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Carbonate postsedimentation processes studies by electron paramagnetic resonance

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Abstract

© SGEM2014. All Rights Reserved. The purpose of this study was to show possibilities of the electron paramagnetic resonance (EPR) method on the example of carbonate rocks Lodemskoy area Zimnebrezhnogo diamond district by separating inhomogeneities in them and identifying indicators going changes. In calcite ions Mn^{2+} replace Ca^{2+} , and in dolomite occupy positions as Ca^{2+} as well as Mg^{2+} positions. Although the basic form of the iron presence in carbonates is Fe^{2+} , but with an increase in the medium oxidation potential some part of the impurity iron as Fe^{3+} is included a Ca^{2+} position in calcite and position Mg^{2+} in dolomite. EPR spectrometer X-band PS 100X (ADANI, Minsk) for recording the spectra at room temperature was used with including $Al_2O_3:Cr^{3+}$ crystal in the side hole of the cavity as internal standard lines. Postsedimentary processes carbonates may be explained by the fact that in this area developed ultrabasic rocks (kimberlitic), which is a hotbed for ions Cr, Mn, Fe, Mg which migrate as a true solution and diffuse into the structure of the carbonates, the cations occupying the position that resulted in neoplasm of calcite and dolomite.

Keywords

Annealing, Calcite, Dolomite, Electron paramagnetic resonance, Organic matter