



目次

创刊词

- 001 以学术之光赋能特种设备高质量发展 中国特种设备检测研究院
002 聚力特种设备创新 创办一流学术期刊 陈学东

先进制造

- 003 氮化镓单晶制备用高温超高压反应釜设计与制造
陈学东 周煜 姚佐权 汪兵 范海俊 牛铮 王宇轩 程经纬 徐双庆 孟刚 乔焜
009 超高压气井井口阀门失效机制与防护技术研究进展
张来斌 武胜男 廖浩文 张绪亮
022 特大型加氢反应器关键建造技术
蒋文春 赵春辉 王金光 董汪平 袁继军 潘晓栋 类成龙 涂善东

专题综述

- 036 智能压力容器：从运维到全寿命周期的安全智能技术
轩福贞 杨斌 贾国栋 赵云妹 赵鹏 宫建国 王海杰 邵珊珊
064 特种设备无损检测技术发展现状与展望 沈功田
080 电站锅炉安全科技研究二十年回顾与展望
赵钦新 梁志远 王硕 车畅 王静杰 邵怀爽 杨旭
091 深度调峰工况下电站锅炉耐热钢疲劳-蠕变交互作用研究进展
阿依多斯·托力肯 刘雪敏 吴元毅 郭慧娜 刘鹏 吴玉新

理论创新

- 100 基于弹塑性的圆筒许用轴向压缩应力计算方法研究
焦鹏 许滢洋 丁之桓 张明亨 周庆华 陈志平

试验研究

- 110 基于微波反射法的GFRP复合材料缺陷定位及成像研究
刘增华 张庆 张晨琦 李瑞 朱华兵 何存富
116 铝合金表面高熵合金电子束熔覆层性能调控研究
冯道臣 徐健城 刘国豪 郑逸飞 郑文健 杨建国

CONTENTS

Founding Statement

- Empowering the High Quality Development of Special Equipment with the Light of Academics
China Special Equipment Inspection and Research Institute 001
- Unite Efforts for Special Equipment Innovation, Establish a Top-Tier Academic Journal CHEN Xuedong 002

Advanced Manufacturing

- Design and Manufacturing of High Temperature and Ultra High Pressure Reactor for Growing Gallium Nitride Single Crystal
CHEN Xuedong ZHOU Yu YAO Zuoquan WANG Bing FAN Haijun NIU Zheng WANG Yuxuan CHENG Jingwei
XU Shuangqing MENG Gang QIAO Kun 003
- Research Progress on Failure Mechanisms and Protection Technologies for Wellhead Valves in Ultra-High-Pressure Gas Wells
ZHANG Laibin WU Shengnan LIAO Haowen ZHANG Xuliang 009
- Key Manufacturing Technologies for Ultra-large Hydrogenation Reactors
JIANG Wenchun ZHAO Chunhui WANG Jinguang DONG Wangping YUAN Jijun
PAN Xiaodong LEI Chenglong TU Shandong 022

Topical Reviews

- Intelligent Pressure Vessels: Safety Intelligence Technologies from Operation and Maintenance to Full Life Cycle
XUAN Fuzhen YANG Bin JIA Guodong ZHAO Yunmei ZHAO Peng GONG Jianguo WANG Haijie SHAO Shanshan 036
- The Development Status and Prospects of Non-destructive Testing Technique for Special Equipment
SHEN Gongtian 064
- A Twenty-year Review and Prospect of Safety Technology Research for Utility Boilers
ZHAO Qinxin LIANG Zhiyuan WANG Shuo CHE Chang WANG Jingjie SHAO Huaishuang YANG Xu 080
- Research Progress on Fatigue-creep Interaction of Heat-resistant Steel for Utility Boilers under Deep Peak Shaving Conditions
AIDOS Tuoliken LIU Xuemin WU Yuanyi GUO Huina LIU Peng WU Yuxin 091

Theoretical Innovations

- Research on Calculation Method for Allowable Axial Compressive Stress of Cylinders Based on Elasto-Plastic Theory
JIAO Peng XU Huangyang DING Zhihuan ZHANG Mingheng ZHOU Qinghua CHEN Zhiping 100

Experimental Research

- Study on Defect Localization and Imaging of GFRP Composites Based on Microwave Reflection Method
LIU Zenghua ZHANG Qing ZHANG Chenqi LI Rui ZHU Huabing HE Cunfu 110
- Research on the Performance Regulation of High-entropy Alloy Electron Beam Cladding Layer on Aluminum Alloy Surface
FENG Daochen XU Jiancheng LIU Guohao ZHENG Yifei ZHENG Wenjian YANG Jianguo 116