



*Frontiers of  
Information  
Technology &  
Electronic  
Engineering*

**Editors-in-Chief**

Yunhe PAN  
Aiguo FEI

**Administrated by**

Chinese Academy of Engineering

**Sponsored by**

Chinese Academy of Engineering  
& Zhejiang University

**Published by**

Zhejiang University Press

**Edited by**

Editorial Office of *Journal of  
Zhejiang University-SCIENCE A/B  
& FITEE*

**Printed by**

Hangzhou Shengyuan Printing  
Services Co., Ltd.

**Publication Date**

1st Week per Month

**Subscription**

Zhejiang University Press  
Postal distributing code: 32-324

**Contact**

Zhejiang University Press,  
148 Tianmushan Road,  
Hangzhou 310028, China  
Tel: +86-571-88273162  
Email: fitee@zju.edu.cn

**Price (Domestic)**

160 CNY/Issue

**ISSN 2095-9184**  
**CN 33-1389/TP**

# CONTENTS

## Review Articles

- 935 Satellite Internet of Things: challenges, solutions, and development trends  
Xiaoming CHEN, Zhaobin XU, Lin SHANG
- 945 Rational design of semiconductor metal oxide nanomaterials for gas sensing by template-assisted synthesis: a survey  
Yuanyang XUN, Siqi LI, Feiyu ZHANG, Yan HONG, Ke XU,  
Ligang CHEN, Song LIU, Bin LI

## Research Articles

- 964 A disk failure prediction model for multiple issues  
Yunchuan GUAN, Yu LIU, Ke ZHOU, Qiang LI, Tuanjie WANG, Hui LI
- 980 MyWAL: performance optimization by removing redundant input/output stack in key-value store  
Xiao ZHANG, Mengyu LI, Michael NGULUBE, Yonghao CHEN, Yiping ZHAO
- 994 A perceptual and predictive batch-processing memory scheduling strategy for a CPU-GPU heterogeneous system  
Juan FANG, Sheng LIN, Huijing YANG, Yixiang XU, Xing SU
- 1007 Explainable data transformation recommendation for automatic visualization  
Ziliang WU, Wei CHEN, Yuxin MA, Tong XU, Fan YAN, Lei LV,  
Zhonghao QIAN, Jiazhi XIA
- 1028 Filter-cluster attention based recursive network for low-light enhancement  
Zhixiong HUANG, Jinjiang LI, Zhen HUA, Linwei FAN

1045 A novel hybrid cryptosystem based on DQFrFT watermarking and 3D-CLM encryption for healthcare services

Fatma KHALLAF, Walid EL-SHAFAI, El-Sayed M. EL-RABAIE,  
Naglaa F. SOLIMAN, Fathi E. Abd EL-SAMIE

1062 Spatiotemporal distance embedded hybrid ant colony algorithm for a kind of vehicle routing problem with constraints

Zhenhui FENG, Renbin XIAO

1080 Electronically enhancing the long-range nanopositioning accuracy of a Lorentz force actuator

Bimal Jeet GOTEEA, Qianjun ZHANG, Wei DONG



*Frontiers of  
Information  
Technology &  
Electronic  
Engineering*