

Fire Science and Technology

(monthly)

Founded in 1982

Vol.38, No.6, June 2019

Unit in Charge: Ministry of Emergency Management of the People's Republic of China

Sponsor: China Fire Protection Association

Undertake: Tianjin Fire Research Institute
of the Ministry of Emergency Management
China Fire Magazine

President(Editor in Chief): Ge Mingli
Editorial Office of Fire Science and Technology

Executive Editor in Chief: Zhang Liguo

Editorial Office of Fire Science and Technology
Zhengming
Editor in Chief: Song Bo

Assistant Editor in Chief: Yang Zhenming

Chief Editor: Wang Tieqiang

Director

Assistant Editor: Wang Wangang

Editorial Director: Xing Yujun

Editorial Panel: Liang Bing, Dong Li,

Mao Xing, Li Yanna

Publisher and Editor: Editorial Office of Fire Science and Technology, 110 South Weijin Road, Tianjin 300381, China

Tel: (86-22)23383612/23920225

Fax: (86-22)23387274

E-mail: fire@xflkj.com.cn

URL: http://www.xflkj.com.cn

Advertisement: Yang Chunxu, Li Yanyan

Advertisement/Distribution Department

Tel: (86-22)23387276

E-mail: guanggao@xflkj.com.cn

Subscription: Editorial Office of Fire Science and Technology

Overseas Distributor: China International Book Trading Corporation(M1508)

CSSN: ISSN 1009—0029
CN 12—1311/TU

Publishing Date: 2019—06—15

Price: ¥30.00

Oversea Price: \$ 15.00

CONTENTS

Fire theory study

- Fire resistance of the recycled concrete filled double skin tubes columns exposed to three-side fire ZHANG Yu-zhuo, LI Xiao-ting, LV Xue-tao(753)
Study on pyrolysis characteristics and spontaneous combustion risk of wood chaff powder from density board CHEN Qin-pei, CHEN Ying-chun, ZHOU Tian-nian, et al.(757)
Study on strength and structure damage rules of lightweight aggregate concrete under fire temperatures XU Rui-yu, XIAO Qing-feng(760)
Combustion characteristics and fire risk of flammable fabric-latex structure HU Yi-wei, MA Jie, HUANG Dong-mei, et al.(764)
Simulation study on pool fire characteristics in large propylene tank WU Jun-tao(767)
Research on carbon monoxide generation velocity of materials with non-smolder characteristics LI Xi-li(771)
Experimental study on explosion characteristics and explosion suppression of micron silicon dust WEI Yuan-meng, WANG Qing-hui, YANG Xiao-ming, et al.(775)
Effects of ambient atmosphere on thermal decomposition behaviors of typical cable hose material WANG Zhi-chao(780)
The relationship between water loss characteristics and combustibility of woody plants branch with leaf LI Shi-you, LUO Jing, ZHANG Qiao-rong, et al.(783)

Building fire protection design

- Effect of evacuation stairs on evacuation efficiency in super high-rise buildings XIE Tian-guang, LU Shi-chang, HUANG Xin(786)
Analysis of factors affecting evacuation and risk assessment of extra large gymnasiums hosting events ZHANG Chao, LUO Chuan-ting(789)
Study on personnel evacuation from high-rise building in fire LIU Shi-song, MA Hong-yan, JIAO Yu-yang(794)
Study on influence of fire source location on temperature field of underground pipe gallery WANG Pu-fan, ZHU Guo-qing, WANG Zhan(799)
The study of gas leakage and diffusion law on utility tunnel's gas tank YUAN Xin-ran, XU Shu-hui, XU Rong-ji, et al.(802)
Research of transparent fire partition room used as building fire proofing interconnection port XIE Yuan-yi, LU Guo-jian, HUANG Xiao-lu, et al.(807)
Study on the effect of mechanical smoke exhaust velocity on smoke exhaust efficiency in a flat space ZHOU Zhi-zhong, HUANG Ya-dong, XU Liang, et al.(809)
The influence of height of the air-supplement on mechanical smoke exhaust effectiveness SUN Guo-xiang(812)
Numerical simulation method for controlling fire spread in stilted building of Dong nationality YE Yan-bing, ZHAI Ying-ying, MA Li-jing, et al.(814)
Study on the longitudinal velocity distribution of tunnel with multiple fans WANG Jun-heng, FANG Zheng, MA Tian-you(817)

