

# **GEOCHRONOLOGICAL (U-PB ZIRCON) AND ND ISOTOPE INVESTIGATION IN THE NORTHERN PART OF THE EASTERN GHATS GRANULITE BELT, INDIA: THEIR IMPLICATIONS TO RODINIA AND EAST GONDWANA RECONSTRUCTION**

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The Eastern Ghats Granulite Belt (EGGB) forms an integral part of the global SWEAT orogen (Moores, 1991) or Circum East Antarctic Mobile Belt (CEAMB) (Yoshida, 1992). In paleotectonic reconstructions of Rodinia and Gondwana supercontinents the Eastern Ghats Granulite Belt (EGGB) is considered as a segment of the global SWEAT orogen (Moores, 1991) or Circum East Antarctic Mobile Belt (CEAMB) (Yoshida, 1992) and juxtaposed with Rayner Complex of East Antarctica that require similarity in their crustal evolution. Nd isotopic data indicate that sedimentary rocks of northern part of the EGGB were formed from the Neoarchaeal and Paleoproterozoic sources that define their Paleoproterozoic (2.2 Ga) lower age limit of deposition. Charnockites intruded khondalite suite at ca. 1000 Ma. Megacrystic granitoids crystallised at 955 $\pm$ 10 Ma close to peak granulite facies metamorphism (ca. 940-950 Ma). Charnockites as well as megacrystic granitoids were formed by partial melting of Paleoproterozoic and Archaean crustal sources ( $T(DM)$ =2.3-2.1 and 2.6-3.3 Ga). Sm-Nd isotope system in garnets from megacrystic granitoids was equilibrated at 725 $\pm$ 11 Ma and 520 $\pm$ 5 Ma. Zircon from apatite-magnetite veins yields U-Pb age of 502 $\pm$ 3. These data indicate latest Neoproterozoic and Pan-African thermal overprints in the northern part of the EGGB. Obtained and published data for the EGGB are similar to those for Rayner Complex and Northern Prince Charles Mountains of East Antarctica, Wannai and Vijayan Complexes of Sri Lanka and confirm their juxtaposition in Rodinia and Gondwana supercontinents. At the same time Proterozoic crustal evolution of the EGGB differ from that of Southern India Granulites and Highland Complex of Sri Lanka.