Review. A geological history of reflecting optics 1
A. R. Parker

Projections of the future course of the primary vCJD epidemic in the UK: inclusion of subclinical infection and the possibility of wider genetic susceptibility 19
P. Clarke & A. C. Ghani

Detection, identification and mapping of iron anomalies in brain tissue using X-ray absorption spectroscopy 33
A. Mikhaylova, M. Davidson, H. Toastmann, J. E. T. Channell, Y. Guyodo, C. Batich & J. Dobson

Parallel high-resolution confocal Raman SEM analysis of inorganic and organic bone matrix constituents 39

Native-state dynamics of the ubiquitin family: implications for function and evolution 47
N. J. Marianayagam & S. E. Jackson

Roles of discontinuities in bio-inspired adhesive pads 55
J. Y. Chung & M. K. Chaudhury

Characterization of the elastic properties of the nuclear envelope 63

In vitro and in vivo biological responses to a novel radiopacifying agent for bone cement 71

Numerical model of self-propulsion in a fluid 79
D. J. J. Farnell, T. David & D. C. Barton

Modelling the thermal evolution of enzyme-created bubbles in DNA 89
D. Hennig, J. F. R. Archilla & J. M. Romero

Human foetal osteoblastic cell response to polymer-demixed nanotopographic interfaces 97
J. Y. Lim, J. C. Hansen, C. A. Siedlecki, J. Rust & H. J. Donahue

Electron-transfer-mediated binding of optically active cobalt(III) complexes to horse heart cytochrome c 109
U. Scholten, A. Castillejo Merchán & K. Bernauer

Pathological pattern formation and cortical propagation of epileptic seizures 113

Report. Sharks can detect changes in the geomagnetic field 129
C. G. Meyer, K. N. Holland & Y. P. Papastamatiou