

MINERALOGICAL CHARACTERISTICS OF CERAMICS

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Ten samples of recent ceramics' fragments were analyzed using XRPD method. The ceramics are variably coloured as well as multicoloured. Two fragments are completely brownish red; two fragments are red with a thin black film on the one side and six fragments are black in the middle and red on the outer sides. Black and red parts were analyzed separately.

XRPD analyses were performed using X'Pert High Score software (PANALYTICAL, 2004) and yielded the following results. Every sample contains albite, microcline and quartz (quartz is macroscopically visible as grains in the ceramics). Nine samples (regardless of their colour) contain muscovite, which can also be macroscopically seen, and one sample contains a mineral of the biotite series and illite. All red samples contain hematite which is the probable cause of the red colour. Also, all black samples contain a spinel group mineral which is, as well, the probable cause of black

colour. Fig. 1 depicts XRPD patterns of a red ceramics' fragment (sample RK_6; Fig. 1a) and a black ceramics' fragment (RK_8 sample; Fig. 1b). Another reason for appearance of different colours could be in the sintering temperature. After reaching a certain temperature, the hematite is reduced to magnetite nevertheless of the oxidizing atmosphere. Thus, the presence of a spinel group member could be due to the appearance of reducing conditions. Estimated temperature for black layers formation is over 1300°C which is in agreement with findings of SLOVENEK *et al.* (1997).

References

- PANALYTICAL (2004): X'Pert High Score Plus, version 2.1, Panalytical, Almelo, The Netherlands.
SLOVENEK, D., POPOVIĆ, S. & TADEJ, N. (1997): Neues Jahrbuch für Mineralogie, Abhandlungen, 171: 323–339.

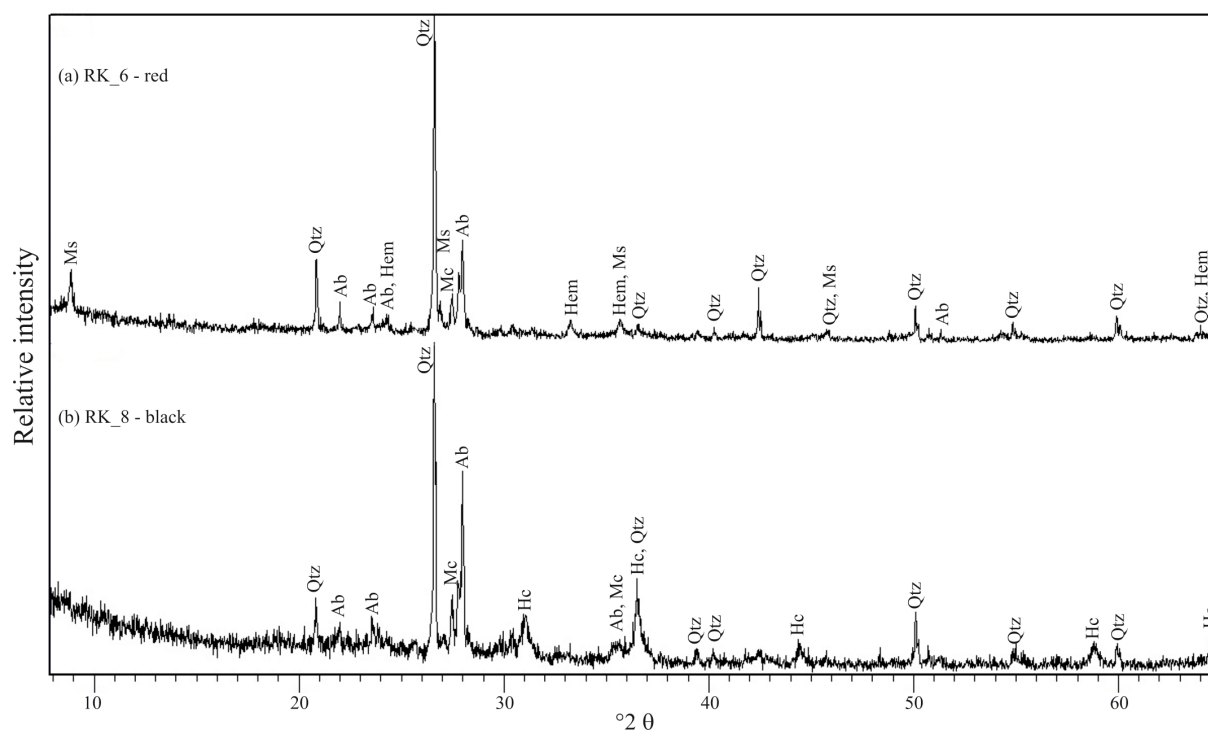


Fig. 1. (a) sample RK_6 – red; (b) sample RK_8 – black; Qtz – quartz; Ms – muscovite; Mc – microcline; Ab – albite; Hem – hematite; Hc – hercynite.