# **Contents**

### **Surveies**

#### Mining and Metallurgical Engineering

Present Situation and Development Trend of Gas Emission Prediction Technology in Coal Face ................................ WANG Xiao-lei, JI Zhi-gang, XIE Yi-ting, YANG Jun-ke, WU Peng, WANG Xin, GUO Xiang-qian(9)

#### Petroleum and Natural Gas Industry

Review of Critical Liquid Unloading Rate Models and Liquid Loading Models for Gas Well Producing Water

DOU Liang-bin, CHENG Jia-rui, ZHANG Ning-sheng(20)

#### **Automation and Computational Technology**

Image Semantic Segmentation Research Process Based on Deep Learning ....... LI Xin-ye, SONG Wei(27)

### **Papers**

#### **Mechanics**

LÜ Ping, ZHANG Zhi-chao, SUN Sheng(33)

Numerical Simulation of Flow Turbulence Characteristics in Precalciner and Effect on Particle Motion

····· BIAN Yong-huan, XU Dong-sheng, LUO Xiao(42)

#### Physics

Analysis of Acoustic Transmission Characteristics Based on Artificial Gradient Structure ...... LIANG Chen, LI Yi-jun(48)

#### Chemics

#### **Astronomy and Geosciences**

Evolution of Impervious Surface Pattern in Xining City Based on Landsat Imagery ...... LIU Zu-yu, YANG Wei-fang,

YAN Hao-wen, WU Xiao-suo, HUANG Yu-han(60) Vertical Temperature Stratification Analysis of a Low Temperature Rain and Snow Freezing Weather in Jiujiang City

ZHANG Jing-jing,

ZHENG Jing, MEI Ting, NIE Zhi-qiang(67)

Analysis of the Type of Pyrite and Its Relationship with Uranium Mineralization in Ore Target Layer of Mongqigur Sandstone-type Uranium Deposit, Xinjiang ................................... HUANG Guang-wen,

HUANG Guang-nan, HE Zhong-qiang, PAN Jia-yong(75) Discussion on Well-controlled Seismic Data Processing Technology ....... XU Chun-mei, ZHANG Yue, LIANG Shuo-bo(85) Development Characteristics of Redbed Karst and Formation Mechanism of Ground Collapse—Taking Xianning for Example

... XIAO Pan, PENG Ke, LI Xue-ping, WU Li-qing(93) Sedimentary Characteristics of Continental Shelf Sand Bodies and Their Significance for the Oil-gas Exploration in Wenchang Sag of Pearl River Mouth Basin ...... LI Wei, ZUO Qian-mei, LIU Ping, CHEN Ya-bing, ZHOU Gang(100)

## Volume 19 Number 33 (Sum 502)

#### **Biology**

Construction and Expression Identification of Autophagy Detection Plasmid pLVX-mRFP-EGFP-LC3

LI Fang-yu, ZHAO Da-qing, WANG Jia-wen(104)

#### **General Industrial Technology**

LU Han-wen, YANG Zhi-cheng(112)

Improvement of Sound Holographic Algorithm Based on Image Source Method to Suppress Reverberation Interference

...... ZHANG Hong-yu, GUO Wen-yong, HAN Jiang-gui, CHEN Han-tao, XIA Jing(118)

#### Mining and Metallurgical Engineering

The Deformation Law and Support Technology of Surrounding Rock in Coal Bearing Strata Tunnel ...... ZHANG Xuan,

XIE Dong-hai, YUAN Zhi-gang, SU Bo(125)

Influence of Excavation on Stability of Slope with Weak Interlayer in Open Pit Mine: A Case of Nanfen Iron Open Pit

...... SUN Guang-lin, PU Juan, HU Jiang-chun, BIAN Ya-dong, TAO Zhi-gang (131)

#### **Petroleum and Natural Gas Industry**

Zheng Huan, Xie Rui-jie, Dong De-sheng, Xu De-yu(138) Test Analysis Methods and Productivity Evaluation Technology in Deep-water High Production Gas Reservoir, South China Sea

····· LI Hao, ZHOU Wei,

WANG Lai-chao, TIAN Wen-rong, NIU Xue(145)

A New Method for Evaluating the Stability of Gas Drilling Well-bore for Gravel Layer ...... LIU Hou-bin, WANG Jia-jun,

WANG Yan-min, YANG Jun-qi, XU Li-qun(150)

