

OSL sensitivity of quartz extracted from fired bricks for retrospective dosimetry

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Optically stimulated luminescence of quartz extracted from fired materials is used for retrospective dosimetry for about 40 years. Quartz sensitivity to thermoluminescence (TL) and optically stimulated luminescence (OSL) can vary over few orders of magnitude. This discrepancies in sensitivity for the quartz originating from different parts of the world is still not yet fully understood.

We have extracted quartz from bricks produced by three different companies in Czech Republic. Quartz was extracted from fired bricks, as well as before firing. Significant changes in quartz sensitivity were observed after firing process. Sensitivity can both increase or decrease, depending mainly on the maximum temperature achieved during firing process. For some samples, the sensitivity was greatly increased after firing (7 times higher signal after same dose before firing) and after repeated irradiation exposures, but for some samples, the sensitivity remained low.

Přihlásit do soutěže

Ne

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