

RADIATION-INDUCED EPR
SPECTRUM OF INITIAL AND THERMALLY
ANNEALED TOOTH ENAMEL POWDERS

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S u m m a r y

The results of experimental and theoretical studies of the radiation-induced EPR spectrum in tooth enamel powders and its changes at thermal annealing are reported. The increase of the annealing temperature has been demonstrated to result in the low-field shifts of the maximum and one of the minima of the EPR signal, and in the redistribution of the intensity in the spectrum. It has been shown that the central section of the spectrum can be satisfactorily described by a dominant contribution from orthorhombic and axial CO_2^- radicals, and its annealing-induced changes can be explained by a thermal transformation of orthorhombic radicals into axial ones. To describe the low-field section of the EPR spectrum, CO^- and SO_2^- radicals have to be taken into account.