Journal of Applied Geochemistry
Vol. 14, No.4 (2012). pp 393-401

NEW INSIGHTS ON THE EVOLUTION OF INDIAN LITHOSPHERE FROM KIMBERLITE AND RELATED ROCK STUDIES AND NEED FOR AN EXCLUSIVE CENTRE FOR DEEP CONTINENTAL LITHOSPHERIC STUDIES IN INDIA

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Abstract

In recent years, small-volume and deep mantle melt products such as kimberlites, lamproites and lamprophyres, and their xenoliths, have provided significant insights into, seemingly unrelated, large-scale geodynamic aspects such as origin and original spatial extent of the Proterozoic (Purana) sedimentary basins and the Deccan Flood basalts and contributed immensely towards the understanding of Indian lithosphere. Other major advances from these studies include recognition of an anomalously enriched lithospheric subcontinental mantle beneath the Cuddapah basin, presence of an ancient and long-lived Archaean (?) subducted component at the margin of the Singhbhum craton, thick-end Cretaceous lithosphere in the Bastar craton and geochemical links of the lamprophyres in the Chottaudepur area to the Deccan magmatism in NW India. In view of the paramount significance and tremendous potential this field of research beholds, establishment of a Centre for lithospheric studies in India, exclusively devoted to the petrology, geochemistry and geophysics of the deep continental mantle, is the need of the hour.

Keywords: Kimberlites, Purana basins, Deccan flood basalts, lithosphere, India