

Fire Science and Technology

(monthly)

Founded in 1982

Vol.38, No.4, April 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

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)

ISSN 1009—0029
CN 12—1311/TU

Publishing Date: 2019-04-15

Price: ¥30.00

Oversea Price: \$ 15.00

CONTENTS

Fire theory study

- Numerical simulation method for building fire based on structural collapse phenomenon SHI Chao, GONG Zhi-zhi, LI Jian-wei, et al.(455)
Experimental study and analysis on temperature field of steel reinforced concrete frame ZHANG Chao, ZHAI Chuan-ming, WANG Guang-yong, et al.(459)
Effect of initial temperature on combustion characteristics of biomass diesel LIN Lin, XU Ming-jun(462)
Experimental study on coal dust cloud minimum ignition energy variation law of different coal quality LIU Tian-qi, ZHENG Qiu-yu, SU Chang-qing(465)
Experimental study on effects of longitudinal air flow and slope on burning rate of pool fire in the tunnel YU Nian-hao, MA Jun-qiu, CHEN Yi-dong, et al.(468)
Pyrolysis characteristics and kinetic analysis of larix gmelinii WANG Xin-ran, XIN Ying(472)

Building fire protection design

- Effects of ventilation through the top vent on smoke movement in high voltage cable tunnel LI Chen-ying, CHEN Jie, CHEN Hong, et al.(476)
Investigation on the critical exhaust volumetric flow rate for two point extraction ventilation in subway tunnel fires YUAN Zhong-yuan, XIE Yuan-yi, ZHAO Peng(479)
Smoke preventing and dispelling tactics base on cooperative effect of fixed installation and maneuverable smoke control equipments in subway station XIE Yuan-yi, LU Guo-jian, HUANG Xiao-lu, et al.(482)
Problems and prospects of Unity3D applied on evacuation simulation CHEN Li-li, LI Yu-jian, WANG Zuo, et al.(482)
Research on evacuation path planning of building fire protection based on BIM ZHOU Peng, WANG Hui-qin, LU Ying(489)
A method for calculating the pressure in positive pressure air supply systems SUN Yu-ping, ZHAO Guo-min(492)
Discussion on the fire protection design of an air traffic control tower KAN Qiang, YE Chao(495)
The influence of roof inclination on temperature distribution in fire of large space CHU Qian, ZHANG Jian, SONG Zhi-gang, et al.(497)
Fire design analysis and fire risk assessment of a gymnasium ZHAO Wei-gang, YANG Fang, YAO Hao-wei, et al.(502)
Full-scale experimental study of fire hazard of building with staircase leading to the top in the middle YUAN Man, ZHU Meng-ru, LI Xiao-qiang(504)
Study on the fire characteristics of single-function space WANG Yue-qiang, CHEN Bao-sheng(508)

Design of fire extinguishing system

- Fire extinguishing test of power lithium ion battery by water mist with additive ZHOU Zheng, YANG Jian-hua, ZHU Ping, et al.(512)
Application of ultrafine dry powder in intelligent parking garage GAO Xiang-yuan, WAN Jie(516)
Analysis on the effect of fine water mist curtain blocking fire smoke spreading in subway tunnel CHENG Ming, LI Ye, REN Ye-xin(519)

Study of fire equipment

- Intelligent fire detection method based on fuzzy neural network DENG Li-wen, LIU Xiao-jun(522)
Research on the application of unmanned aerial vehicle in fire communication CUI Yan-chen, WU Li-zhi, ZHU Hong-wei, et al.(526)
An AR aided decision-making system for fire fighting based on dynamical environment monitor CHENG Yang-dong(529)
Research on sand-throwing fire-extinguishing equipment based on special chassis of automobile WANG Chuan-chuan, KANG Shuai, WEI Guang-juan(532)
Dynamic simulation analysis of telescopic excavating arm of rescue vehicle DONG Shuan-lao, LIU Yang, GUAN Pei-peng, et al.(535)

Extinguishant and flame retardant material

- Application of ecofriendly fluorocarbon surfactant in fire extinguishing agent CHEN Yong-gang, BO Hai-dong, JIA Xu-hong, et al.(538)
Effect of ultraviolet shielding agent on fire-retardant coatings for steel structures LIU Dan, WANG Jun-sheng, LIN Gui-de, et al.(541)

Fire and emergency rescue

- Requirement analysis of firefighting equipment for petrochemical fire fighting LUO Yang-hong, LIU Jing, WANG Wen-ye(545)
Construction and implementation of China's aviation emergency rescue system SHAO Wen-wu, JIANG Yan-yan, HUANG Tao(549)

Emergency manage study

- Dynamic multi-attribute emergency decision making method based on cumulative prospect theory ZHANG Zhi-xia, XUE Ying(552)
Prediction for ignition time of wood based on BP neural network ZHAI Chun-jie, TANG Song-ze(557)
Comparison of three machine learning classification models of the risk assessment of LNG leakage ZHOU De-hong, LI Zuo, YIN Bin, et al.(561)
Electrical fire risk assessment method based on multi-data fusion YAN Jun(566)
Dynamic analysis of fire bibliometrics based on download data DONG Li, MAO Xing, LI Yan-na, et al.(570)
Comparative analysis on fire control between Hainan and China Taiwan HAN Zi-zhong(573)
Calculation of evacuation distance of HCN in flue gas of tobacco GE Wei-wei, WANG Ji-hong(576)
Numerical simulation of natural gas on diffusion process of unattended well station with sulfur WANG Wen-he, LUO Huo-hong, DONG Chuan-fu, et al.(580)
Construction and research of fire product library platform based on BIM ZHANG En-pu, WANG Jia, ZHANG Ying-cong, et al.(583)
Studying on a fast test method for fire resistance limit of wood flame door MENG Ming-zhao, LONG Hai, SU Yu, et al.(587)
Analysis and suggestion of fire risk in smoldering process LI Ye(589)

Fire investigation and analysis

- Experimental study on the capacity of overloaded copper wire igniting magnesium powder SHI Yuan, ZHANG Jin-zhuan, TIAN Chen-zheng(592)
The study of kinetics mechanism on paint thinner with matrix in fire scene FANG Qiang, LIU Ling, MENG Tao, et al.(595)
Preliminary study on the fire characteristics of power lithium battery WANG Peng(599)