

# 铁道标准设计

(月刊)

2010年增刊2 总第583期

1957年创刊

中文核心期刊  
 中国科技论文统计源期刊  
 (中国科技核心期刊)  
 中国学术期刊综合评价数据库来源期刊  
 中国期刊网全文数据库来源期刊  
 中国学术期刊(光盘版)全文数据库来源期刊  
 中国核心期刊(遴选)数据库来源期刊  
 万方数据系统科技期刊群上网期刊

## 编委会名单

顾问: 蔡庆华 王麟书  
 周镜 王梦恕 陈新  
 名誉主任: 刘辉 黄铁生  
 主任委员: 李寿兵  
 副主任委员: 陈红念 孙树礼  
 委员: 于兴义 马栋 马庭林 王玉泽  
 王争鸣 王春河 王俊峰 王清明  
 王磊 田新明 冉理 朱颖  
 乔健 刘勇 刘永红 刘春彦  
 刘家锋 米隆 李永利 李汶京  
 李承根 李胜华 吴明友 辛学忠  
 张金武 张素敏 陆亚军 陈浩  
 范恒秀 屈晓辉 赵勇 夏国斌  
 倪光斌 徐升桥 郭珠远 秦翠江  
 盛黎明 彭晓华 韩利民 鄢巨平  
 (以姓氏笔画排序)

主编: 中国铁路工程总公司  
 主办: 中铁工程设计咨询集团有限公司  
 协办: 铁道部经济规划研究院  
 铁道第三勘察设计院集团有限公司  
 中铁第四勘察设计院集团有限公司  
 中铁第一勘察设计院集团有限公司  
 中铁上海设计院集团有限公司  
 中铁工程设计咨询集团有限公司  
 中铁工程设计咨询集团郑州设计院  
 中铁工程设计咨询集团太原设计院  
 中铁诚业工程建设监理有限公司  
 中铁一局集团有限公司  
 中铁十六局集团有限公司  
 中铁十八局集团有限公司  
 中铁株洲桥梁有限公司  
 郑州大方桥梁机械有限公司  
 中铁六局集团盾构分公司

主编: 刘家锋  
 副主编: 赵敬芬  
 英文翻译: 叶娟  
 编辑出版: 《铁道标准设计》编辑部  
 地址: 北京市丰台区广安路15号中铁咨询大厦  
 邮编: 100055  
 电话: (010)51825093 52696303(主编)  
 51823423 52696305(编辑)  
 51823263(广告、发行)  
 传真: (010)51823263  
 http://www.tdbsb.com  
 //tdbs.chinajournal.net.cn  
 E-mail: tdbsb@263.net

国内总发行: 北京报刊发行局  
 订购处: 全国各地邮局  
 中国标准连续出版物号: ISSN 1004-2954  
 CN 11-2987/U  
 邮发代号: 82-765  
 国外总发行: 中国国际图书贸易总公司  
 国外发行代号: M1777  
 广告许可证: 京丰工商广字第0082号  
 印刷: 天津中铁物资印业有限公司  
 出版日期: 2010年10月20日  
 定价: 50.00元

## 目次

### 空调

新广州火车站节能设计与建筑室内环境研究..... 郭旭晖 1  
 铁路客站候车大厅空调机房设置方式探讨..... 黄保民,朱建章 8  
 冬季无加湿功能全空气系统室内状态参数的确定及混风段凝水  
 现象分析..... 郭海超 11  
 低温送风空调系统气流组织的模拟分析..... 李森生 14  
 轨道交通屏蔽门空调箱与屏蔽门表冷器系统研究..... 赵红英 18  
 空调负荷工程计算方法探讨..... 莫汉平 21  
 关于地铁公共区通风空调系统风机变频控制策略的探讨..... 黄泽茂 24  
 北京地铁空调水处理技术的研究与应用..... 徐传汉 26  
 地板供冷系统运行工况及室内热环境分析..... 隋学敏,张旭 28  
 风机盘管干工况运行的空调系统研究..... 张辉 32  
 住宅建筑节能生态型蒸发冷却-辐射空调系统应用探讨  
 ..... 郑小丽,黄翔,殷清海 37  
 置换通风与其他空调技术的联合应用研究..... 赵启月 41  
 地板辐射供冷初探..... 赵宇 44  
 某北方海滨城市地铁工程通风空调室内设计参数确定..... 黄泽茂 47

