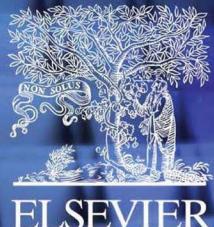
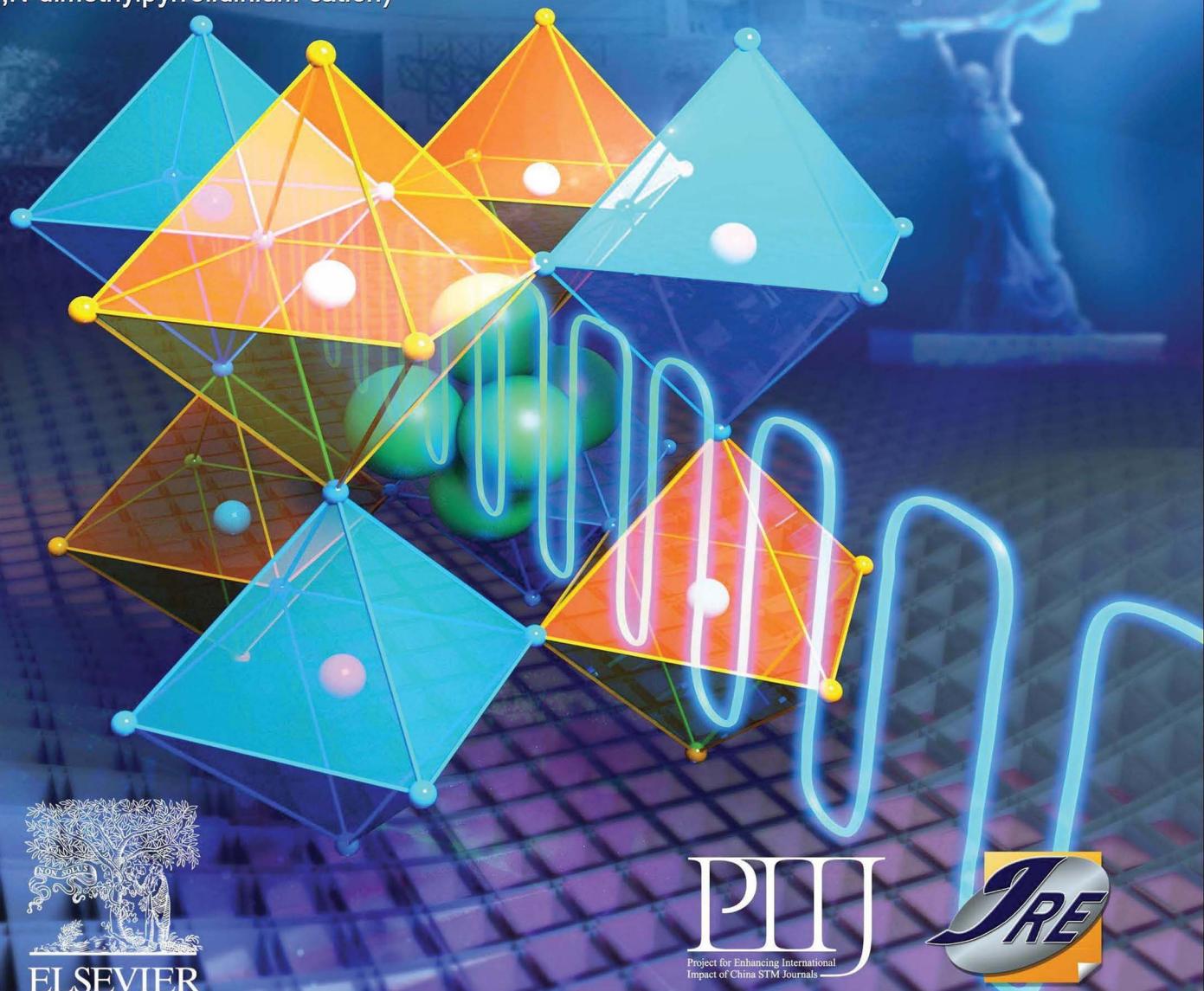


VOLUME 40 NUMBER 6
June 2022

ISSN: 1002-0721 e-ISSN: 2509-4963
CODEN JREAE 6

Journal of Rare Earths

Structural Phase Transition and Dielectric Switching in An Organic-Inorganic
Hybrid Rare-earth Double Perovskite-type Compound: $(DMP)_2LaRb(NO_3)_6$
(DMP = N,N-dimethylpyrrolidinium cation)



