

目 次

物理核形状量子相变与微观 sdIBM- F_{\max} 的势能曲面 汪 红,童 红,石筑一,等(1)**化学**

水泥固化 Cs、U(VI)的浸出模型研究 全 明,李玉香,易发成,等(7)

锆英石对三价锕系核素固化能力及抗 γ 射线辐照稳定性 陈梦君,崔春龙,卢喜瑞,等(14)**反应堆工程**

湍流模型在堆芯热工水力性能分析中的应用 曾和义,郭 赠 (20)

中国实验快堆虹吸破坏装置取钠口结构流体动力学分析 彭 燕,张东辉,丁振鑫 (25)

密度锁启动特性实验研究及计算验证 陈 薇,阎昌琪,谷海峰 (29)

一体化压水堆非能动余热排出系统运行特性影响因素分析 代守宝,彭敏俊 (34)

核电厂严重事故下卸压对氢气产生的影响分析 陶 俊,李京喜,佟立丽,等(40)

基于邻域粗糙集和决策树算法的核电厂故障诊断方法 慕 显,夏 虹,刘永阔 (44)

TOPAZ-II 反应堆慢化剂温度效应分析 解家春,赵守智,贾宝山,等(48)

核电站主泵机组地震响应谱分析及应力评定 周文霞,张继革,王德忠 (54)

核动力装置冷凝器体积的优化设计 郑 静,阎昌琪,王建军 (60)

立式自然循环蒸汽发生器的重量优化设计 秦慧敏,阎昌琪,王建军,等(66)

氯增殖剂 Li_4SiO_4 陶瓷小球的制备工艺 尹邦跃,牛 健 (73)

研究堆低压电气贯穿件的密封性能 刘 晓,钱达志,王明珊,等(80)

技术及应用54HC 系列 CMOS 器件脉冲与稳态 γ 总剂量效应异同性研究 罗尹虹,郭红霞,张凤祁,等(84)

CSNS 四极陶瓷真空盒磁控溅射镀 TiN 膜研究 王梨兵,董海义,裴国玺,等(90)

基于 EPICS 的注入凸轨脉冲电源控制样机研制 刘 佳,王春红,裴国玺,等(94)

用于 In-Beam TOF-PET 的时间校正系统 陈金达,徐瑚珊,陈若富,等(97)

大气颗粒物中黑碳浓度的反射法测定 秦亚丽,张海青,张贵英,等(102)

用 D-D 中子发生器测量水泥生料中的元素含量 曹雪朋,陈晓辉,张宏宇,等(108)

抽气碰撞法回收擦拭样品上铀微粒方法 王同兴,李井怀,张 燕,等(112)

聚丙烯酸钙/环氧树脂辐射防护材料的制备工艺及性能 李江苏,戴耀东,张 瑜,等(117)

咖啡因联合辐射处理对人乳腺癌易感基因 BRCA1 表达的影响 李 宁,张 红,王燕玲,等(124)

期刊基本参数: CN 11-2044/TL * 1959 * m * A4 * 128 * zh * P * ¥40.00 * 1200 * 24 * 2011-01

本期责任编辑 张秀平 王调霞 侯翠梅 汤晓浩 马英霞 王宝金

ATOMIC ENERGY SCIENCE AND TECHNOLOGY

Vol. 45, No. 1

Jan. 2011

CONTENTS

PHYSICS

- Quantum phase transition of nuclear shape and potential energy surface in microscopic sdIBM- \bar{F}_{\max} approach WANG Hong, TONG Hong, SHI Zhu-yi, et al(1)

CHEMISTRY

- Leaching model of Cs, U(VI) immobilized in cement QUAN Ming, LI Yu-xiang, YI Fa-cheng, et al(7)
Capability of resisting γ -ray irradiation and immobilization for simulated trivalent actinides on synthesized zircon CHEN Meng-jun, CUI Chun-long, LU Xi-rui, et al(14)

REACTOR ENGINEERING

- Application of turbulence models in thermal-hydraulic analysis of reactor core ZENG He-ye, GUO Yun(20)
Hydrodynamics analysis of inlet in anti-siphon equipment of china experimental fast reactor PENG Yan, ZHANG Dong-hui, DING Zhen-xin(25)
Experimental study and numerical calculation on density lock for self-equivalence startup CHEN Wei, YAN Chang-qi, GU Hai-feng(29)
Thermal-hydraulic characteristics effect factors analysis for passive residual heat removal system of integral pressurized water reactor DAI Shou-bao, PENG Min-jun(34)
Effect of depressurization on hydrogen generation during severe accident in PWR nuclear power plant TAO Jun, LI Jing-xi, TONG Li-li, et al(40)
Fault diagnosis method for nuclear power plant based on decision tree and neighborhood rough sets MU Yu, XIA Hong, LIU Yong-kuo(44)
Analysis of moderator temperature effect for TOPAZ-II reactor XIE Jia-chun, ZHAO Shou-zhi, JIA Bao-shan, et al(48)
Analysis and assessment on seismic response of reactor coolant pump in nuclear power plant ZHOU Wen-xia, ZHANG Ji-ge, WANG De-zhong(54)
Optimal design of condenser volume in nuclear power plant ZHENG Jing, YAN Chang-qi, WANG Jian-jun(60)
Optimal design of vertical natural circulation steam generator weight QIN Hui-min, YAN Chang-qi, WANG Jian-jun, et al(66)
Preparation process of Li_2SiO_5 pebbles as tritium breeding materials YIN Bang-yue, NIU Kai(73)
Leak tightness of low voltage electrical penetration assembly on research reactor LIU Xiao, QIAN Da-zhi, WANG Ming-shan, et al(80)

TECHNIQUES AND APPLICATIONS

- Similarities and differences between pulsed and steady γ total dose effect in 54HC CMOS devices LUO Yin-hong, GUO Hong-xia, ZHANG Feng-qi, et al(84)
TiN coating of CSNS alumina ceramics vacuum chambers for quadrupole magnets by magnetron sputtering WANG Li-bing, DONG Hai-ye, PEI Guo-xi, et al(90)
Control prototype of BUMP power supply based on EPICS LIU Jia, WANG Chun-hong, PEI Guo-xi, et al(94)
Time rectification system for in-beam TOF-PET CHEN Jin-da, XU Hu-shan, CHEN Ruo-fu, et al(97)
Black carbon in airborne particulate matter by means of reflection method QIN Ya-li, ZHANG Hai-qing, ZHANG Gui-ying, et al(102)
Elemental contents in cement raw meal using D-D neutron generator CAO Xue-peng, CHEN Xiao-hui, ZHANG Hong-yu, et al(108)
Vacuum suction-impact collection for recovering uranium particles from swipe sample WANG Tong-xing, LI Jing-huai, ZHANG Yan, et al(112)
Preparation and property of polyacrylic acid samarium/epoxy resin composite material for radiation-protection LI Jiang-su, DAI Yao-dong, ZHANG Yu, et al(117)
Effects of caffeine cotreatment with radiation on breast cancer susceptibility gene BRCA1 LI Ning, ZHANG Hong, WANG Yan-ling, et al(124)

Editors ZHANG Xiu-ping, WANG Tiao-xia, HOU Cui-mei, et al