

Electron paramagnetic resonance and quantitative color investigations of various vacuum heat treated wood species

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Abstract

© Kazan Federal University (KFU). The effect of the heat treatment duration on the electron paramagnetic resonance signal amplitude of free radicals for various wood species was observed. It was found that the amplitude of the electron paramagnetic resonance signal grows linearly with the vacuum heat treatment duration. The quantitative measurements of color changes for various wood species (pine, spruce, larch, birch and small-leaved lime) were performed. It is found that results of EPR experiments and color measurements of heat treated samples correlate with each other.

Keywords

Colorimetry, EPR, Heat treatment, Thermal modification, Vacuum, Wood