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Implication of Godhra Granite Emplacement on Calc-silicate Rocks of Lunavada Region, NE Gujarat

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Abstract

The Lunavada region of NE Gujarat is characterised by discontinuous lensoidal bodies of calc-silicate rocks belonging to the Kadana Formation of Lunavada Group, upper Aravallis. These calc-silicates bands are sandwiched between quartzite-metapelite intercalations that occur at lower elevations. Various mineral assemblages within calc-silicates has two petrographic distinctions. Type-1 calc-silicates with un-oriented actinolite needles consists minerals in order of their decreasing abundance as Act + Di + Cal + Qtz + Sph ± Mc ± Pl ± Bt ± Ep ± Chl. Type-2 calc-silicates contain un-oriented hornblende laths with skeletal almandine garnets having dominant mineral assemblage of Hbl + Grt + Qtz + Pl + Cal + Mus + Chl + Sph + Ep. Both the types subsists minor proportion of zircon and opaques. Established time relationship of metamorphic crystallisation with deformation on meta-pelites of Lunavada region signifies no syn-post emplacement growth, while minerals like actinolite/hornblende and garnet within calc-silicates show overprinting and exhibit signatures of syn-to-late stage of metamorphic crystallisation.

Keywords: Lunavada, Kadana, Calc-silicate, Metamorphic crystallisation, Microstructures