

中国核心期刊（遴选）数据库 收录期刊

ISSN 1006-4311

CN13-1085/N

Value Engineering

JIAZHI GONGCHENG

2022 10

中旬刊（总第 649 期 / 第 41 卷）

价值工程

中国商界文联 会刊

中国技术经济研究会价值工程专业委员会 会刊

中国高等教育学会价值工程分会

中国期刊网 全文收录期刊

中国学术期刊（光盘版）

中国学术期刊综合评价数据库来源期刊

万方数据—数字化期刊群入网期刊

中文科技期刊数据库收录期刊

ISSN 1006-4311



9 771006 431068

# 价值工程

2022年10月中旬刊(总第649期/第41卷)  
1982年创刊 2022年10月18日出版

中国商界文联 会刊  
中国技术经济研究会价值工程专业委员会  
中国高等教育学会价值工程分会  
封面刊名题字:袁宝华

## 主管单位:

河北省科学技术协会

## 主办单位:

河北省技术经济管理现代化研究会

总 顾 问:管在源

总 编:高志彪

总 编 室:师瑞

电 话:0311-87024742

编 辑 部:马慧霞

电 话:0311-83020178

0311-83036626

传 真:0311-87024742

投稿邮箱:vezzsbjb@163.com

网 址:www.vezzs.com

责任编辑:高生明

封面设计:王金军

版面设计:韩宇红

国际标准连续出版物号:ISSN 1006-4311

国内统一连续出版物号:CN 13-1085/N

国内邮发代号:18-2

国内订阅:全国各地邮局

国内发行:河北省报刊发行局

国外发行:中国国际图书贸易总公司

印 刷:廊坊市长岭印务有限公司

编辑出版单位:价值工程杂志社

社 址:石家庄槐安西路88号

邮 编:050091

国内定价:30.00元人民币

海外定价:30.00美元

# 目 录

## \* 价值管理 \*

- 管道工程建设项目全目标、全流程风险管理 ..... 王树财等(1)
- 广州市区域评估制度实施效益分析研究 ..... 李旭等(5)
- 基于事业部制的科研院所绩效管理应用研究 ..... 陈丹等(8)
- 水电工程赶工的人工补偿费计算方法分析 ..... 王永刚等(11)
- 土壤质量与特色农业大数据方法研究 ..... 王振生等(14)
- 城市公交专用道运营效率提升对策研究 ..... 利敏怡等(17)
- 济南市A品牌肉类食品的调研设计与实施策略研究 ..... 王希泉等(20)
- 供电企业基于FMEA原理和方法的设备设施安全隐患排查标准研究及  
开发 ..... 王东等(23)
- 基于施工图预算的市政工程造价控制方法研究 ..... 毛筱娟(27)
- 商业经济管理中融入大数据的重要性研究 ..... 张熙罡(30)
- 制造业高质量发展路径分析 ..... 刘轩仪(33)
- 基于SBM-DEA的淮河生态经济带粮食绿色生产效率评价及对策研究  
..... 任志安等(36)
- 石家庄市数字经济对经济高质量发展的影响效应研究 ..... 李晶等(41)
- 粤海铁路乌石支线建设必要性研究 ..... 毛鹏翀(44)

## \* 价值链·供应链 \*

- B2C模式下抚州农产品物流配送路径优化研究 ..... 宋月婵等(47)
- 共享经济下江西省农业价值网络创新研究 ..... 袁浩洲等(50)
- 城市电商物流服务标准体系构建研究 ..... 秦佳婷等(53)

## \* 功能载体创新 \*

- 重庆郭家沱长江大桥抗风性能研究 ..... 李丙镇(56)
- 双层钢桁梁桥面U肋集水槽施工技术 ..... 张科龙等(59)
- 格宾石笼挡墙在多年冻土区路堑中的设计与优化 ..... 李建忠等(62)
- 制冷与空调用套管换热器强化换热研究 ..... 张海涛(65)
- 长大富水隧道反坡排水施工技术研究 ..... 张栋(68)
- 超深工作井双盾构始发关键技术研究及应用 ..... 李熙乾等(71)
- 大倾角工作面矿压分析及预警研究 ..... 岳学伟(74)
- 基于有限元分析地铁深基坑开挖周围地表沉降 ..... 杨永强等(78)
- 临近居民建筑隧道爆破设计施工关键技术分析 ..... 张辉(83)
- 上承式拱桥拱圈高水位现浇支架施工设计 ..... 王高平(86)

