

科技与创新

关注科技前沿 交流创新成果 加快科技推广 营造创新氛围



11
2014
总 第 11 期

Science and Technology & Innovation

《中国知网系列数据库》收录期刊
《中文科技期刊数据库》收录期刊

《中国核心期刊(遴选)数据库》收录期刊
《中国龙源国际期刊网》收录期刊

ISSN 2095-6835
CN 14-1369/N



ISSN 2095-6835



9 772095 683147

邮发代号：22-582 定价：每册15元

万方数据



科技与创新

Science and Technology & Innovation
2014年第11期 / 上半月刊 / 6月5日出版

目 次

◇ 应用技术 ◇

- 变电站无功补偿装置过电压保护探讨 庄稼 (1)
新型数/模晶闸管功率控制器实验方法研究 赵志峰 (2)
气质联用法分析焊膏中助焊剂的化学成分 缪玮 (4)
电缆与架空连接方案的设计优化 向城名 (5)
采用火试金法分析铜精矿中金银时试样粒度对分析结果的影响 蒋鑫 (7)
建筑材料放射性检测不确定度评定 王海丰 (8)
浅谈现代液压技术在机械自动化生产中的应用 刘李杰 (10, 14)
一种气动电控搬运机械手的设计与实现 慕足鑫, 董振宇 (11, 14)
浅谈人工智能技术在电气自动化控制中的应用 张琪培, 袁保清 (12, 14)
手机连接器接触可靠性设计研究 赖永兴 (13)
电气安装工程图纸审核要点探析 李育敏 (15)
集中供热系统中的水力失调问题探讨 陈文彬 (16)
同轴馈管特性参数分析和工程应用 尹隆华 (17, 20)
电力系统中变电运行技术分析 张东东 (18, 20)
圆弧形螺旋槽的宏程序编程与加工 唐玉林, 张士印 (19)
急倾斜煤层采煤工艺的探究 王昇 (21)
从维修保养视域下分析城市轨道交通减振措施 吴千周 (22)
轴承内圈滚道失效及处理分析 李子雄 (24, 28)
抓斗移动式格栅除污机在抽水泵站的应用研究 孙登峰 (25, 28)
机械加压送风系统超压措施电气控制 胡永彬 (26, 28)
刍议多层框架结构的优化设计 苏东进 (27)
变压器水冷却控制探讨 王涛 (29)
东汽 600 MW 汽轮机高调门运行中抖动在线处理 伊皓, 杨勇刚, 张三相 (30)
强排式燃气热水器噪声的产生与控制分析 唐元锋 (31)
电气自动化控制技术分析 张良 (33)
数控车床电动刀架的故障维修措施分析 蒋国庆, 尹新帅 (34, 38)
锚杆支护作用理论浅谈 范宇, 黄晓波 (35, 38)
毛细管气相色谱法测定乙二醇的含量 邱永坚 (36, 38)
关于 10 kV 户外柱上智能设备电源系统的研究 郭丽慧 (37)
总线技术在工程机械上的应用探讨 彭文钦 (39)
硬度测定在压力容器检验工作中的问题分析 陈章权 (40)
电力变电运行中多发事故点的控制研究 王娟 (41)
电网建设中负荷管理终端维护与故障处理分析 邝立柱 (42)
论绿色电厂中电力自动化控制的运用探讨 岳云宁 (44, 48)