Preparation of a Highly Effective Environmentally Friendly Lubricant ZYA and Its Applicability in Silicate System

····· ZHANG Jing-jing,

XU Ming-biao, YOU Fu-chang, HUA Guo-yu(156) Wettabity Experiment of Core and Mico-mechanism during Highmultiple Water Flooding in Heavy Oil Reservoir

DAI Zong, JIANG Jun,

ZHAN Guo-wei, ZHAO Yong, YU Xiao-qun(169)

Research and Application of Gel Oily Sludge Profile Control System in Changqing Oilfield ....... CHEN Si-ya,

SU Gao-shen, CHEN Zhi-gang,

HU Jia-jie, YANG Huan, LUO Yue, LU Yujun(178)

#### **Electrical Technology**

Multi-parameter Identification of CO-Evolutionary Particle Swarm Optimization Algorithm Based on Hierarchical-particle Immune for Doubly Fed Induction Generator

····· WU Bi-qiao, ZENG Shi, WANG Tian-yi(185)

```
Power Balance Modulation Strategy Based on Carrier Rotation for
                                                          An Improved Image Defogging Algorithm Based on Dark Channel
                                                          Prior ..... WANG Feng,
Hybrid Cascaded Inverter
     ····· HU Wen-hua, MENG Xin-yu, LIU Jian-feng(192)
                                                                       LI Pei-ling, LIANG Yi-tao, ZHANG Xiao(313)
Research on Three-mode Smooth Switching Control Strategy
                                                          Stereo Image Quality Evaluation Based on Image Content and
Based on Four Switch Buck-Boost ..... KANG Jia-vu,
                                                          Binocular Characteristics ...... WANG Yang,
          CHEN Xu-yang, LIU Jia-chen, WANG Su-e(199)
                                                                         XIANG Xiu-mei, LU Jia, YU Zhen-xin(318)
Optimal Operation of Integrated Energy System Combined Cool-
                                                          Image Denoising Algorithm of Shallow Ice-penetrating Radar
ing Heating and Power Based on Multi-objective Algorithm
                                                          Based on Multi-scale Learning-type Dictionary
      ..... TAO Jing,
                                                               ...... ZHANG Yu-zhong, DOU Yin-ke,
     XU Wu, LI Yi-lin, HUO Yi-wen, ZHANG En-mu(205)
                                                                     TANG Xue-yuan, GUO Jing-xue, PAN Yao(324)
The Influence of Tower Deformation Process on the Safety of
                                                          Prediction of Drug-target Interaction with Manifold Regularized
Transmission Towers in the Mining Subsidence Area
                                                          Non-negative Matrix Factorization
     ····· YANG Gang,
                                                              ·········· YAN Xiao-ying, WU Ying, LI Run-zhou(329)
                  WANG Tian-zheng, WANG Da-wei(212)
                                                          Dynamic Gesture Segmentation and Recognition Based on Skin
On-line of Cable Partial Discharge Localization Method Based on
                                                          Color Detection in Complex Background ··· TANG Wen-quan,
Cable Frequency Characteristics and Signal Pulse Width
                                                                             XU Wu, WEN Cong, GUO Xing (335)
    ..... CHENG Jiang-zhou, TANG Yang,
                                                          Evaluation of Tourism Function of China's Key Cities Based on
       XIONG Shuang-ju, XIE Shi-yu, WANG Jin-feng (219)
                                                          Analytic Hierarchy Process ...... CHENG Ying-wen(341)
Equalization Technology Based on Concentric Multi-winding
                                                            Architectural Science
     · · · MOU Shi-rong, LIU Xiao-fang, YANG Shi-yan(224)
Voltage Control Technology of Distributed Generation System
                                                          Natural Visibility Measurement of Public Space in Primary and
Based on Magnetic Energy Regenerative Switch
                                                          Secondary Schools ...... LIU Feng,
     ...... ZHANG Jia-tao,
                                                                       HU Zhen-yu, TANG Yue, XIE Jiang-tao (349)
       ZHANG Li, ZHAO Sheng-nan, XUE Tian-liang (229)
                                                          Experimental Analysis of Dynamic Characteristics of Geogrid Re-
 Electronic and Communicational Technology
                                                          inforced Gravel Soil under Cyclic Dynamic Load
                                                              ..... WANG Jia-quan,
A Unique Massive Multiple Input Multiple Output Channel Feed-
back Based on Compressed Sensing · · · · LI Yi,