### 通风

节能型屏蔽门系统在西安地铁的应用分析..... 郭永楠 48  
 基于改进的CFK方程的隧道CO浓度限值的研究..... 叶蔚,张旭 51  
 青岛地铁2号线过海隧道通风及防排烟设计初步方案..... 曹树勇 56  
 浅谈高原地区长大隧道施工通风风量计算..... 张仕杰 60  
 地铁风井形式对隧道通风效果影响的研究..... 韩云,赵蕾,邢利英 62  
 衡炎高速公路隧道火灾模式下通风及烟控设计方案研究  
 ..... 谢晚晴,徐志胜 65  
 屏蔽门双活塞风道系统在中国北方地区的应用探讨..... 韩平 67  
 城市电缆隧道发热量及通风量的计算分析..... 彭金龙,吴炜 70  
 节能型屏蔽门系统换气量计算分析..... 冯炼,李鹏,邓保顺,刘江 73  
 地铁射流风机最佳纵向间距探讨..... 曹臻,肖益民 76  
 负压病房气流组织方式的比较..... 高焯 79

### 热泵

太阳能地源热泵耦合系统工程运用分析..... 沈德安 82  
 江水源热泵系统设计与评估软件的开发及工程应用  
 ..... 陈明,卢军,陈建萍 86  
 上海某客运站房地源热泵地埋管间距的研究  
 ..... 鲍谦,张旭,王松庆,刘俊 89  
 大规模地源热泵地温恢复特性研究..... 刘俊,张旭 93  
 水源热泵系统的能效率分析与节能研究..... 李国栋 96  
 北京南站工程污水源热泵系统应用技术..... 位强 99

### 消防

福田地下火车站整体消防策略  
 ..... 董乃进,沈学军,李香凡,郭大刚,马莉莉 104  
 地铁地下车站防排烟设计浅论..... 刘江 111  
 城市轨道交通(郊区段)山岭隧道消防模式探讨与分析..... 程第 116

### 其他

高速地铁隧道压力波研究及隧道断面的拟定..... 刘伊江 119  
 高海拔隧道施工工程机械尾气排放试验研究..... 张仕杰 124  
 西安公共建筑热环境调查分析..... 袁涛,李剑东,王智超 128  
 我国多热源大型供热管网的研究现状..... 马琳 131  
 大型铁路站房高架设备层综合管线设计..... 高辉,李国富 134  
 某铁路综合生产办公楼太阳能集中热水系统设计探讨  
 ..... 李早,高春辉 137

《铁道标准设计》投稿须知..... 140

# CONTENTS

## Air Condition

Discussion on Energy-Saving Design and Indoor Environment of Buildings at New Guangzhou Railway Station .....	Guo Xuhui	1
Discussion on Distribution Mode of Air Conditioning Machine Rooms in Waiting Hall of Railway Passenger Station .....	Huang Baomin and et al.	8
Confirmation of Indoor State Parameters from All Air System without Humidity Function in Winter and Analysis on Water Condensation Phenomenon at Mixed Wind Section .....	Guo Haichao	11
Analysis on Simulation for Space Air Diffusion in Cold Air Distribution Conditioning System .....	Li Sensheng	14
Discussion on Air Conditioning Tank and Surface Heat Exchanger System for Screen Door in Rail Mass Transit .....	Zhao Hongying	18
Exploration for Calculative Methods in Air Conditioning Cooling Load Engineering .....	Gong Hanping	21
Discussion on Controlling Strategy for Frequency Conversion of Ventilation and Air Conditioning System for Public Area in Metro .....	Huang Zemao	24
Researches and Applications of Technology for Water Treatment of Air Conditioning in Beijing Metro .....	Xu Chuanhan	26
Analysis on Operation Conditions and Indoor Heat Environment of Cooling Supply System through Floor .....	Sui Xuemin and et al.	28
Discussion on Air Conditioning System for Dry Cooling Condition of Fan Coil Unit .....	Zhang Hui	32
Exploration for Applications of Energy-Saving Ecological Evaporative Cooling and Radiation Air Conditioning System in Residential Buildings .....	Zheng Xiaoli and et al.	37
Associated Applications of Displacement Ventilation and Other Air Conditioning Techniques .....	Zhao Qiyue	41
Discussion on Cooling Supply through Floor Panel Radiation .....	Zhao Yu	44
To Confirm Indoor Designed Parameters of Ventilation Air Conditioner in Urban Metro Engineering of Some North Seaside City .....	Huang Zemao	47