• 特别声明 •

本刊发表的所有文章仅为作者个人观点，如因其引起纠纷和责任，由文章作者自行承担。文责自负，严禁抄袭。如侵犯他人著作权，由作者本人承担一切责任。

未经许可，不得以任何形式复制或转载本刊之部分或全部内容。

凝结水泵变频器一拖二逻辑设计及应用	令达伟 (45, 48)
变电站继电保护状态检修问题分析	苏光涛 (46, 48)
变电站一次和二次设备的技术改造分析	郑鹏栩 (47)
对电力营销中电能计量自动化系统应用的探讨	田国栋 (49)
10 kV 架空线路常见故障及对策分析	邱小帆 (50)
浅析自来水厂机泵设备节能降耗措施	王宇彬 (52)
基于降低线损的用电检查控制策略简析	卢威 (53, 56)
浅谈锅炉汽包水位的控制	卫宏源 (54, 56)
浅谈工业电气自动化的应用与发展	张继兵 (55)
对低压配网供电可靠性及其增强措施的探讨	李鉴添 (57)
市政电气设计中的主要问题分析	陈爽 (58, 61)
10 kV 配电网的高压电能整体计量技术	方宝霞 (59, 61)
热工控制 DCS 系统设计与运用	任江波 (60)
刍议 220 kV 架空送电线路水文勘测技术	聂川翔 (62)
矿井排水系统中全自动控制对 PLC 技术的应用	郭传奇 (63)
重介质旋流器流场的数值模拟	张鹏 (64)
ANSYS 在船舶轴系校中上的应用	季晨龙 (65, 94)
建筑电气照明节能设计的探讨	潘毅 (66, 94)

◇ 建筑与工程 ◇

探析市政道路交通设计要点	吴海锋, 李春强 (67)
预应力混凝土箱形桥梁不确定性和更新的长期预测	白杨 (68)
大跨度钢结构桥梁营业线施工风险控制	景海强 (71)
嘉陵江草街航电枢纽工程施工导流方案比选与应用	曹松柏 (73)
冬季预制箱梁养生方案对比	王修平, 王艺, 吴伟 (75)
土木建筑工程的质量影响因素及其管理分析	覃俊 (76)
米德湖 3 号隧道水下钢管混凝土配合比设计的发展	白杨 (77)
复杂价值工程在高速公路隧道施工中的应用研究	吴国发 (80)
软土地基上喷射混凝土衬砌的设计 ——从英国的某个角度出发	白杨 (81)
建筑工程混凝土裂缝原因及防治措施	谢先丽 (84)
高墩身施工及安全技术研究	黄丽霞 (85)
浅析建筑工程管理中的问题与对策	王元 (87)
浅析某高速公路改扩建质量控制	白杨 (88)
市政工程排水管道施工细节分析	方李敏, 邵洪向 (90)
建筑工程施工质量与安全管理方法	杜向军, 林华芳 (91)
建筑工程的管理现状及调节对策	陈向 (93)

◇ 管理科学 ◇

强化煤矿机电设备管理, 确保矿井安全生产	郭海全 (95)
高等院校二级学院教学档案管理的探讨	傅银燕 (96)
论电子政务环境下地税系统面临的挑战与应对措施	邹依番 (98, 101)
电力施工中成本管理的有效措施探析	苏炳欣 (99, 101)
完善建筑经济管理, 重视建设资金时效	王慧敏 (100)
安全标准化建设浅谈	董明鹤, 胡巧英 (102)
复杂合同环境下的项目进度管理	李阳, 吴剑辉 (103, 107)
煤矿供电管理中存在的主要隐患及整改措施	段胜利 (104, 107)
关于我国化工企业安全管理的一些研讨	彭跃春 (105, 107)
关于申报测绘资质的心得体会	王锦根 (106)
论工程档案管理中的合同控制	苏泳雯 (108, 143)
农村电力供电安全隐患及防范措施	李雅丽 (109, 143)

国际标准刊号 ISSN 2095—6835

国内统一刊号 CN 14—1369/N

主 管 山西省科学技术协会
主 办 山西科技新闻出版传媒集团
编辑出版 科技与创新杂志社
地 址 太原市长风东街 15 号
邮政编码 030006
电 话 0351—7537156

