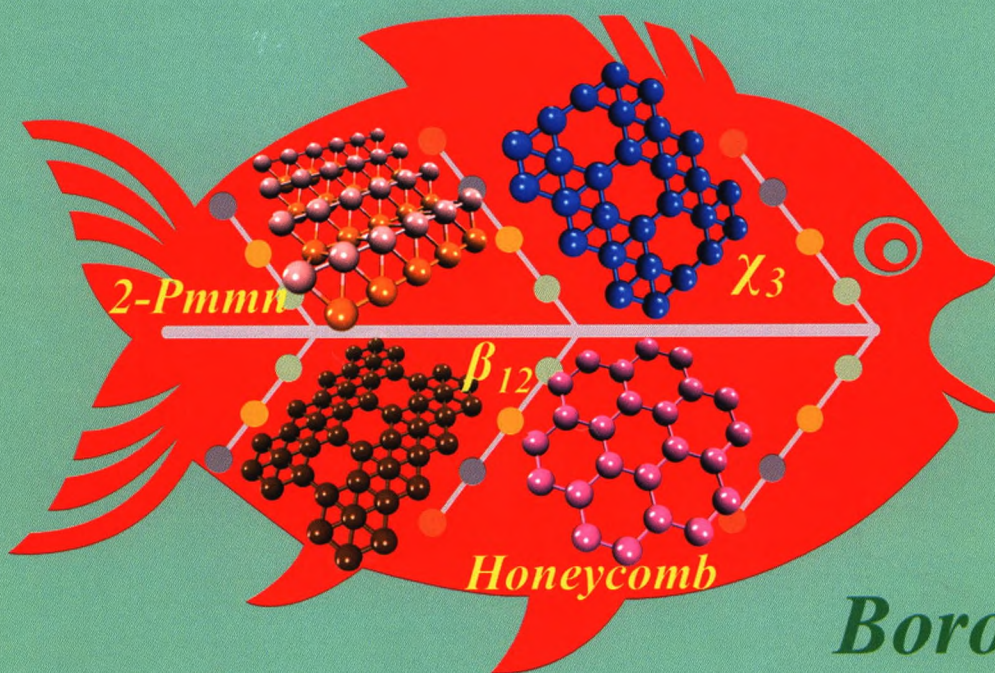
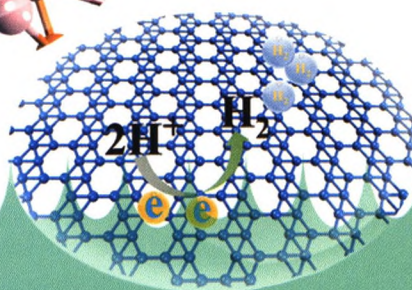
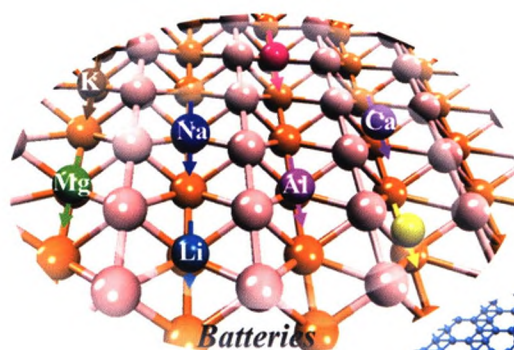
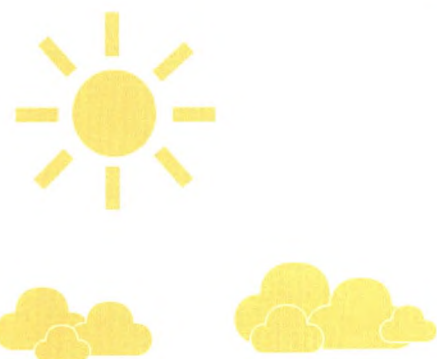


Frontiers of Physics

ISSN 2095-0462
Volume 14 · Number 3
June 2019



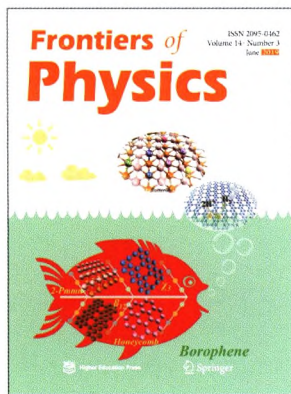
Borophene



Higher Education Press



Springer



Online submission via
mc.manuscriptcentral.com/fop

Available online at
www.springer.com/11467,
journal.hep.com.cn/fop

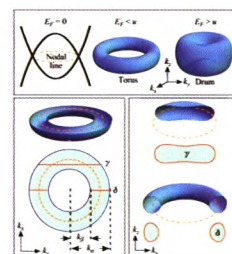
Abstracted/Indexed in
 Science Citation Index
 Expanded (SciSearch), Journal
 Citation Reports/Science
 Edition, SCOPUS, INSPEC,
 Astrophysics Data System
 (ADS), Google Scholar,
 Academic OneFile, Chinese
 Science Citation Database,
 Current Contents/Physical,
 Chemical and Earth Sciences,
 Expanded Academic, Gale,
 INIS Atomindex, INSPIRE,
 OCLC, SCImago, Summon by
 ProQuest