基于单片机无线控制的智能插座设计 .....	樊战亭(89)
围堰技术在水利工程施工应用 .....	程韬(92)
SDDC 桩在宁夏南部湿陷性黄土地基处理中的应用 .....	荣磊(97)
承插型盘扣架在高大模板支撑中的应用 .....	李江舵(100)
特大断面硐室注射新型地质聚合物加强支护技术应用 .....	李垒(103)
青云山隧道软弱围岩大变形控制技术研究 .....	王印(106)

\* 价值应用 \*

城市轨道交通智慧车站关键技术应用研究 .....	安文章 等(109)
一种杆类维修和清洁爬杆机器人设计 .....	王伟 等(112)
基于视频监控的教室人数统计系统的应用研究 .....	郑策 等(115)
浅析光伏组件接地导体选择及效果 .....	张超 等(118)
基于无人机航摄影像的大比例尺测图及三维建模研究 .....	窦叶贇(121)
水利水电工程基础灌浆中特殊地层的灌浆技术应用 .....	潘文(124)
建筑暖通空调安装施工技术研究 .....	徐剑华(127)
中长期电力负荷变权重组合预测模型应用分析 .....	孙广强 等(130)
水工环地质监测技术在地质灾害治理中的应用 .....	刘国谋 等(133)
基于小程序云开发的 GS 垃圾分类系统设计 .....	刘颖 等(136)
基于微信小程序的社区应急管理平台设计与建设 .....	赵昱皓 等(140)
基于可追溯性的艾草产品信息管理系统研究 .....	王凤仪 等(143)
钢结构框架与预制楼板连接节点的应用与研究现状 .....	陶诗怡 等(146)
基于混沌的智能塔机数据远传加密算法的应用研究 .....	王鹏飞 等(149)
咸阳机场 GBAS 选址研究 .....	荆恒(152)
一阶全偏联系数的计值公式及其应用 .....	刘宗宝 等(155)
基于改进型数字哨兵的考生试场认证数字化流程研究 .....	沈晨(158)

\* 理论综述 \*

可持续发展下碳信息披露质量问题的研究 .....	王涛(162)
关于建设共建共享土木工程行业集成平台框架的探讨 .....	张梦(165)

**郑重声明**

1. 本刊所刊载内容未经书面许可,任何部分不得以任何形式翻印、转载、复制,及存储于检索系统,提供给公众或私人使用。
2. 来稿在 15 个工作日内给予回复录用与否,若未收到回复信息,请来信来电咨询稿件进展。来稿正常刊登周期为 3 个月内,未录用者可自行处理。请勿一稿多投,不涉及保密、署名无争议,请作者自留底稿,恕不退稿。
3. 编辑部对来稿文章标题、内容、参考文献等保留删修权,不同意删修的稿件请在来稿中声明。
4. 本刊已许可相关期刊网站以数字化方式复制、汇编、发行、信息网络传播本刊全文。本刊支付的稿酬(或稿酬与作品审稿费、与作品样刊费相抵)已包含相关期刊网站著作权使用费,所有署名作者向本刊提交文章发表之行为视为同意上述声明。如有异议,请在投稿时说明,本刊将按作者说明处理。

**Value Engineering**  
**(VE)**  
 Fortnightly Issue  
 Started in 1982  
 Vol.41 10.b  
 (Sum No.649)  
 Published in Oct. 18, 2022

