



LITHOS

An International Journal of Petrology,
Geochemistry and Mineralogy

VOLUME 177
1 SEPTEMBER 2013
ISSN 0024-4937



www.elsevier.com/locate/lithos

(Abstracted/Indexed in: AGI's *Bibliography and Index of Geology*, *Bulletin Signalétique*, *Chemical Abstracts*, *Current Contents*, *Geo Abstracts*, and *Mineralogical Abstracts*. Also covered in the abstract and citation database Scopus®. Full text available on ScienceDirect®)

Research Papers

Crust-mantle interaction beneath the Luxi Block, eastern North China Craton: Evidence from coexisting mantle- and crust-derived enclaves in a quartz monzonite pluton T.-G. Lan, H.-R. Fan, M. Santosh, F.-F. Hu, K.-F. Yang, Y.-H. Yang and Y. Liu	1
The metamorphic evolution of the high-pressure Kechros complex in East Rhodope (NE Greece): Implications from Na-Al-rich leucocratic rocks within antigorite serpentinites E. Mposkos, I. Baziotis, G. Leontakianakos and P.H. Barry	17
Petrology and geochemistry of Late Holocene felsic magmas from Rungwe volcano (Tanzania), with implications for trachytic Rungwe Pumice eruption dynamics K. Fontijn, M.A. Elburg, I.K. Nikogosian, M.J. van Bergen and G.G.J. Ernst	34
Experimental calibration of the roles of temperature and composition in the Ca-in-olivine geothermometer at 0.1 MPa A. Shejwalkar and L.A. Coogan	54
Middle Jurassic to Cenozoic evolution of arc magmatism during Neotethys subduction and arc-continent collision in the Kapan Zone, southern Armenia J. Mederer, R. Moritz, A. Ulianov and M. Chiaradia	61
Garnet geochemistry of tungsten-mineralized Xihuashan granites in South China J.-h. Yang, J.-t. Peng, R.-z. Hu, X.-w. Bi, J.-h. Zhao, Y.-z. Fu and N.-P. Shen	79
Polyphase inclusions in the Shuanghe UHP eclogites formed by subsolidus transformation and incipient melting during exhumation of deeply subducted crust Q. Liu, J. Hermann and J. Zhang	91
Infrared spectral and carbon isotopic characteristics of micro- and macro-diamonds from the Panda kimberlite (Central Slave Craton, Canada) G.L. Melton, T. Stachel, R.A. Stern, J. Carlson and J.W. Harris	110
Geochemistry of two stratigraphically-related ultramafic (komatiite) layers from the Neoarchean Sigegudda greenstone terrane, Western Dharwar Craton, India: Evidence for compositional diversity in Archean mantle plumes C. Manikyamba, R. Kerrich, A. Polat and A. Saha	120
Multiple exsolutions in a rare clinopyroxene megacryst from the Hannuoba basalt, North China: Implications for subducted slab-related crustal thickening and recycling D. He, Y. Liu, X. Tong, K. Zong, Z. Hu and S. Gao	136
Timing and heat sources for the Barrovian metamorphism, Scotland D.R. Viate, G.J.H. Oliver, G.L. Fraser, M.A. Forster and G.S. Lister	148
Zircon U-Pb and Lu-Hf isotopic constraints on Archean crustal evolution in the Liaonian Complex of northeast China E. Meng, F.-L. Liu, J.-H. Liu, P.-H. Liu, Y. Cui, C.-H. Liu, H. Yang, F. Wang, J.-R. Shi, Q.-B. Kong and T. Lian	164
Coesite and diamond inclusions, exsolution microstructures and chemical patterns in ultrahigh pressure garnet from Ceuta (Northern Rif, Spain) M.D. Ruiz-Cruz and C. Sanz de Galdeano	184
High-pressure mafic oceanic rocks from the Makbal Complex, Tianshan Mountains (Kazakhstan & Kyrgyzstan): Implications for the metamorphic evolution of a fossil subduction zone M. Meyer, R. Klemd and D. Konopelko	207
Sources and cycling of carbon in continental, serpentinite-hosted alkaline springs in the Voltri Massif, Italy E.M. Schwarzenbach, S.Q. Lang, G.L. Früh-Green, M.D. Lilley, S.M. Bernasconi and S. Méhay	226