期刊编辑管理委员会

主任 郝建新
副主任 贾克义
委员 石宝新 赵国旗 许丽
罗光明 栗争荣

社长 许丽
总编辑 贾克义
执行主编 江海
编辑部主任 胡雪飞
编辑 白洁 李珏 王霞
刘晓芳 牛卓青 陆颖
林华权 贾爽
英文编辑 李雪
排版 吴珍

投稿邮箱 kjycxzzs@126.com
kjycx@188.com
查稿电话 0351—7537156
010—88909179
网址 www.kjycx.com

国内发行 全国各地邮政局(所)
邮发代号 22—582
国外发行 中国出版对外贸易公司
(中国国际书店)

印 刷 山西同方知网印刷有限公司
定 价 每册 15 元

SCIENCE
AND
TECHNOLOGY
&
INNOVATION

No.11 June 2014

◇ 专题研究 ◇

- 加强大学知识产权教育的必要性与路径分析 王玉秋, 顾成青 (110)
关于社会稳定风险评估与环境影响评价异同的探讨 李雄飞 (112)
资产结构、资本结构与盈利能力相关性研究 贾凡, 苏国贤 (114)
浅析营销渠道行为理论 曾越君 (116)
浅谈权重加载法在施工进度评价中的应用 李庭 (117)
民机功能可靠性试飞研究 姚振华, 严子焜 (119)
太阳黑子数的 ARIMA 模型 廖海燕 (121)
项目教学法在《仓储作业实务》教学中的应用 陈媚 (123)

◇ 信息时代 ◇

- 计算机信息管理系统在血站管理中的应用浅析 农耀铭 (125)
基于文件搜索功能的图像融合程序实现 何源 (126)
新技术在建筑工程测量中的应用分析 赵俊峰 (128)
CDMA 核心网向 EPC 演进实施策略 王芳 (129)
导航定位技术的发展史 王馨, 朱丽, 刘文婧 (131, 134)
电力营销数据分析中的数据集成技术研究 郭航宇 (132, 134)
100G OTN 大容量传输技术浅析 李纯丹 (133)
浅谈网络安全技术及其在校园网中的应用 高杨 (135)
三网融合下有线电视网络面临的问题及对策 石峰 (136, 143)

◇ 资源与环境 ◇

- 鑫鼎泰矿区土地地貌景观的分形研究 赵晋宝 (137)
印染废水处理中高级氧化技术的研究 余远平 (139)
环保设计在水利工程设计中的应用 陈钦钦, 凌晨 (141)
浅谈岩土常见地质问题及勘察分析 黄镳 (142)
尖山站悬移质泥沙测验问题的探讨 邹铭盛 (144, 147)
陕北煤炭开采重点区地质灾害特征及防治 邓红星 (145, 147)
多波束水下地形测量系统在榕江堤防险段监测的应用 马齐国 (146)
浅谈城市建筑施工中的环境污染及防治措施 马江波 (148)
试论工业废气的危害及其主要防治方法 贺文力 (149)
矿产地质勘查的基本特点和工作思路构建 周波 (150, 153)
环境监察工作现状和应对策略解释 高世春 (151, 153)
在地形图测绘中 RTK 与全站仪联合应用实践与分析 徐术 (152)
探析环境检测中现代生物技术的应用 黄春娥 (154)

◇ 医药科技 ◇

- hTERC 在宫颈脱落细胞及宫颈活检中表达 文丽芳, 丁进进 (155)
除颤监护仪的使用及其注意事项 方浩 (157, 161)

◇ 农林科技 ◇

- 解析城市园林绿化中攀援植物的应用 郑应桂 (158)
探析干旱胁迫对青藏高原 4 种灌木生理指标的影响 张芯 (159, 161)
台州市丝瓜常见病识别及防治 李明, 戴笑 (160)