**Inscribed:** Yuan Baohua  
**General Counsel:** Guan Zaiyuan  
**Executive Editor-in-chief:**  
 Gao Zhibiao  
**Manager:**  
 Hebei Association for  
 Science and Technology  
**Sponsor:**  
 Hebei Institute of Technology  
 Economy and Modern Management

**Chief Editor's Department:**  
 Shi Rui  
**Editor:** Editorial Team of VE  
**Publisher:**  
 Magazine Publishing House of VE  
**Address:**  
 No.88 Huai'an Road, Shijiazhuang  
**Tel:** (0311) 87024742  
**E-mail:** vezzsbj@163.com

**Printed by:**  
 Changling Printing Co., Ltd. Langfang  
**Distributor:** Shijiazhuang Post Office  
**Subscriptions:**  
 Chinese Local Post Office  
**Domestic Issue Code:** 18-2  
**Domestic Single Price:** ¥30.00  
**Overseas Single Price:** 30.00  
**Open Publishing**  
ISSN 1006-4311  
 CN 13-1085/N

# CONTENTS

## VALUE MANAGEMENT

- 1 Full Objective and Full Process Risk Management of Pipeline Construction Project ..... WANG Shu-cai, *et al.*  
 5 Study on the Benefit of Guangzhou Regional Evaluation System ..... LI Xu, *et al.*  
 8 Research on Application of Performance Management in Scientific Research Institutes Based on Business Division System  
 ..... CHEN Dan, *et al.*  
 11 Analysis of the Calculation Method of Labor Compensation Cost for the Rush of Hydropower Projects ..... WANG Yong-gang, *et al.*  
 14 Soil Quality and Characteristic Agricultural Big Data Method ..... WANG Zhen-sheng, *et al.*  
 17 Study on Countermeasures for Improving the Operation Efficiency of Urban Bus Lane ..... LI Min-yi, *et al.*  
 20 Research Design and Implementation Strategy of Brand A Meat Food in Ji'nan ..... WANG Xi-quan, *et al.*  
 23 Research and Development of Equipment and Facilities Safety Hazard Troubleshooting Standards for Power Supply Enterprises  
 Based on FMEA Principles and Methods ..... WANG Dong, *et al.*  
 27 Research on the Cost Control of Municipal Engineering Based on Construction Drawing Estimate ..... MAO Xiao-juan  
 30 Research on the Importance of Integrating Big Data into Business Economic Management ..... ZHANG Xi-gang  
 33 Analysis on the High Quality Development Path of Manufacturing Industry ..... LIU Xuan-yi  
 36 Evaluation of Green Production Efficiency of Grain in Huaihe Eco-economic Zone and Countermeasures Based on SBM-DEA  
 ..... REN Zhi-an, *et al.*  
 41 Research on the Effect of Shijiazhuang Digital Economy on High Quality Economic Development ..... LI Jing, *et al.*  
 44 Necessity of Wushi Branch Line from Guangdong-Hainan Railway ..... MAO Peng-chong

## VALUE CHAIN·SUPPLY CHAIN

- 47 Research on Logistics Distribution Path Optimization of Agricultural Products in Fuzhou under B2C Mode ..... SONG Yue-chan, *et al.*  
 50 Research on Agricultural Value Network Innovation in Jiangxi Province under Sharing Economy ..... YUAN Hao-zhou, *et al.*  
 53 Research on the Construction of Urban E-commerce Logistics Service Standard System ..... QIN Jia-ting, *et al.*

## FUNCTION CARRIER INNOVATION

- 56 Study of Wind-resistant Performance of Chongqing Guojiatuo Yangtze River Bridge ..... LI Bing-zhen  
 59 Construction Technology of U-rib Sink on Double-layer Steel Truss Bridge Surface ..... ZHANG Ke-long, *et al.*

