



ISSN 1006--8023  
CN23—1388/S

中国高校优秀科技期刊

中国科学评价研究中心（RCCSE）核心期刊

中国科技论文统计源期刊（CJCR）中国科技核心期刊

科技引文数据库（SCD）期刊

中国科技论文在线（[www.paper.edu.cn](http://www.paper.edu.cn)）

# 森林工程

FOREST ENGINEERING

SEN LIN GONG CHENG

第36卷  
Vol.36

第5期  
No.5

2020

ISSN 1006-8023



09>

9 771006 802202

东北林业大学

中国林学会森林工程分会

(2020年09月)

## 目 次

### · 森林资源建设与保护 ·

- 林分密度对杂种落叶松人工林土壤呼吸的影响 ..... 舒碧川,孙晓阳,张彦东(1)  
不同林分密度原始红松林枯落物和土壤的持水特性 ..... 刘忠玲,吕跃东,姚颖(8)  
大兴安岭地区降水量变化及干湿期特征分析 ..... 任東宇,刘滨辉,廉陆鶴,康雨昌(16)  
落叶松凋落叶水提液对苗圃土壤微生物数量和土壤酶活性的影响  
..... 刘莹莹,苏妮尔,赵彩鸿,杨玲(24)  
施肥对水曲柳林木叶片 SPAD 值的影响 ..... 张亚伟,孙海龙,郑鸿权,卫月华(34)  
高寒地区钙果叶片表形特征差异分析 ..... 张巍,刘运伟,徐宜彬,李阳,任伟超(40)  
吉林省辽河流域土地利用类型演变过程研究  
..... 张大伟,胡长群,何怀江,包广道,王梓默,刘婷,燕红,马琼芳,郝欣宇,罗也(45)  
2001—2017 年青海省 NDVI 时空变化特征及其对气候因子的响应 ..... 陈文静,杨从从(54)

### · 木材科学与工程 ·

- 稀释剂对聚氨酯涂料性能和苯系物释放的影响 ..... 赵瑞,肖娉娉,李康璐,陈祥宇,周阳,李慧芳,沈隽(62)  
板式部件的 UV 辊涂工艺研究 ..... 陈刚,王金欢,杜德春,张丰,郭晓磊(73)  
装载率对饰面胶合板 VOCs 释放影响的研究 ..... 黄天顺,许可,尚昱忻,赵乐阳,沈星雨,沈隽,曹田雨(78)

### · 森工技术与装备 ·

- 面向温差发电装置的相变散热器设计与测试 ..... 张雨琪,徐道春,李文彬(85)  
基于 H $\infty$  理论的主动悬架状态反馈控制 ..... 詹长书,曹先腾(92)  
碱热处理生物质碳源材料比选研究 ..... 陈帅全,张驰,王印,荆肇乾(99)

### · 道路与桥梁 ·

- 基于流变参数的咖啡渣炭改性沥青抗老化性能分析 ..... 吉淳,赵双,彭超,山云辉,程承(106)  
压实度对苏打型盐渍土冻融特性影响研究 ..... 宫滢,王正君,赵安平(112)

# Forest Engineering

( Sep. ,2020)

Vol. 36

No. 5

## CONTENTS

### • Forest Resources Development and Conservation •

Effects of Stand Density on Soil Respiration in Hybrid Larch Plantations

..... SHU Bichuan, SUN Xiaoyang, ZHANG Yandong(1)

Water – holding Characteristics of Litter and Soil of Original Korean Pine Forests Stands with Different Densities

..... LIU Zhongling, LYU Yuedong, YAO Ying(8)

Analysis of the Variation of Precipitation in the Daxing' an Mountains and the Characteristics of the Dry and Wet Periods

..... REN Jianyu, LIU Binhu, LIAN Luyao, KANG Yuchang(16)

Effects of Water Extracts of *Larix chinensis* Litters on the Microbial Quantity and Enzyme Activity of Soil in Nursery

..... LIU Yingying, SONOR, ZHAO Caihong, YANG Ling(24)

Effects of Fertilization on Leaf SPAD Values of *Fraxinus mandshurica*

..... ZHANG Yawei, SUN Hailong, ZHENG Hongquan, WEI Yuehua(34)

Difference Analysis in Leaf Phenotypic Characteristics of *Cerasus humilis* in Cold Region

..... ZHANG Wei, LIU Yunwei, XU Yibin, LI Yang, REN Weichao(40)

Study on the Evolution Process of Land Use Types in Liaohe River Basin of Jilin Province

..... ZHANG Dawei, HU Changqun, HE Huaijiang, BAO Guangdao, WANG Zimo, LIU Ting, YAN Hong, MA Qiongfang, HAO Xinyu, LUO Ye(45)

Spatiotemporal Change Characteristics of NDVI and Its Response to Climate Factors in Qinghai from 2001 to 2017

..... CHEN Wenjing, YANG Congcong(54)

### • Wood Science and Engineering •

The Influence of Diluent the Properties of Polyurethane Paint and the Release of Benzene Series

..... ZHAO Rui, XIAO Pingping, LI Kangshu, CHEN Xiangyu, ZHOU Yang, LI Hufang, SHEN Jun(62)

Study on UV Roller Coating Technology of Panel Parts

..... CHEN Gang, WANG Jinhuan, DU Dechun, ZHANG Feng, GUO Xiaolei(73)

Study on VOCs Release from Overlaid Plywood by Loading Rate

..... HUANG Tianshun, XU Ke, SHANG Yuxin, ZHAO Yueyang, SHEN Xingyu, SHEN Jun, CAO Tianyu(78)

### • Forest Engineering Technology and Equipment •

Design and Test of Phase Change Materials for Thermoelectric Power Generation Device

..... ZHANG Yuqi, XU Daochun, LI Wenbin(85)

State Feedback Control of Active Suspension Based on  $H\infty$  Theory ..... ZHAN Changshu, CAO Xianteng(92)

Comparative Study on Biomass Carbon Source Materials for Alkali Heat Treatment

..... CHEN Shuaiquan, ZHANG Chi, WANG Yin, JING Zhaoqian(99)

### • Roads and Bridges •

Analysis of Anti – aging Performance of Coffee Ground Charcoal Modified Asphalt Based on Rheological Parameters

..... JI Chun, ZHAO Shuang, PENG Chao, SHAN Yunhui, CHENG Cheng(106)

Influence of Compaction Degree on Freezing – thawing Characteristics of Soda Saline Soil

..... GONG Ying, WANG Zhengjun, ZHAO Anping(112)