

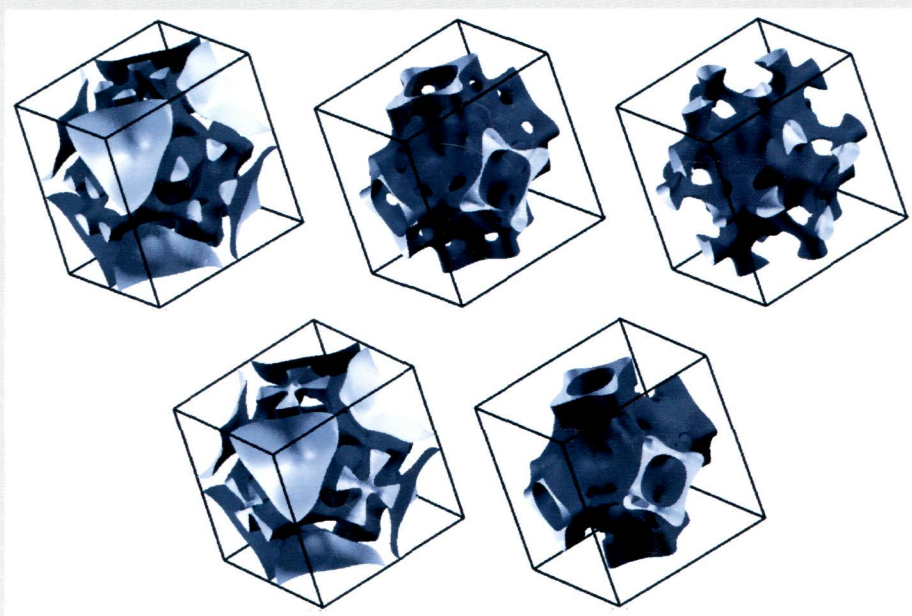
# Journal of Physics

## Condensed Matter

Volume 25 Number 15 17 April 2013

### Featured in this issue

**Liquids, Soft Matter and Biological Physics**



### LIQUIDS, SOFT MATTER AND BIOLOGICAL PHYSICS FAST TRACK COMMUNICATION

- 152101** **Electrostatic considerations affecting the calculated HOMO–LUMO gap in protein molecules**  
Greg Lever, Daniel J Cole, Nicholas D M Hine, Peter D Haynes and Mike C Payne

### LIQUIDS, SOFT MATTER AND BIOLOGICAL PHYSICS PAPERS

- 155101** **The liquid  $\longleftrightarrow$  amorphous transition and the high pressure phase diagram of carbon**  
David R Robinson and Mark Wilson
- 155102** **The influence of dimensionality on the behavior of magnetic dipolar soft spheres: calculation of the pressure**  
E Minina and S Kantorovich
- 155103** **Thermodynamics of ideal proteinogenic homopolymer chains as a function of the energy spectrum  $E$ , helical propensity  $\omega$  and enthalpic energy barrier**  
L Olivares-Quiroz

### PAPERS

#### NANOSTRUCTURES AND NANOELECTRONICS

- 155301** **Atomistic processes of grain boundary motion and annihilation in graphene**  
Gun-Do Lee, Euijoon Yoon, Cai-Zhuang Wang and Kai-Ming Ho
- 155302** **Mechanical properties of nanosheets and nanotubes investigated using a new geometry independent volume definition**  
Philipp Wagner, Viktoria V Ivanovskaya, Mark J Rayson, Patrick R Briddon and Christopher P Ewels
- 155303** **Transfer characteristics and contact resistance in Ni- and Ti-contacted graphene-based field-effect transistors**  
A Di Bartolomeo, F Giubileo, L Iemmo, F Romeo, S Santandrea and U Gambardella
- 155304** **Spin-resolved bunching and noise characteristics in double quantum dots coupled to ferromagnetic electrodes**  
JunYan Luo, HuJun Jiao, BiTao Xiong, Xiao-Ling He and Changrong Wang
- 155305** **Length and energy gap dependences of thermoelectricity in nanostructured junctions**  
Yoshihiro Asai

#### SOLID STRUCTURE AND LATTICE DYNAMICS

- 155401** **High pressure Raman spectroscopy of layered matlockite, PbFCl**  
Y A Sorb, N Subramanian and T R Ravindran
- 155402** **The application of an atomistic  $J$ -integral to a ductile crack**  
Jonathan A Zimmerman and Reese E Jones