62	Design and Optimization of Gabion Retaining Wall in the Cutting Slope in Permafrost Regions .....	LI Jian-zhong, <i>et al.</i>
65	Study on Heat Transfer of Casing Heat Exchanger for Refrigeration and Air Conditioning .....	ZHANG Hai-tao
68	Study on Reverse Slope Drainage Construction Technology of Long and Rich Water Tunnel .....	ZHANG Dong
71	Research and Application of the Key Technology of the Dual Shield Initiation in Ultra Deep Working Wells .....	LI Xi-qian, <i>et al.</i>
74	Analysis of BM Ground Pressure and Early Warning Research in 220705 Fully Mechanized Mining Area of a Mine .....	YUE Xue-wei
78	Analysis of Ground Settlement around Deep Foundation Pit Excavation of Subway Based on Finite Element Method .....	YANG Yong-qiang, <i>et al.</i>
83	Analysis of Key Techniques for Blasting Design and Construction of Tunnels Adjacent to Residential Buildings .....	ZHANG Hui
86	Construction Design of Cast-in-situ Support at High Water Level for Arch Ring of Deck Arch Bridge .....	WANG Gao-ping
89	Design of Intelligent Socket Based on Wireless Control of Single Chip Microcomputer .....	FAN Zhan-ting
92	Application of Cofferdam Technology in Hydraulic Engineering Construction .....	CHENG Tao
97	Application of SDDC Pile in Collapsible Loess Foundation Treatment in Southern Ningxia .....	RONG Lei
100	Application of Socket and Spigot Type Turnbuckle Frame in High Formwork Support .....	LI Jiang-duo
103	Application of New Type Geological Polymer Injection to Strengthen Support Technology for Super Large Section Chamber .....	LI Lei
106	Study on Large Deformation Control Technology of Soft Surrounding Rock in Qingyunshan Tunnel .....	WANG Yin

#### VALUE APPLICATION

109	Research on Key Technology Application of Smart Station in Urban Rail Transit .....	AN Wen-zhang, <i>et al.</i>
112	Design of a Pole-type Maintenance and Cleaning Pole-climbing Robot .....	WANG Wei, <i>et al.</i>
115	Design and Implementation of Classroom Number Statistics System Based on Video Monitoring .....	ZHENG Ce, <i>et al.</i>
118	Selection and Effect of Grounding Conductor for PV Module .....	ZHANG Chao, <i>et al.</i>
121	Research on Large Scale Mapping and 3D Modeling Based on UAV Aerial Photographs .....	DOU Ye-yun
124	Application of Grouting Technology in Special Stratum in Foundation Grouting of Hydraulic and Hydroelectric Engineering .....	PAN Wen
127	Research on Installation and Construction Technology of Building HVAC .....	XU Jian-hua
130	Application and Analysis of Medium and Long Term Power Load Variable Weight Combination Forecasting Model .....	SUN Guang-qiang, <i>et al.</i>
133	Application of Hydraulic Environmental Geological Monitoring Technology in Geological Disaster Control .....	LIU Guo-mou, <i>et al.</i>
136	GS Garbage Classification System Design Based on Small Program Cloud Development .....	LIU Ying, <i>et al.</i>
140	Design and Construction of Community Emergency Management Platform Based on WeChat Mini Program .....	ZHAO Yu-hao, <i>et al.</i>
143	Research on Wormwood Product Information Management System Based on Traceability Technology .....	WANG Feng-yi, <i>et al.</i>
146	Application and Research Status of Steel Structure Frame and Prefabricated Floor Connection Node .....	TAO Shi-yi, <i>et al.</i>
149	Application Research of Chaos Based Data Remote Encryption Algorithm for Smart Tower Crane .....	WANG Peng-fei, <i>et al.</i>
152	Research on GBAS Site Selection of Xianyang Airport .....	JING Heng
155	Calculation Formula of First-order Total Partial Connection Number and Its Application .....	LIU Zong-bao, <i>et al.</i>
158	Research on the Digital Process of Examination Site Certification for Examinees Based on Improved Digital Sentry .....	SHEN Chen

#### THEORETICAL REVIEW

162	Research on the Quality of Carbon Information Disclosure under Sustainable Development .....	WANG Tao
165	Discussion on the Construction of Integrated Platform Framework for Civil Engineering Industry .....	ZHANG Meng