旗下科技报刊：

科学导报 山西科技报 科学之友 新科幻
基层医学论坛 能源与节能 种子科技
科技与创新 山西农经 天工

封面图片：《低碳科技馆》（作者：蔡志伟），在“2013 年第二届中国科普摄影大赛”中荣获“优秀奖”。

封底图片：《水中绽放的花》（作者：刘军），在“2013 年第二届中国科普摄影大赛”中荣获“一等奖”。

Science and Technology & Innovation

CONTENTS

Applied Technology

Discussion Substation Reactive Power Compensation Device Over-voltage Protection	Zhuang Jia (1)
Research of New Experimental Methods Thyristor Power Controller Digital /Analog	Zhao Zhifeng (2)
GC-MS Analysis of the Chemical Composition of the Solder Paste Flux	Miao Wei (4)
Overhead Cable and Connectivity Solutions Designed to Optimize	Xiang Chengming (5)
Gold and Silver in Copper Concentrate by Fire Assay Method Analysis the Effect of Sample Size to the Analysis Result	Jiang Xin (7)
Uncertainty Evaluation of Radioactive Materials Detected	Wang Haifeng (8)
Introduction to Modern Hydraulic Technology in the Application of the Mechanical Automation Production	Liu Lijie (10, 14)
Electronically Controlled Handling of Pneumatic Manipulator Design and Implementation	Mu Zuxin, Dong Zhenyu (11, 14)
On the Application of Artificial Intelligence Technology in Electric Automation Control	Zhang Qipei, Yuan Yuqing (12, 14)
Phone Connector Contact Reliability Design Research	Lai Yongxing (13)
Electrical Installation Engineering Drawings Audit Points Analysis	Li Yumin (15)
Explore the Central Heating System Hydraulic Imbalance	Chen Wenbin (16)
Coaxial Feed Tube Characteristic Parameter Analysis and Engineering Applications	Yin Longhua (17, 20)
Power System Substation Operation Technical Analysis	Zhang Dongdong (18, 20)
Round the Curve at the Macro Application Programming and Processing	Tang Yulin, Zhang Shiyin(19)
Steep Seam Mining Technology to Explore	Wang Sheng (21)
Damping Measures Analysis of Urban Rail Transit from Maintenance Sight	Wu Qianzhou (22)
Failure Analysis and Processing Bearing Inner Raceway	Li Zixiong (24, 28)
Grab Mobile Application Research Grille Decontamination of the Pumping Station	Sun Dengfeng (25, 28)
Mechanical Pressure Air Supply System Measures the Electrical Control Overpressure	Hu Yongbin (26, 28)
On Optimizing the Design of Multi-frame Structure	Su Dongjin (27)
Control of Water-cooled Transformers	Wang Tao (29)
East Steam Turbine 600 MW Run of High-profile Door Handle Jitter Online	Yi Hao, Yang Yonggang, Zhang Sanxiang (30)
Generation and Control Analysis Strong Gas Water Heater Noise	Tang Yuanfeng (31)
Electrical Automation Control Technical Analysis	Zhang Liang (33)
CNC Lathe Turret Electric Fault Repair Measures Analysis	Jiang Guoqing, Yin Xinshuai (34, 38)
Talking about the Role of Theory Bolt Support	Fan Yu, Huang Xiaobo (35, 38)
Determination of Ethylene Glycol Capillary Gas Chromatography	Qiu Yongjian (36, 38)
About 10 kV Outdoor Column Smart Device Power System Studies	Guo Lihui (37)
Explore the Bus Technology in the Application of Engineering Machinery	Peng Wenqin (39)
Pressure Vessel Inspection Hardness Measurement in the Work of the Problem Analysis	Chen Zhangquan (40)
Control of the Accident Point of Running Multiple Power Substation	Wang Juan (41)
Grid load Management Terminal Building Maintenance and Troubleshooting Analysis	Kuang Lizhu (42)
Discussion on the Use of Green Plants in the Power Automation Control	Yue Yuning (44, 48)
One with Two Condensate Pump Inverter Design and Application Logic	Ling Dawei (45, 48)
State Relay Substation Maintenance Problem Analysis	Su Guangtao (46, 48)
The Analysis of the Technical Transformation of Substation Primary Equipment and Secondary Equipment	Zheng Pengxu (47)
Discussion on Electric Power Metering Marketing Automation System Applications	Tian Guodong (49)
10 kV Overhead Line Fault Analysis and Countermeasures	Qiu Xiaofan (50)

