## Geochemistry of Ikauna ultramafics from Madawara Igneous Complex, Bundelkhand Massif, Central India: Implications for PGE-Au Type Mineralization

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Ikauna in southern part of Bundelkhand massif, central India, consists of a series of E-W trending dismembered lensoidal bodies of ultramafics (~2 km x 300-400 m) embedded within the massif. The ultramafics mainly include dunite, spinel-bearing peridotites and pyroxenites, and are found associated with talc-chlorite schists, coarse to medium diorite, quartz veins, pegmatites and dolerite dykes. The sequence is intrusive into the granite-gneisses of Bundelkhand gneissic complex (BnGC), and are sheared, serpentinized and chloritised. Reports on suspected platinum group elements (PGE) mineralization, particularly in the serpentinized peridotites, have initiated this detailed study.

The medium grained peridotites (harzburgite and lherzolite) contain cumulus olivines basically in a opx matrix with opaques filling the interstitial spaces, while the medium-coarse grained pyroxenites (websterite and orthopyroxenites) are enriched in cpx/opx and show characteristic features indicating its derivation from peridotites. The peridotites have been grouped into two categories (namely peridotite-I and peridotite-II) based on major element, compatible and moderately incompatible trace element and petrography data. The mineralogical transition from peridotite to pyroxenite is observed in these two categories. A dark bluish gray coloured, compact rock characterized by coarse grained cumulates of olivine was encountered (with noticeable bulk PGE values) and has been designated as peridotite category-II (or Peridotite II), because of its apparent mineralogical and geochemical association in PGE mineralization. It was also observed that the PGEs, especially Pt, Ir and Pd, are confined to peridotite-II. Further, a detailed analysis of the geochemical data indicates that Pt-Au type silicate hosted PGE mineralization is predominant. The study also points that these ultramafic rocks are characteristic of high degree of partial melting of fertile mantle at shallow to moderate depth from komatiite type magma.