Design of fire extinguishing system

- Experimental study on the feasibility of high-volume compressed air foam monitor HU Cheng, CHEN Tao, BAO Zhi-ming, et al.(820)
Performance study of a mechanical pump-compressed gas foam system TAN Long-meि(822)
Discussion on single-row arrangement design of sprinkler in automatic sprinkler fire extinguishing system YANG Bing-jie, WU Yan-guo(825)
Design of direct-swirl premixed water mist nozzle and experimental study on oil-fire extinguishing DU You-wei, GUO Yang, CAO Ai-xia, et al.(827)
Study on the influence of fine water mist particle size on fire extinguishing effect of cable cabin in underground utility tunnel CHEN Bing-yuan, YANG Yong-bin, BING Chen, et al.(832)

Study of fire equipment

- Positioning system of fire fighting robot based on inertial navigation and ZigBee YANG Shuai, XUE Lan(837)
Study on the influence of humidity and heat coupling on the protective performance of protective clothing for proximity fire fighting ZHANG Guo-yun, GAO Ze-hua, ZHOU Ming-tao, et al.(840)
Application of Beidou navigation system in fire fighting and rescue ZHENG Ce, XIA Deng-you(844)
JACK-based simulation study of ergonomics of principal fire fighting trucks LI Qian-jin, CUI Jin-yi, SUN Chuan-ge, et al.(847)

Extinguishant and flame retardant material

- The influence of different factors on the bond and fire resistance of fire retardant coatings SONG Wei(850)
Decontamination performance of modified bentonite for aniline and nitrobenzene LU Lin-gang, LI Xiang-xin, SHI Xing-long(853)
Effects of mixed crystal TiO₂ on diatomite-based waterborne wood coating LI Xian-min, YUAN Guo-feng(857)

Fire and emergency rescue

- Three-dimensional precise tossing model with multi-factor coupling for rescue CONG Yu-zhou, MENG Yu-jie, AN Wei-guang, et al.(861)
Experimental study on the system error of fireman indoor inertial positioning based on ad hoc network LI Zeng, XUE Ran, ZHOU Mei-peng, et al.(864)
The optimization design of fire rescue positioning system based on UWB PAN You-shun, PENG Tian-hao, KANG Wan-jie(867)
Design of post-disaster search and rescue system based on near-field acoustic localization LUO Yi-jun, YIN Qi, Li Jin, et al.(870)

Emergency manage study

- Reliability analysis on flexural capacity of post-fire scoria concrete beams CAI Bin, ZHANG Bo, CAO Xiang-kuo, et al.(874)
Analysis on the current study situation of lithium ion battery fire hazard XING Zhi-xiang, LIU Min, WU Jie, et al.(880)
Research progress on safety of lithium-ion batteries under low pressure WANG Huai-bin, DU Zhi-ming(884)
Prediction of benzene leakage area concentration based on particle swarm support vector machine model CHENG Yun-fang, QIU Rong, WANG Zi-long, et al.(890)
Study of hazards of spill fire caused by road tank leaking SU Lin, ZHANG Yan(894)
Improved grey T-related degree in statistical analysis of fire losses MA Li, LIU Yi-xiang, JIA Nan, et al.(897)
The replacement value method and repair value method in fire loss statistics ZHANG Yu-wei(900)
Big data pipeline network risk assessment method based on deep learning WANG Xin-ying, ZHANG Hui-ran, ZHANG Rui-cheng, et al.(902)