

Volume 94 Numbers 13–15 May 2014

ISSN 1478-6435

RU
p57/s

Philosophical Magazine

First published in 1798

Structure and Properties of Condensed Matter



Taylor & Francis
Taylor & Francis Group

Philosophical Magazine

Volume 94 May 2014 Numbers 13–15

Contents

	Page
Issue 13	
Part A: Materials Science	
Theoretical predictions of the structural, mechanical and lattice dynamical properties of XW_2 ($X = Zr, Hf$) Laves phases <i>E. Deligoz, H. Ozisik and K. Colakoglu</i>	1379
A model for the initiation of reaction sites during the uranium–hydrogen reaction assuming enhanced hydrogen transport through linear oxide discontinuities <i>J. Glascott</i>	1393
Multiscale crystal defect dynamics: a dual-lattice process zone model <i>S. Li, B. Ren and H. Minaki</i>	1414
Microstructure mapping of a friction stir welded AA2050 Al–Li–Cu in the T8 state <i>F. De Geuser, B. Malard and A. Deschamps</i>	1451
Hardness of Al-based quasicrystals evaluated via cluster-plus-glue-atom model <i>H. Chen, L. Luo, J. Qiang, Y. Wang and C. Dong</i>	1463
Influence of functionalization on mechanical and electrical properties of carbon nanotube-based silver composites <i>H. Pal, V. Sharma and M. Sharma</i>	1478
Strain-induced martensite to austenite reverse transformation in an ultrafine-grained Fe–Ni–Mn martensitic steel <i>H. Ghasemi-Nanesa, M. Nili-Ahmadabadi, H.R. Koohdar, M. Habibi-Parsa, S. Hossein Nedjad, S.A. Alidokht and T.G. Langdon</i>	1493
Issue 14	
Part A: Materials Science	
Diffusion pattern in MSi_2 and M_3Si_3 silicides in group VB ($M = V, Nb, Ta$) and VIB ($M = Mo, W$) refractory metal-silicon systems <i>S. Roy, S. Prasad, S.V. Divinski and A. Paul</i>	1508
<i>Ab-initio</i> tiling and atomic structure for decagonal $ZnMgY$ quasicrystal <i>M. Mihalkovič, J. Richmond-Decker, C.L. Henley and M. Oxborrow</i>	1529
The energy of dislocation dipoles <i>G. Schoeck</i>	1542
Viscosity and diffusivity in melts: from unary to multicomponent systems <i>W. Chen, L. Zhang, Y. Du and B. Huang</i>	1552

Effect of temperature-induced solute distribution on stacking fault energy in Mg-X(X = Li, Cu, Zn, Al, Y and Zr) solid solution: a first-principles study
T. Fan, L. Wei, B. Tang, L. Peng and W. Ding 1578

Part B: Condensed Matter Physics

Absorption spectra of unequal width bilayer graphene nanoribbons in a spatially modulated electric field
T.S. Li 1588

Part A: Materials Science

Orientation sensitivity of focused ion beam damage in pure zirconium: direct experimental observations and molecular dynamics simulations
A.K. Revelly, N. Srinivasan, A.S. Panwar, K.V. Mani Krishna, R. Tewari, D. Srivastava, G.K. Dey and I. Samajdar 1601

Issue 15

Part A: Materials Science

De-vitrification of nanoscale phase-separated amorphous thin films in the immiscible copper–niobium system
A. Puthucode, A. Devaraj, S. Nag, S. Bose, P. Ayyub, M.J. Kaufman and R. Banerjee 1622

Influence of heterogeneities on the electronic properties of hydrogenated amorphous silicon
S.C. Agarwal 1642

Effect of Ni(II) substitution on phase stabilization electrical properties of BiCo(III)VOX.20 oxide-ion conductor
S. Beg, N.A.S. Al-Areqi, Kh.A.S. Ghaleb, A. Al-Alas and S. Hafeez 1661

Contrast analysis of Shockley partial dislocations in 4H-SiC observed by synchrotron Berg–Barrett X-ray topography
H. Matsuhata, H. Yamaguchi, T. Yamashita, T. Tanaka, B. Chen and T. Sekiguchi 1674

Two new superstructures Ba₄Ti₅O₁₀ and Ba₄Ti₄O₁₁ in epitaxial barium titanate nanodomains determined by nanobeam electron diffraction and high-resolution transmission electron microscopy
J. He, J.C. Jiang and F.I. Meletis 1686

Chemical shifts of metallic and non-metallic Al–Re–Si approximant crystals studied by EELS and SXES
S. Koshiya, M. Terauchi, Y. Takagiwa, K. Yamada, I. Kanazawa and K. Kimura 1711

Average crystal structure(s) of the embedded meta stable *n'*-phase in the Al–Mg–Zn system
H.B. Larsen, G. Thorkildsen, S. Natland and P. Pattison 1719