CONTENTS

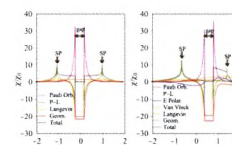
Vol. 14 No. 3 June 2019

Condensed Matter & Material Physics

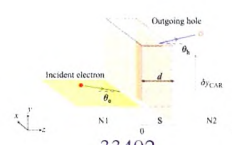
- 33405 **Quantum transport in topological semimetals under magnetic fields (II)**
 Hai-Peng Sun, Hai-Zhou Lu
- 33404 **Semiclassical dynamics and nonlinear charge current**
 Yang Gao
- 33402 **Anomalous spatial shifts in interface electronic scattering**
 Zhi-Ming Yu, Ying Liu, Shengyuan A. Yang
- 33403 **Review of borophene and its potential applications**
 Zhi-Qiang Wang, Tie-Yu Lü, Hui-Qiong Wang, Yuan Ping Feng,
 Jin-Cheng Zheng
- 33401 **Local electrical characterization of two-dimensional materials with functional atomic force microscopy**
 Sabir Hussain, Kunqi Xu, Shili Ye, Le Lei, Xinmeng Liu,
 Rui Xu, Liming Xie, Zhihai Cheng
- 33603 **Novel transition and Bellerophon state in coupled Stuart–Landau oscillators**
 Jia-Meng Zhang, Xue Li, Yong Zou, Shu-Guang Guan
- 31602 **Single-step multipartite entangled states generation from coupled circuit cavities**
 Xiao-Tao Mo, Zheng-Yuan Xue
- 31601 **Dynamical characteristic of measurement uncertainty under Heisenberg spin models with Dzyaloshinskii–Moriya interactions**
 Ying-Yue Yang, Wen-Yang Sun, Wei-Nan Shi, Fei Ming,
 Dong Wang, Liu Ye
- i **Special Focus:** Department of Physics, Xiamen University



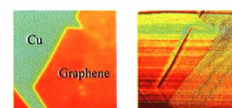
33405



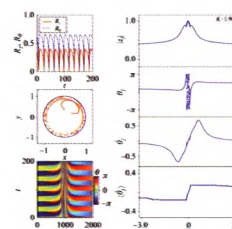
33404



33402



33401



33603

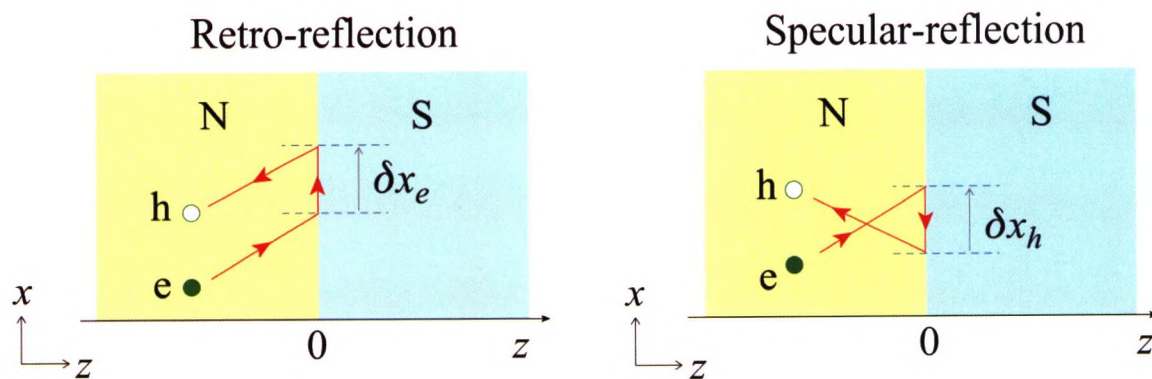


Cover

Borophene, the lightest two-dimensional material, shows highly anisotropic atomic structures, electronic properties, thermal conductivity, optical, and surface ion transport properties. Both the free-standing and metal substrate supported borophenes have high structural diversity. Furthermore, the distinction between borophene crystal and boron vacancy defect is blurry, due to the ultralow boron vacancy defect formation energy. This phenomenon is completely different from other two-dimensional materials. Due to the small atomic mass of boron, borophene has very high Li/Na/K/Mg/Ca/Al storage capacity as the anode materials for alkali metal ion batteries. Ultra-fast ion migration is observed on the $2-Pmmn$ phase of borophene due to the unique corrugated structure. Borophene shows vast application prospect in alkali metal ion batteries, Li-S batteries, hydrogen storage, and catalytic reaction. For more details, please refer to the article “Review of borophene and its potential applications” by Zhi-Qiang Wang, et al., *Front. Phys.* 14(3), 33403. [Photo credits: Zhi-Qiang Wang]

Frontiers of Physics

Vol. 14 No. 3 June 2019



Schematic figures for the shifts in the two types of Andreev reflection in the graphene/superconductor model. See: Zhi-Ming Yu, Ying Liu, and Shengyuan A. Yang, Anomalous spatial shifts in interface electronic scattering, *Front. Phys.* 14(3), 33402 (2019).

Available online
<http://www.springerlink.com>

物理学前沿
CN 11-5994/O4
邮发代号: 80-965

ISSN 2095-0462

