

## ESR Spectroscopy of Tooth Enamel

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### Abstrak

*Human teeth enamel have been irradiated with gamma radiation from Co60 at room temperature and at liquid nitrogen temperature. Paramagnetic centers are formed and have been detected by using electron spin resonance (ESR) spectrometer at room temperature. The main signal is very stable asymmetric singlet, and attributed to h centers in the hydroxyapatite crystals. It is revealed that several factors influence the amplitude of the asymmetric signal. The amplitude and pattern of the asymmetric signal which depend on the orientation of the sample with respect to the magnetic field are analyzed. Based on the properties of the asymmetric signal the difference between the microcrystal arrangement of healthy and diseased teeth are explained.*