                                                              CHANG Zhen-chao, HUANG Shi-bin, WANG Qing(357)
                                                          Propagation Law of Pendulum-type Wave of the Block Rock with
            ZHAO Sai, TANG Dong, HUANG Man-lu(235)
Floor Identification Based on Wi-Fi/Barometric Combination
                                                          Heterogeneous Interlayer Distribution ...... JIANG Kuan,
     ..... SI Ming-hao,
                                                                                       QI Cheng-zhi, ZHU Bing-yu,
              WANG Yun-jia, SUN Meng, WANG Rui (243)
                                                                        BAN Li-ren, LU Zhen-hui, LI Tai-hang (365)
Simulation Algorithm of Optimal Beam Position Arrangement
                                                           Traffics and Transportations
Strategy for Phased Array Radar ..... CHEN Jian-ping,
                                                          Macroscopical Self-healing Performance of High Viscosity Modi-
                        LIU Zhi-zhong, YOU Li-zhi(250)
                                                          fied Asphalt ...... XI Chen-chen, WANG Yang-yang,
 Automation and Computational Technology
                                                                 DING Ming, CHENG Qin-ling, MENG Yong-jun(370)
Rock and Soil Catastrophe Early Warning Research Based on
                                                          Composites Operation Safety Analysis of Concrete Cable-stayed
Extreme Learning Machine and Entropy Method
                                                          Bridge without Back Stays ..... LIU Ji-cheng,
    ..... ZHANG Ning,
                                                                     XUN Jing-chuan, PENG Jing-rong, LI Yuan (376)
              LI Qing, LI Chuang-jiang, HE Yong-bo (258)
                                                          Analysis of Vibration Response of Surface Masonry Buildings un-
Knowledge Representation Learning Method with Attribute Infor-
                                                          der Tunnel Blasting Seismic Wave
mation ..... GUO Zhi, ZHENG Yan-bin,
                                                               ····· GONG Wei-zeng, DUAN Bao-fu,
     XIA Zhi-chao, BU Xiang-lin, HUANG Yong-zhong (265)
                                                                 ZHANG Xue-wei, SHEN Shi-zhan, SUN Ke-bin(383)
A Illumination Robust Online Loop SLAM Algorithm
                                                          The Posture and Damage Evaluation of a Occupant in Military
     ····· SUN Bo, GUO Zhong-hua, ZHENG Guo-guo (271)
                                                          Rolling ..... WANG Shi-da,
Design of Vehicle Cabin Overpressure Measurement and Control
                                                                          SUN Xiao-wang, FU Tiao-qi, LI Ming-xing,
System Based on Incremental Proportional-Integral-Derivative
                                                                          ZHAO Dong, GONG Biao, WEI Ran (390)
Control and Pulse Width Modulation ..... RAN Zhao-hui,
                                                           Aeronautics and Astronautics
CHEN Chang-xin, YUE Han, MA Tie-hua, FENG Hua (278)
An Efficient Reversible Data Hiding in Encryption Domain Based
                                                          The Simulation of DME/DME Ground Stations Deployment
on Lower-significant-bit Value Ordering ····· KONG Yong-jun,
                                                          Based on Geometric Dilution Precision
    ZHANG Min-qing, TU Guang-sheng, PENG Guo-yu(289)
                                                               ····· CHENG Qing, YANG Guang, MEI Jing-xian(396)
Emotional Classification Algorithm of Electroencephalogram Sig-
                                                          Non-transportation A2 General Airport Layout Planning Method
nals Based on Time-frequency Combination Characteristics
                                                             ······ ZHOU Yan, SHAO Quan, WANG Hao(402)
     ...... JIA Xiao-yun,
                                                          Design of SPARK Hyperspectral Satellite for Rapid Response
     WANG Li-yan, CHEN Jing-xia, ZHANG Peng-wei(295)
                                                              ··· GUO Chong-bin, LIU Shan-wu, CHEN Hong-yu(409)
Text Categorization of Hypertensive Medical Records Based on
                                                           Environmental and Safe Science
Machine Learning ....... HU Jing, LIU Wei, MA Kai(301)
```

The Purification Performance of Sorbent Based Filters for Tolu-

ene Gas Removal ...... LIU Wen-long, PEI Jing-jing(415)

Text Feature Selection Based on Genetic Algorithm

····· LIU Cheng-kai, WANG Bin-jun, WU Yong (307)