Review articles
Mechanostereochemistry and the mechanical bond
G. Barin, R. S. Forgan & J. F. Stoddart

Research articles
Hyperelastic cloaking theory: transformation elasticity with pre-stressed solids
A. N. Norris & W. J. Parnell

Retention of δ-ferrite in aluminium-alloyed TRIP-assisted steels

A fracture mechanics model for a crack problem of functionally graded materials with stochastic mechanical properties
L. Guo, Z. Wang & N. Nicola

Points of general relativistic shock wave interaction are ‘regularity singularities’ where space–time is not locally flat
M. Reintjes & B. Temple

Dynamic axial crush response of circular cell honeycombs
R. J. D’Mello, S. Guntupalli, L. R. Hansen & A. M. Waas

The finite-dipole dynamical system
A. A. Tchieu, E. Kanso & P. K. Newton

Vortex-type elastic structured media and dynamic shielding
M. Brun, J. S. Jones & A. B. Movchan

Work conjugacy error in commercial finite-element codes: its magnitude and how to compensate for it
Z. P. Bazark, M. Cattu & J. Vorel

The evolution of pebble size and shape in space and time
G. Domska & G. W. Gibbons

High-frequency electromagnetic non-destructive evaluation for high spatial resolution, using metamaterials
R. Grimberg & G.-Y. Tian

On molecular diffusion in nanostructured porous media: interfacial exchange kinetics and surface diffusion
B. Albaalbaki & R. J. Hill

Three-dimensional cellular structures with negative Poisson’s ratio and negative compressibility properties
J. N. Grima, R. Caruana-Gauci, D. Attard & R. Gatt

The nonlinear electromigration of analytes into confined spaces
M. A. Alam

Helical buckling of Skyrme–Faddeev solitons
D. Foster & D. Harland

On the spherically symmetric Einstein–Yang–Mills–Higgs equations in Bondi coordinates
C. Tadmor & J. B. Tcheprasov

A thermal analysis of the operation of microscale, inorganic light-emitting diodes
C. Lu, Y. Li, J. Song, H.-S. Kim, E. Brueckner, B. Fang, K.-C. Hwang, Y. Huang, R. G. Nuzzo & J. A. Rogers

Optical spectral singularities and coherent perfect absorption in a two-layer spherical medium
A. Mostafazadeh & M. Sarisaman

Exact solutions of a q-discrete second Painlevé equation from its iso-monodromy deformation problem. B. Hypergeometric solutions
N. Joshi & Y. Shi