

The influence of sonication and silver nanoparticles doped on viscoelastic structure of agarose gel

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ABSTRACT

The paper presents result of experimental measurements of viscoelastic properties of agarose gel after sonication and with silver nanoparticles doped. Researches were conducted using a HAAKE MARS 2 rheometer (Thermo Electron Corporation, Karlsruhe, Germany), with serrated plate–plate measuring geometry. Viscoelastic properties of samples were measured with oscillation tests at constant deformation rate 0.1 %, and frequency 1 Hz in the temperature range from 278 to 348 K. It was presented that using the sonication before solidification of gel results in increases the storage modulus and complex viscosity of the solidified gel. It was also presented that when silver nanoparticles are doped into agarose gel storage modulus, and complex viscosity start to decrease at lower temperature.