Shanghai Institute of Applied Physics, Chinese Academy of Sciences, Published by Science Press. All rights reserved.

**Charged by Chinese Academy of Sciences****主管** 中国科学院**Sponsored by Shanghai Institute of Applied Physics, CAS****主办** 中国科学院上海应用物理研究所

Chinese Nuclear Society

中国核学会

**Coordinated with Shanghai Nuclear Society****协办** 上海市核学会**Edited by Editorial Board of Nuclear Science and Techniques****编辑** 《核技术》(英文版) 编辑委员会

Address: P.O. Box 800-204, Shanghai 201800, China

通信地址: 上海市 800-204 信箱, 邮编: 201800

E-mail: LHB@sinap.ac.cn

E-mail: LHB@sinap.ac.cn

**Editor-in-Chief MA Yugang****主编** 马余刚**Published by Science Press****出版** 科学出版社**Printed by Shanghai Ouyang Printing House Co., Ltd.****印刷** 上海欧阳印刷厂有限公司**Distributed by****发行** 国内: 科学出版社

Domestic: Science Press

地址: 北京东黄城根北街 16 号, 邮编: 100717

Add: 16 Donghuangchenggen North Street, Beijing 100717, China

国外: 科学出版社纽约出版公司

Overseas: Science Press New York, Ltd.

地址: 63-117 Alderton Street, Rego Park,

Add: 63-117 Alderton Street, Rego Park, NY 11374, USA

NY 11374, USA

ISSN 1001-8042

中国标准连续出版物号: ISSN 1001-8042  
CN 31-1559 / TL

国内邮发代号: 4-647

国外发行代号: Q5880



国内外公开发行

定价: 30.00 元 / 册