(contents continued on last page of this issue)



0024-4937(20130901)177C:1-M

Available online at www.sciencedirect.com

ScienceDirect

(contents continued)

Polyphase growth of accessory minerals during continental collision: Geochemical evidence from ultrahigh-pressure metamorphic gneisses in the Sulu orogen	245
Y.-X. Chen, Y.-F. Zheng and Z. Hu	
Geochronology and petrogenesis of the early Paleozoic I-type granite in the Taishan area, South China: Middle-lower crustal melting during orogenic collapse	268
X.-L. Huang, Y. Yu, J. Li, L.-X. Tong and L.-L. Chen	
A late-Carboniferous to early early-Permian subduction–accretion complex in Daqing pasture, southeastern Inner Mongolia: Evidence of northward subduction beneath the Siberian paleoplate southern margin	285
J. Liu, J. Li, X. Chi, J. Qu, Z. Hu, S. Fang and Z. Zhang	
Petrology, major and trace element geochemistry, geochronology, and isotopic composition of granitic intrusions from the vicinity of the Bosumtwi impact crater, Ghana	297
A. Losiak, T. Schulz, R. Buchwaldt and C. Koeberl	
Mantle podiform chromitites do not form beneath mid-ocean ridges: A case study from the Moho transition zone of the Oman ophiolite	314
H. Rollinson and J. Adetunji	
Petrogenesis of magmatic albite granites associated to cogenetic A-type granites: Na-rich residual melt extraction from a partially crystallized A-type granite mush	328
M. Barboni and F. Bussy	
Spatial and temporal distribution of Mesozoic adakitic rocks along the Tan-Lu fault, Eastern China: Constraints on the initiation of lithospheric thinning	352
H.-O. Gu, Y. Xiao, M. Santosh, W.-Y. Li, X. Yang, A. Pack and Z. Hou	
Mixed pyroxenite–peridotite sources for mafic and ultramafic dikes from the Antarctic segment of the Karoo continental flood basalt province	366
J.S. Heinonen, A.V. Luttinen, T.R. Riley and R.M. Michallik	
Geochronological, geochemical and Sr–Nd–Hf isotopic constraints on the origin of the Cretaceous intraplate volcanism in West Qinling, Central China: Implications for asthenosphere–lithosphere interaction	381
X.-W. Li, X.-X. Mo, X.-H. Yu, Y. Ding, X.-F. Huang, P. Wei and W.-Y. He	
Zircon U–Pb geochronology and Sr–Nd–Hf isotopic compositions of the Yuanzhuding granitoid porphyry within the Shi-Hang Zone, South China: Petrogenesis and implications for Cu–Mo mineralization	402
L. Zhong, J. Li, T. Peng, B. Xia and L. Liu	
Timing of deformational events in the Río San Juan complex: Implications for the tectonic controls on the exhumation of high-P rocks in the northern Caribbean subduction–accretionary prism	416
J. Escuder-Viruete, P. Valverde-Vaquero, Y. Rojas-Agramonte, J. Gabites, M. Castillo-Carrión and A. Pérez-Estaún	
Discrimination of protolithic versus metamorphic zircon ages in eclogites: Constraints from the Erzgebirge metamorphic core complex (Germany)	436
M. Tichomirova and R. Köhler	
Country-rock contamination of magmas associated with the Baogutu porphyry Cu deposit, Xinjiang, China	451
P. Shen and H. Pan	
Petrogenesis of migmatites and leucogranites from Sierra de Molinos, Salta, Northwest Argentina: A petrologic and geochemical study	470
A.M. Sola, R.A. Beccio and M.M. Pimentel	
Erratum to “First precise U–Pb baddeleyite ages of 1500 Ma mafic dykes from the São Francisco Craton, Brazil, and tectonic implications” [Lithos 174 (2013) 144–156]	492
E.M. Silveira, U. Söderlund, E.P. Oliveira, R.E. Ernst and A.B. Menezes Leal	