On Water Plant Pump Energy Saving Measures Equipment	Wang Yubin (52)
Based Reduce Line Losses of Electricity Inspection Control Strategy Brief	Lu Wei (53, 56)
The Boiler Steam Drum Water Level Control	Wei Hongyuan (54, 56)
On the Application and Development of Industrial Electrical Automation	Zhang Jibing (55)
Discussion on Low-voltage Power Distribution Network Reliability and Enhanced Measures	Li Jiantian(57)
Municipal Electrical Design Analysis of the Main Problems	Chen Shuang (58, 61)
10 kV Distribution Network of High-voltage Energy Overall Measurement Technology	Fang Baoxia (59, 61)
Thermal Control System Design and Application of DCS	Ren Jiangbo (60)
Discussion on 220 kV Overhead Transmission Line Hydrographic Survey Technology	Nie Chuanxiang (62)
Mine Drainage System PLC Automatic Control Technology for Applications	Guo Chuanqi (63)
Numerical Simulation of Heavy Medium Cyclone Flow Field	Zhang Peng (64)
Application of ANSYS on the Ship Shafting	Ji Chenlong (65, 94)
Explore the Architectural Design of Electric Lighting Energy	Pan Yi (66, 94)

Architecture and Engineering

Analysis of Municipal Road Design Points	Wu Haifeng, Li Chunqiang (67)
The Prestressed Concrete Box Bridge Long-term Forecast Uncertainty and Update	Bai Yang (68)
The Risk of Large-span Steel Bridge Construction Business Line Control	Jing Haiqiang(71)
Comparison and Application of the Jiālīng River Grass Street Navigation and Hydropower Project Construction Diversion Scheme	Cao Songbo (73)
Precast Box Girder Winter Regimen Plan Comparison	Wang Xiuping, Wang Yi, Wu Wei (75)
Quality of Civil Engineering and Management Analysis of Factors	Tan Jun (76)
Lake Mead 3rd Tunnel Underwater Steel Tube Concrete Mixture Ratio Design of Development	Bai Yang(77)
Complex for the Application of Value Engineering in Highway Tunnel Construction	Wu Guofa (80)
The Design of Shotcrete Lining on Soft Soil Foundation	Bai Yang (81)
Construction of Concrete Cracks Causes and Prevention Measures	Xie Xianli (84)
High Pier Construction Safety Research and Technology	Huang Lixia (85)
Analysis of Construction Management Problems and Solutions	Wang Yuan(87)
Analysis of the Quality Control of a Highway Expansion	Bai Yang (88)
Municipal Sewer Construction Detail Analysis	Fang Limin, Shao Hongxiang (90)
Construction Quality and Safety Management Measures	Du Xiangjun, Lin Huafang (91)
Status and Management Measures Regulating Construction Work	Chen Xiang (93)

Management Science

Mining Machinery to Strengthen Management, Ensure Mine Safety	Guo Haiquan (95)
Secondary College Teaching Archives Management of Colleges and Universities	Fu Yinyan (96)
On the Challenges Facing the Local Taxation System and Response Measures under the E-government Environment	Zou Yifan (98, 101)
Effective Measures of Power Construction Cost Management	Su Bingxin (99, 101)
Improve Economic Management Architecture, Attention to Timeliness of Construction Funds	Wang Huimin (100)
On the Standardization of Safety	Dong Minghe, Hu Qiaoying (102)
Project Schedule Management of Complex Contracts Environment	Li Yang, Wu Jianhui (103, 107)
Mine Risk Management in the Main Power Supply and Corrective Measures	Duan Shengli (104, 107)
Some Discussion on the Safety Management of Chemical Companies	Peng Yuechun (105, 107)
On Qualifications and Experience Declare Mapping	Wang Jingren (106)
Engineering Controls File Management Contract	Su Yongwen (108, 143)
Rural Electricity Supply Security Risks and Preventive Measures	Li Yali (109, 143)

