

# Petrology and metamorphic reaction textures of sapphirine granulites from Karur in the Madurai Block, South India

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The ultrahigh-temperature metamorphism of the Madurai Block, South India, is characterized by the presence of various reaction textures including sapphirine, corundum, spinel, cordierite, and gedrite in silica-deficient Mg-Al rocks. Here, we report new occurrences of sapphirine- and corundum-bearing granulites intercalated within orthogneisses at Lachmanapatti, Malappatty, and Paramati in the northern part of the Madurai Block. Sapphirine in these localities occurs either as needle-like intergrowth with cordierite and corundum in symplectites and medium to fine grained euhedral to subhedral crystals associated with cordierite and corundum (Lachmanapatti) or in association with plagioclase, corundum, and gedrite (Malappatty). Sapphirine and corundum from Paramati shows various reaction textures such as  $Spl + Sil = Spr + Crn$  and  $Ged + Sil = Crn + Crd + V$ . Temperatures estimated from sapphirine-spinel equilibria lie around 930-950C. The sapphirine-corundum association reported in this study has important bearing on the ultrahigh-temperature metamorphism and exhumation history along clockwise P-T path of the northern Madurai Block.