

The Occurrence of Platinum (Pt) and Skaergaardite (Pd, Cu) in the Hutti Underground Gold Mines, Eastern Dharwar Craton, Karnataka, India.

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The Hutti-Maski Greenstone Belt (HMGB), located in the northern part of the Eastern Dharwar Craton (EDC), is currently the sole lode gold producer in India. For the first time, we report the occurrence of Platinum and Skaergaardite (Pd, Cu) (Fig 1) from a quartz-bearing sample. In this study, we found quartz samples are associated with sulphides composed of pyrite, chalcopyrite, and arsenopyrite with intense chemical alterations. The mineral phase of Skaergaardite shows a strong intensity at 2 theta (43.5°) and confirmed with ICDD-2021-PDF4+ PDF00-057-0606 and native Platinum, syn (Pt) Pt 0.0999 Sn 0.001 with PDF 04-001-3300. We conclude that

1. The PXRD pattern in Fig 1 and Fig 2 suggests that the presence of platinum and Skaergaardite (Pd, Cu) as inclusions in chalcopyrite and minor amounts of substitutions are possible between Pd-Cu solid solutions series.
2. The possible reasons for their enrichment could be the (K_D) values for sulfides melt vs silicate melt is too large and hence sulfides become enriched in PGE
3. This study may throw a new vista on Gold-Platinum metallogeny and ascertain the further multi-metal exploration, Research, and Development on Hutti Underground Gold mines.

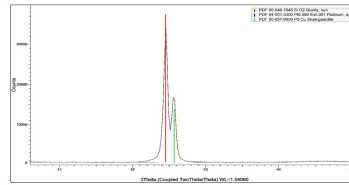


Fig 2 show part extracted 2theta from 41-45 showing Skaergaardite and Platinum

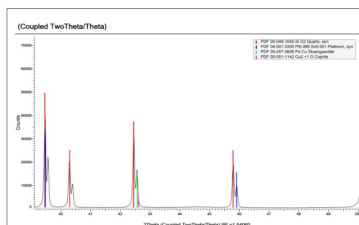


Fig 1 PXRD data : quartz, Platinum, Skaergaardite and Cuprite