

Radiation induced paramagnetic radicals in synthetic octacalcium phosphate

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Abstract

© 2018 Institute of Physics Publishing. All rights reserved. Created at room temperature by X-ray irradiation at the dose of about 5 kGy radiation induced centres in stable octacalcium phosphate (OCP) obtained by double transformation of α -tricalcium phosphate (α -TCP) are studied by means of the conventional and pulsed electron paramagnetic resonance (EPR). No EPR signals within the sensitivity of the used equipment in the non-irradiated samples were detected. In the irradiated species complex EPR spectrum signals due to H₀ and CO-like radicals appear. The obtained results could be used for the tracing of the mineralization processes from its initiation to the completion of the final product and for the in situ identification of the OCP phase.

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