## Ventilation

Analysis on Applications of Energy-Saving Screen Door System in Xi'an Metro .....	Guo Yongzhen	48
Discussion on Concentration Limits of CO in Tunnels Based on Developed CFK Equation .....	Ye Wei and et al.	51
Preliminary Scheme on Ventilation of Qingdao Metro Line 2 Passing through Subsea Tunnel as Well as Design on Its Smoke Management .....	Cao Shuyong	56
Calculation of Ventilation Air Volume in Construction of Long Tunnels in Plateau .....	Zhang Shijie	60
Discussion on Influence of Exhaust Shafts with Different Types in Metro on Ventilation Effect of Tunnels .....	Han Yun and et al.	62
Designing Scheme on Ventilation and Smoke Control of in Hengyan Expressway Tunnel in Case of Fire Disaster .....	Xie Xiaoqing and et al.	65
Exploration for Applications of Double-Piston Air Duct System for Screen Door in North China .....	Han Ping	67
Analysis on Calculation of Heat Value and Ventilation Rate in Urban Cable Tunnels .....	Peng Jinlong and et al.	70
Analysis on Calculation of Ventilation Volume through Energy-Saving Screen Door System .....	Feng Lian and et al.	73
Discussion on Optimum Vertical Spacing of Jet Fans in Metro .....	Zeng Zhen and et al.	76
Comparison of Modes for Space Air Diffusion in Negative-Pressure Wards .....	Gao Huang	79

## Heat Pump

Analysis on Applications of Coupled System for Solar Energy Ground Source Heat Pump .....	Shen De'an	82
Design on Heat Pump System for River Source and Development of Evaluation Software as Well as Their Applications in Engineering .....	Chen Ming and et al.	86
Discussion on Spacing of Buried Pipes in Ground Source Heat Pump at Some Passenger Transportation Station in Shanghai .....	Bao Qian and et al.	89
Discussion on Restorative Characteristics of Ground Temperature in Large-Scale Ground Source Heat Pump .....	Liu Jun and et al.	93
Analysis on Exergy Efficiency of Heat Pump System in Water Sources and Discussion on Energy Saving .....	Li Cuodong	96
Technology for Applications of Contamination Water Heat Pump System in Beijing South Railway Station Project .....	Wei Qiang	99

## Fire Fighting

Strategy for Integrated Fire Fighting at Futian Underground Railway Station .....	Dong Naijin and et al.	104
Design on Smoke Management at Underground Station in Metro .....	Liu Jiang	111
Discussion and Analysis on Firefighting Mode for Mountainous Tunnels (Suburban Section) in Urban Mass Transit .....	Cheng Fu	116

## Others

Discussion on Pressure Wave in High Speed Metro Tunnel as Well as Sketches for Tunnel Cross Section .....	Liu Yijiang	119
Tests on Mechanical Automobile Emission in Construction of High-Altitude Tunnels .....	Zhang Shijie	124
Investigation and Analysis on Heat Environment of Public Buildings in Xi'an .....	Yuan Tao and et al.	128
Discussion on Current Conditions of Large-Scale Heat Supply Network with Multiple Heat Sources in China .....	Ma Lin	131
Design on Integrated Pipes and Cables on Elevated Equipment Floor at Large-Scale Railway Station .....	Gao Hui and et al.	134
Exploration for Design on Solar Energy Concentrated Heat Water System in Some Railway Office Building for Integrated Production .....	Li Zao and et al.	137

## RAILWAY STANDARD DESIGN (Monthly)

**Supplementary Issue 2, 2010 (Serial No.583) (Since 1957)**

### Competent Authority:

China Railway Engineering Corporation

### Sponsor:

China Railway Engineering Design & Consultant Group

Chief Editor: Liu Jiafeng

### Edited & Published by:

The Editorial Office of Railway Standard Design

Address: No. 15, Guang'an Road, Fengtai District  
Beijing China

Post Code: 100055

Tel: (86-10)51823423 51825093

Fax: (86-10)51823263

Http://www.tdbsb.com

E-mail:tdbsb@263.net

### Subscribing Place:

The Editorial Office of Railway Standard Design

**Publishing Code:** ISSN 1004-2954

CN 11-2987/U

Domestic Distributing Code:82-765

### General Distributor for Foreign Subscribers:

China International Book Trading Corporation (CIBTC)

Foreign Service Distribution Code:M1777

### Advertising License Number:

Jing-Feng-Gong-Shang 0082

**Publishing Date:** October 20, 2010

**Price:** ¥50.00 Yuan RMB