Special Research

The Necessity to Enhance the University's Intellectual Property Education and Path Analysis	Wang Yuqiu, Gu Chengqing (110)
---	----------------------------------

Discussion on Similarity and Difference between Social Stability Risk Assessment and Environmental Impact Assessment	Li Xiongfei (112)
Study on the Correlation of Assets Structure, Capital Structure and Profitability	Jia Fan, Su Guoxian (114)
Analyses the Behavioral Theory of Marketing Channel	Zeng Yuejun (116)
Talking about Weight Loading Method Applied in the Evaluation of the Construction Progress	Li Ting (117)
Functional Reliability Test Flight of Civil Aircraft Research	Yao Zhenhua, Yan Zikun (119)
ARIMA Model Sunspot Numbers	Liao Haiyan (121)
Project Teaching in the “Warehousing Operations Practices” Teaching	Chen Mei (123)
Information Age	
Computer Information Management System in Blood Management Analysis	Nong Yaoming (125)
Image Fusion based on File Search Function Realization	He Yuan (126)
Application of New Technologies in the Construction Engineering Survey	Zhao Junfeng (128)
CDMA Core Network Evolution to the EPC Implementation Strategy	Wang Fang (129)
History of Navigation and Positioning Technology	Wang Xin, Zhu Li, Liu Wenjing (131, 134)
Integrated Technical Data Power Marketing Data Analysis	Guo Hangyu (132, 134)
100G OTN Analysis of Large-capacity Transmission Technology	Li Chundan (133)
On the Network Security Technology and Its Application in Campus Network	Gao Yang (135)
Triple Play Cable Networks Face Problems and Countermeasures	Shi Feng (136, 143)
Resources and Environment	
Xindingtai Fractal Research of the Mining Area Land Landscape	Zhao Jinbao (137)
Senior Oxidation of Dyeing Wastewater Treatment Technologies	Yu Yuanping (139)
Environmental Design in Hydraulic Engineering Design	Chen Qinjin, Ling Chen (141)
On the Geotechnical Survey and Analysis of Geological Problems and Common	Huang Biao (142)
Explore the Jianshan Station Suspended Sediment Test Questions	Zou Mingsheng (144, 147)
Characteristics and Geological Disaster Prevention Focus Area in Northern Shaanxi Coal Mining	Deng Hongxing (145, 147)
Multibeam Bathymetry Measurement System to Monitor the Application of Rongjiang Dangerous Section of Embankment	Ma Qiguo (146)
On the Construction of Urban Environmental Pollution and Prevention Measures	Ma Jiangbo (148)
Hazards of Industrial Waste and Its Main Control Methods	He Wenli (149)
The Basic Characteristics of Mineral Exploration and Geological Work Ideas to Build	Zhou Bo (150, 153)
Status of Environmental Monitoring and Coping Strategies Explained	Gao Shichun (151, 153)
In Topographic Map RTK and Total Station Practice and Analysis	Xu Shu (152)
Analysis of Environmental Monitoring Applications in Modern Biotechnology	Huang Chun'e (154)
Medical Science and Technology	
TERC Expression in Cervical Exfoliated Cells and Cervical Biopsy	Wen Lifang, Ding Jinjin (155)
Defibrillator Monitor Usage and Precautions	Fang Hao (157, 161)
Agricultural and Forestry Technology	
Climbing Analytic Applications in Urban Landscaping Plants	Zheng Yinggui (158)
Analysis of Drought Stress on Physiological Indicators Plateau Four Kinds of Shrubs	Zhang Xin (159, 161)
Taizhou Loofah Identification and Prevention of Common Diseases	Li Ming, Dai Xiao (160)