PIJ
Project for Enhancing International
Impact of China STM Journals

JRE

CONTENTS

INVITED REVIEWS

- Recent development in upconversion nanoparticles and their application in optogenetics: A review *Madhumita Patel, Maninder Meenu, Jitender Kumar Pandey, Pawan Kumar*, Rajkumar Patel*** 847

SPECTROSCOPY, LUMINESCENCE AND PHOSPHORS

- Nd^{3+} -sensitized upconversion nanoparticle coated with antimony shell for bioimaging and photothermal therapy *in vitro* using single laser irradiation *Solomon Tiruneh Dibaba, Yao Xie, Wensong Xi, Artur Bednarkiewicz, Wei Ren, Lining Sun** 862
- Optical properties of Nd^{3+} ions doped GdTaO_4 for pressure and temperature sensing *Pengyu Zhou*, Qingli Zhang, Fang Peng, Baoquan Sun**, Xiuming Dou, Bao Liu, Dandan Han, Yongzhou Xue, Kun Ding* 870
- Tunable emission, energy transfer and thermal stability of Ce^{3+} , Tb^{3+} co-doped $\text{Na}_2\text{BaCa}(\text{PO}_4)_2$ phosphors *Jiamin Tang, Jiayong Si*, Xiaoyi Fan, Yijia Liu, Guihua Li, Gemei Cai*** 878

RARE EARTH CATALYSIS

- In-situ* generation of platinum nanoparticles on LaCoO_3 matrix for soot oxidation *Hanwen Xu, Lirong Zeng, Lan Cui, Wei Guo, Cairong Gong*, Gang Xue*** 888
- Catalytic feasibility of Ce-doped LaCoO_3 systems for chlorobenzene oxidation: An analysis of synthesis method *Héctor Acosta Pérez, Carlos A. López, Luis E. Cadis, Fabiola N. Agüero** 897
- Fluorescent lamp promoted formaldehyde removal over CeO_2 catalysts at ambient temperature *Zhaoxiong Yan, Gang Huang, Geming Wang, Ming Xiang, Xiaofang Han, Zhihua Xu** 906

MAGNETISM AND MAGNETIC MATERIALS

- Magnetocaloric effect and slow magnetic relaxation behavior in binuclear rare earth based $\text{RE}_2(\text{L})_2(\text{DMF})_4$ ($\text{RE}=\text{Gd}, \text{Tb}$, and Dy) complexes *Zhenqian Zhang, Yuwei Wu, Haifeng Wang, Lingwei Li** 916
- Effects of Nd-Ga intergranular addition on microstructure and magnetic properties of heavy-rare-earth-free Nd-Fe-B sintered magnets *Jinhao Zhu, Guangfei Ding*, Lei Jin, Zhehuan Jin, Bo Zheng, Shuai Guo**, Renjie Chen, Aru Yan* 924
- Effect of nano-TiC dopant size on magnetic properties and corrosion resistance of hot-deformed NdFeB *Xiaoqiang Li, Jian Li, Kai Xu, Zhiwei Wang, Yu Bian, Yuxuan Shao, Chengchao Hu, Junjie Ni** 930

ADVANCED RARE EARTH MATERIALS

- Structural phase transition and dielectric switching in an organic-inorganic hybrid rare-earth double perovskite-type compound: $(\text{DMP})_2\text{LaRb}(\text{NO}_3)_6$ ($\text{DMP}=\text{N,N-dimethylpyrrolidinium cation}$) *Jiajun Ma, Qi Xu, Le Ye, Qinwen Wang, Zhixin Gong, Chao Shi**, Hengyun Ye, Yi Zhang** 937
- Relaxor behavior and superior ferroelectricity of Y_2O_3 -doped $(\text{Ba}_{0.98}\text{Ca}_{0.02})(\text{Ti}_{0.94}\text{Sn}_{0.04}\text{Zr}_{0.02})\text{O}_3$ lead-free ceramics *Sifan Wang, Qibin Liu*, Enpei Cai, Fanghui Mou, An Xue* 942

