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PHYSICAL NETWORKS BASED ON GELATIN AND AZO-POLYSILOXANES

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Abstract

Novel systems based on modified azo-polysiloxanes and gelatin with potential biological applications were prepared and characterized. Simultaneous rheological and UV irradiation studies allowed evidencing structural modification inside the gelatin matrix. For all analyzed samples a shift in the temperature corresponding to the physical network destructuration, from 30°C (corresponding to gelatin) to 40°C (for the composite) was noticed. The experimental results proved the existence of interactions between gelatin and polysiloxanes intensified after UV irradiation. The increase in the values of G' and G" is a consequence of system restructuration leading to more arranged architectures able to release the included active principle. As a function of the azo-polysiloxane structure, the destructuration temperature of the composite can be tuned in the domain 30- 40°C.

Key words: biopolymers, dynamic moduli, gelatin, nucleobases, rheology

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