ISSN 1001-0521 · e-ISSN 1867-7185
CN 11-2112/TF · CODEN RARME 8

Volume 40 • Number 12 • December 2021

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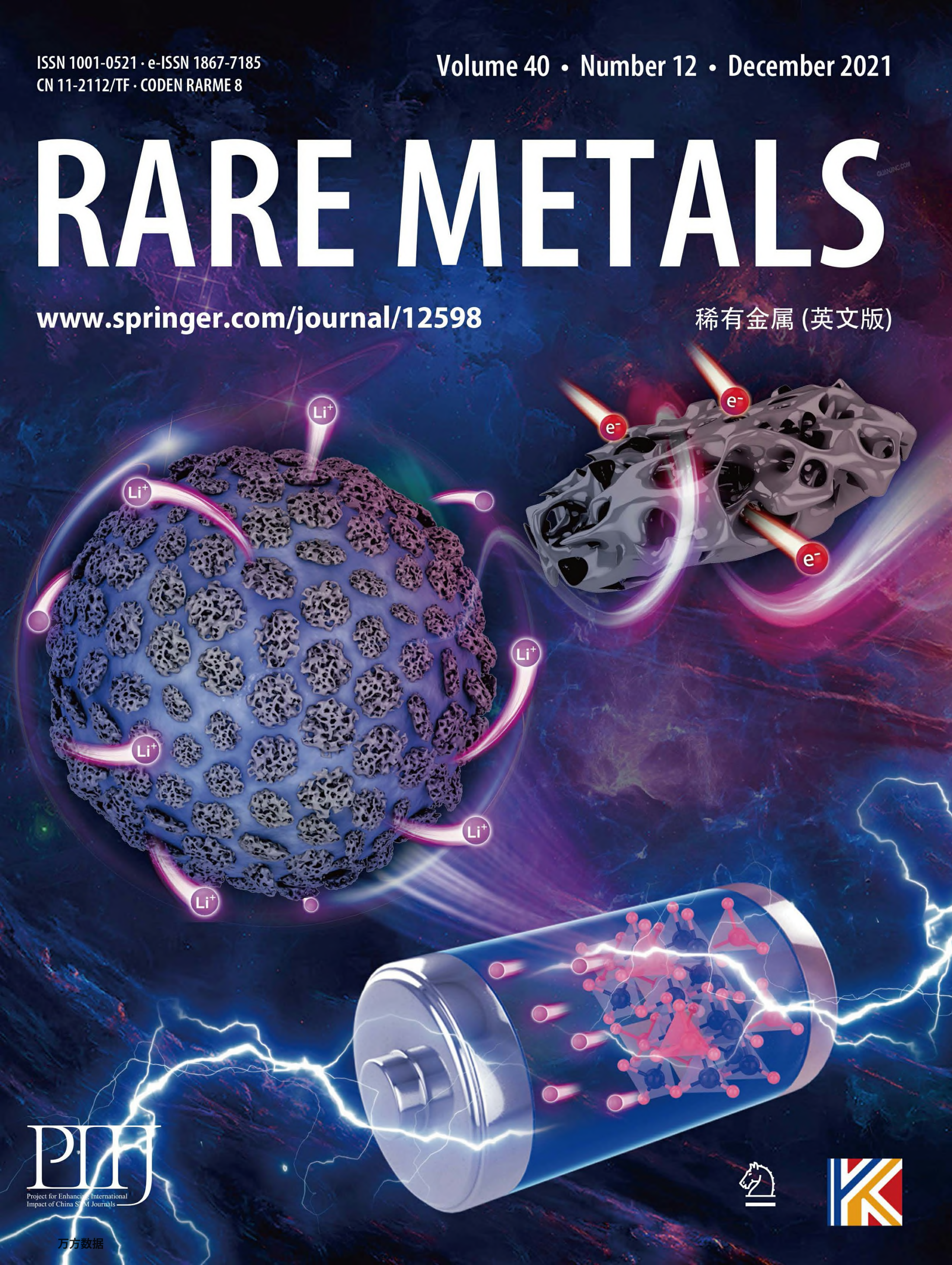

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Cover story

(Wen-Wen Gou, Shuang Zhou, Xin-Xin Cao* , Yi-Lin Luo, Xiang-Zhong Kong, Jing Chen, Xue-Fang Xie, An-Qiang Pan*,pp. 3466–3476)

Hierarchically Porous Carbon Decorated Li_3VO_4 as Advanced Anode for Lithium-Ion Batteries

Developing lithium ion batteries with high energy density for large-scale energy storage system is an effective way to alleviate the increasing energy and environmental issues. Among numerous candidates, Li_3VO_4 has been considered as a promising insertion-type anode for lithium-ion batteries due to its high theoretical specific capacity and suitable operating voltage platform. However, this promising anode still suffers from poor electrical conductivity. In this issue, Pan et al. successfully designed double carbon coated LVO composites with porous structure via facile agitation-drying method combined with subsequent calcination, in which Ketjen black carbon with high porosity, easy dispersion and excellent conductivity can serve as one of carbon source. The Li_3VO_4/C composite prepared at 700 °C with a carbon content of about 10% exhibits the optimized structure. The void space of the composite accommodates the volume changes during the charge/discharge process. Meanwhile, the carbon shell serves as a conductive skeleton to provide bi-continuous Li ions and electrons pathways. The as-prepared Li_3VO_4/C composites exhibit good cycling stability and excellent rate capability, which can be promising alternative anode material for high energy density lithium ion batteries.

Edited and Published by Youke Publishing Co., Ltd.
(No. 2, Xinjiekouwai Str., 100088 Beijing, China)
Tel.: +86 10 82241917; Fax:+86 10 82240869
Email: raremetals@grinm.com
Administrator: China Association for Science and Technology
Sponsor: The Nonferrous Metals Society of China
GRINM Group Co., Ltd.
Printer: Beijing Shengpinfengshang Technology Development Co., Ltd., Beijing, China

ISSN 1001-0521

Price: RMB 300