

# Journal of Physics

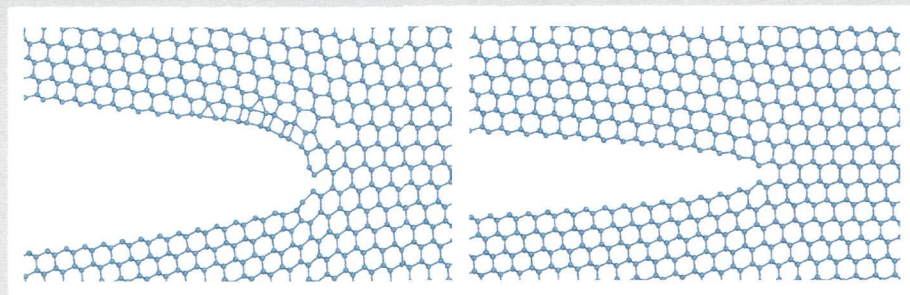
## Condensed Matter

Volume 25 Number 5 6 February 2013

### Special section

**Ultrafast and nonlinear optics in carbon nanomaterials**

*Guest Editor: Junichiro Kono*



# Journal of Physics

Condensed Matter

Volume 25 Number 5 6 February 2013

## FAST TRACK COMMUNICATION

- 052201** **Origin of the pseudogap in cuprate superconductors from quantum cluster theories**  
J Merino and O Gunnarsson

## SPECIAL SECTION ON ULTRAFAST AND NONLINEAR OPTICS IN CARBON NANOMATERIALS

### PREFACE

- 050301** **Ultrafast and nonlinear optics in carbon nanomaterials**  
*Junichiro Kono*

## SPECIAL SECTION PAPERS

- 054201** **The impact of pump fluence on carrier relaxation dynamics in optically excited graphene**  
T Winzer and E Malic
- 054202** **Time-resolved spectroscopy on epitaxial graphene in the infrared spectral range: relaxation dynamics and saturation behavior**  
S Winnerl, F Göttfert, M Mittendorff, H Schneider, M Helm, T Winzer, E Malic, A Knorr, M Orlita, M Potemski, M Sprinkle, C Berger and W A de Heer
- 054203** **Nonlinear optics of graphene in a strong magnetic field**  
Xianghan Yao and Alexey Belyanin

## PAPERS

### NANOSTRUCTURES AND NANOELECTRONICS

- 055301** **Temperature-dependent quantum electron transport in 2D point contacts**  
T V Krishtop and K E Nagaev
- 055302** **Hall conductance in graphene with point defects**  
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- 055303** **Nanostructures of Sr<sup>2+</sup> doped BiFeO<sub>3</sub> multifunctional ceramics with tunable photoluminescence and magnetic properties**  
S K Mandal, T Rakshit, S K Ray, S K Mishra, P S R Krishna and Amreesh Chandra
- 055304** **Understanding and tuning the quantum-confinement effect and edge magnetism in zigzag graphene nanoribbon**  
Liang Feng Huang, Guo Ren Zhang, Xiao Hong Zheng, Peng Lai Gong, Teng Fei Cao and Zhi Zeng

### SOLID STRUCTURE AND LATTICE DYNAMICS

- 055401** **Structural changes in zirconolite under  $\alpha$ -decay**  
Helen F Chappell, Martin T Dove, Kostya Trachenko, Ruth E A McKnight, Michael A Carpenter and Simon A T Redfern
- 055402** **Simple pair-wise interactions for hybrid Monte Carlo–molecular dynamics simulations of titania/yttria-doped iron**  
Karl D Hammond, Hyon-Jee Lee Voigt, Lauren A Marus, Niklas Juslin and Brian D Wirth
- 055403** **The temperature dependence of the phononic band gap of NaI**  
M Kempa, P Ondrejko, P Bourges, J Ollivier, S Rols, J Kulda, S Margueron and J Hlinka

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## CORRELATED ELECTRONS

- 055601 Wigner crystal versus fermionization for one-dimensional Hubbard models with and without long-range interactions**  
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- 055602 Intermediate valence behavior in the novel cage compound CeIr<sub>2</sub>Zn<sub>20</sub>**  
P Swatek and D Kaczorowski
- 055603 Effect of surface polishing and oxidization induced strain on electronic order at the Verwey transition in Fe<sub>3</sub>O<sub>4</sub>**  
W Tabis, J E Lorenzo, A Kozłowski, T Kolodziej, Z Tarnawski, Z Kakol, C Mazzoli, H C Walker, N Jaouen, D Mannix, C Marin and J M Honig

## SUPERCONDUCTORS AND METALS

- 055701 Non-Abelian topological superconductors from topological semimetals and related systems under the superconducting proximity effect**  
Jian-Hua Jiang and Si Wu

## SEMICONDUCTORS

- 055801 A new parametrization of the Stillinger–Weber potential for an improved description of defects and plasticity of silicon**  
L Pizzagalli, J Godet, J Guérolé, S Brochard, E Holmstrom, K Nordlund and T Albaret

## MAGNETISM AND MAGNETIC MATERIALS

- 056001 The magnetocaloric effect and critical behaviour of the Mn<sub>0.94</sub>Ti<sub>0.06</sub>CoGe alloy**  
P Shamba, J L Wang, J C Debnath, S J Kennedy, R Zeng, M F Md Din, F Hong, Z X Cheng, A J Studer and S X Dou
- 056002 Grain structure and magnetic relaxation of self-assembled Co nanowires**  
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- 056003 Eddy currents and magnetic moments of planar rings of arbitrary width**  
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- 056004 Neutron diffraction study of triple-layered Sr<sub>4</sub>Ru<sub>3</sub>O<sub>10</sub>**  
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- 056005 Magnetism: the driving force of order in CoPt, a first-principles study**  
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- 056006 Re-orientation transition in molecular thin films: Potts model with dipolar interaction**  
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- 056007 An improved density functional theory description of the Ge(100)c(4×2) surface using the MBJLDA xc potential and spin–orbit interactions**  
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## CORRIGENDUM

- 059501 Corrigendum: A three-dimensional self-learning kinetic Monte Carlo model: application to Ag(111)**  
A Latz, L Brendel and D E Wolf