

## IN SITU FIELD OBSERVATIONS AND PETROGRAPHICAL CHARACTERISTICS OF GRANITES AND ASSOCIATED ROCKS FROM NARKETPALLY, EASTERN DHARWAR CRATON

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### Abstract

We present in-situ field observations, petrographic studies along with modal analyses of intrusive granites and associated rocks from north-western parts of Narketpally town, Nalgonda District, Telangana State. These rocks form a part of Precambrian Hyderabad batholith in Eastern Dharwar Craton (EDC), Peninsular India. The Narketpally Granite (NG) is essentially composed of quartz, K-feldspar, plagioclase, biotite, hornblende and clinopyroxene. The accessory phases are mainly apatite, epidote, sphene, zircon and magnetite. Petrographic studies indicate that the original magmatic textures have been completely developed, because of the onset of subsequent petrogenetic processes and that these rocks exhibit subsolvus phase of magma crystallization processes. Further, textural intergrowth of perthite, myrmekitic, rapakivi and porphyritic textures in granites and poikilitic and ophitic textures in hornblende-gabbro and dolerite suggest greater temperature of formation. While, fractional crystallization of early formed olivine, orthopyroxene, clinopyroxene, plagioclase and ilmenite has been considered as the main process of differentiation, accompanied by the reaction of early cumulate pile with extraneous aqueous fluid / evolved melt. Large poikilitic hornblende, which is the dominant mineral phase enclosing all the early formed minerals is considered as a product of such fluid / evolved melt - induced reaction during late magmatic stage.

*Keywords:* Granite, Hornblende-gabbro, Petrography, Narketpally, QAP diagram, Rapakivi, Hyderabad batholith, Eastern Dharwar Craton