CHEMISTRY AND HYDROMETALLURGY

- Extraction mechanism and separation behaviors of low-concentration Nd^{3+} and Al^{3+} in $\text{P507-H}_2\text{SO}_4$ system *Hongyuan Zhang, Longsheng Zhao**, Xudong Zheng, Depeng Liu, Zongyu Feng, Yongqi Zhang***, Xiaowei Huang** 952
- Extraction and separation of yttrium from other rare earths in chloride medium by phosphorylcarboxylic acids *Guolong Wu, Zhifeng Zhang, Yanling Li, Wuping Liao** 958
- Neodymium naphthenate-loaded organic phase stripping using sodium oxalate *Jieying Zhou, Dongying Chen, Fei Niu*, Jikai Zhang, Xiaomi Hu, Ying Wu, Youming Yang**, Shili Zheng* 965
- Separation and recovery of rare earth from waste nickel-metal hydride batteries by phosphate based extraction-precipitation *Hailan Zhi, Shuainan Ni, Xiang Su, Wenqi Xie, Hepeng Zhang, Xiaoqi Sun** 974
- Behavior of phase transformation of Baotou mixed rare earth concentrate during oxidation roasting *Deliang Meng, Meng Wang**, Zongyu Feng, Chao Xia, Yanyan Zhao, Xiaowei Huang** 981
- Synergistic depression mechanism of Ca^{2+} ions and sodium silicate on bastnaesite flotation *Zhao Cao*, Zeyu Cheng, Jieliang Wang**, Yongdan Cao* 988

METALLOGRAPHY AND PYROMETALLURGY

- $\text{PrF}_3\text{-NdF}_3\text{-DyF}_3\text{-LiF}$ electrolyte system for preparation of Pr-Nd-Dy alloy by electrolysis *Zhengping Zuo, Yubao Liu, Xin Yang, Fengqin Liu** 996

RARE EARTH APPLICATIONS

- Effects of copper and manganese cations on cerium-based conversion coating on galvanized steel: Corrosion resistance and microstructure characterizations *Farzaneh Khast, Mesbah Saybani*, Ali Asghar Sarabi Dariani* 1002

1st Youth Editorial Board of Chinese Society of Rare Earths and Journal of Rare Earths

BAI Xue (白雪)	CHEN Cong (陈聪)	CHEN Guanying (陈冠英)	CHEN Kunfeng (陈昆峰)
CHENG Jie (程杰)	DU Yaping (杜亚平)	FANG Yikun (方以坤)	FENG Wei (冯伟)
GUO Hai (郭海)	GUO Shengping (郭胜平)	HE Chi (何炽)	HU Zhenpeng (胡振芃)
HUANG Bolong (黄勃龙)	Ka-Leung Wong (黄嘉良)	JIA Chunjiang (贾春江)	LEI Bingfu (雷炳富)
LI Jiang (李江)	LI Xinxiang (李新雄)	LIN Kun (林鲲)	LIU Fudong (刘福东)
LIU Ronghui (刘荣辉)	LIU Shuang (刘爽)	LIU Zhiwei (刘志伟)	LV Weiqiang (吕维强)
MA Ping'an (马平安)	MEI Lefu (梅乐夫)	QI Jianqi (齐建起)	QIAO Xusheng (乔旭升)
SHANG Mengmeng (尚蒙蒙)	SHI Wei (师唯)	TANG Changjin (汤常金)	WANG Liangshi (王良士)
WANG Sheng (王胜)	WANG Shu'ao (王殳凹)	WANG Yonggang (王永刚)	WU Yuntao (吴云涛)
XIA Zhiguo (夏志国)	XIAO Yanfei (肖燕飞)	XIE Xiaoji (谢小吉)	XU Xin (徐信)
XU Xuhui (徐旭辉)	XU Beibei (许贝贝)	YANG Guoping (杨国平)	YANG Tao (杨韬)
YAO Xiaojiang (姚小江)	ZHAN Wangcheng (詹望成)	ZHANG Fangfang (张方方)	ZHANG Qiwei (张奇伟)
ZHANG Yi (张毅)	ZHANG Yun (张云)	ZHENG Yanzhen (郑彦臻)	ZHOU Bo (周博)
ZHOU Jing (周晶)	ZHU Haomiao (朱浩淼)	ZHUANG Yixi (庄逸熙)	

JOURNAL OF RARE EARTHS (Monthly, Started in 1990)

稀土学报 (英文版)

Volume 40 Number 6 June 2022

Editor-in-Chief

Yan Chunhua

Copyright ©2022 by Editorial Office of Journal of Rare Earths, P. R. China

Administrated by China Association for Science and Technology

Sponsored by the Chinese Society of Rare Earths and GRINM Group Co., Ltd.

Edited and Published by Editorial Office of Journal of Rare Earths

Printed by the Beijing Speed Printing Co., Ltd.

Domestic Distribution Code: 2-613

Domestic Distributor: Editorial Office of Journal of Rare Earths, 2 Xinjiekouwai Dajie, Beijing 100088, China

<https://www.editorialmanager.com/JORES/default.aspx>

Tel: +86-10-82241182, 82241916; **E-mail:** jrechina@263.net; xtxb@grinm.com

Executive Editor: Liu Bing (刘冰)

ISSN 1002-0721



9 771002 072227

