

## Otanmäki and Vuorokas iron-titanium-vanadium oxide deposits, Eastern Finland

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Otanmäki area Fe-Ti-V oxide deposits are hosted by mafic to anorthositic intrusion complex (2065 ± 4 Ma) which is situated along with alkaline granitoids at the boundary between the Archaean Pudasjärvi and Iisalmi blocks, immediately to the west of the Palaeoproterozoic Kainuu schist belt.

The Otanmäki mine operated during 1953–1985 (Vuorokas Mine 1979–1985). In total, 30 Mt of ore was mined grading of 32–34% Fe, 5.5–7.6% Ti and 0.26% V (Puustinen 2003).

The average mineralogy of Otanmäki ore comprises of magnetite (35–40 wt. %), ilmenite (25–30 wt. %) and sulphides (1–2 wt. %). The main gangue minerals are chlorite, hornblende, and plagioclase. Magnetite and ilmenite occur mainly as granoblastic textured, separate 0.2–0.8 mm grains (Pääkkönen 1956). In parts, ilmenomagnetite is predominant containing ilmenite and spinel as exsolved lamellae and inclusions in magnetite.

The average vanadium content in magnetite is (0.62 wt.% V) and it varies slightly between the ore bodies (Kerkkonen 1979).

### References:

Kerkkonen, O., 1979. Otanmäen titaanirautamalmien synty ja kehitys magnetiitti-ilmeniitti-parin valossa. Licentiate thesis, Department of Geology, University of Oulu, p. 89. (In Finnish).

Puustinen, K., 2003. Suomen kaivosteollisuus ja mine-raalisten raaka-aineiden tuotanto vuosina 1530–2001, historiallinen katsaus erityisesti tuotantolukujen valossa. Geological Survey of Finland, Report M 10.1/2003/3, p. 578. (In Finnish).

Pääkkönen, V., 1956. Otanmäki, the ilmenite-magnetite ore field in Finland. Bulletin de la Commission géologique de Finlande 171, p. 71.