#### ELECTRONIC STRUCTURE

- 155501** **Fermi surface properties of  $AB_3$  ( $A = Y, La$ ;  $B = Pb, In, Tl$ ) intermetallic compounds under pressure**  
Swetarekha Ram, V Kanchana, A Svane, S B Dugdale and N E Christensen

#### CORRELATED ELECTRONS

- 155601** **Topological Hamiltonian as an exact tool for topological invariants**  
Zhong Wang and Binghai Yan

*(Continued on inside back cover)*

- 155602 Anomalous multi-order Raman scattering in  $\text{LaMnO}_3$ : a signature of quantum lattice effects in a Jahn–Teller crystal**  
N N Kovaleva, O E Kusmartseva, K I Kugel, A A Maksimov, D Nuzhnyy, A M Balbashov, E I Demikhov, A Dejneka, V A Trepakov, F V Kusmartsev and A M Stoneham
- 155603 Commensurate magnetic excitations induced by band splitting and Fermi surface topology in n-type cuprates**  
H Y Zhang, Y Zhou, H Q Lin and C D Gong
- 155604 Stability of spin droplets in realistic quantum Hall devices**  
H Atci, U Erkarlan, A Siddiki and E Räsänen
- 155605 Electric field driven destabilization of the insulating state in nominally pure  $\text{LaMnO}_3$**   
Rajib Nath, A K Raychaudhuri, Ya M Mukovskii, Parthasarathi Mondal, Dipten Bhattacharya and P Mandal
- SUPERCONDUCTORS AND METALS**
- 155701 Observation of superconductivity in the intermetallic compound  $\beta\text{-IrSn}_4$**   
Vinh Hung Tran, Zbigniew Bukowski, Piotr Wiśniewski, Lan Maria Tran and Andrzej J Zaleski
- SEMICONDUCTORS**
- 155801 Maximum intrinsic spin-Hall conductivity in two-dimensional systems with  $k$ -linear spin–orbit interaction**  
Tsung-Wei Chen
- 155802 Fractional conductance oscillations in quantum rings: wave packet picture of transport in a few-electron system**  
T Chwiej and B Szafran
- DIELECTRICS AND FERROELECTRICS**
- 155901 Nontrivial behavior of  $T_c$  at the small electric field in  $\text{BaTiO}_3$  crystals, detected by means of acoustic emission**  
E Dul’kin and M Roth
- 155902 *In situ* high-temperature high-pressure Raman spectroscopy on single-crystal relaxor ferroelectrics  $\text{PbSc}_{1/2}\text{Ta}_{1/2}\text{O}_3$  and  $\text{PbSc}_{1/2}\text{Nb}_{1/2}\text{O}_3$**   
N Waeselmann, B Mihailova, M Gospodinov and U Bismayer
- MAGNETISM AND MAGNETIC MATERIALS**
- 156001 Influence of the Dzyaloshinskii–Moriya interaction on the spin-wave spectra of thin films**  
D Cortés-Ortuño and P Landeros
- 156002 Low energy nuclear spin excitations in Ho metal investigated by high resolution neutron spectroscopy**  
Tapan Chatterji and Niina Jalarvo
- 156003 Magnetic properties and temperature-dependent half-metallicity of  $\text{Co}_2\text{Mn}(\text{Ga}_{1-x}\text{Z}_x)$  ( $\text{Z}=\text{Si}, \text{Ge}, \text{Sn}$ ) from first-principles calculation**  
Hu-Bin Luo, Qing-Miao Hu, Chun-Mei Li, Börje Johansson, Levente Vitos and Rui Yang
- 156004 A magnetic glassy phase in  $\text{Fe}_{1+y}\text{Se}_x\text{Te}_{1-x}$  single crystals**  
G Lamura, T Shiroka, P Bonfà, S Sanna, F Bernardini, R De Renzi, R Viennois, E Giannini, A Piriou, N Emery, M R Cimberle and M Putti
- 156005 Effects of substitutional Li on the ferromagnetic response of Li co-doped  $\text{ZnO}:\text{Co}$  nanoparticles**  
Saif Ullah Awan, S K Hasanain, Massimo F Bertino and G Hassnain Jaffari