



“Gheorghe Asachi” Technical University of Iasi, Romania



ENVIRONMENTALLY FRIENDLY HYDROGELS BASED ON POLYACRYLAMIDE AND ACETONE-FORMALDEHYDE RESINS: RHEOLOGICAL MONITORING

**Andrei Rosu¹, Camelia Mihailescu¹, Simona Bistriceanu¹, Gabriela Halitchi²,
Maria Lungu¹, Maricel Danu³, Constanta Ibanescu^{1,3*}**

¹*“Gheorghe Asachi” Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection*

²*Apollonia University of Iasi, Faculty of Dental Medicine*

³*“Petru Poni” Institute of Macromolecular Chemistry*

Abstract

Cosmetics, toiletry and household cleaning products are often based on different types of polymeric gels with specific rheological behavior. Dynamic shear oscillation measurements were used for the monitoring of in situ polymerization process, and to determine the viscoelastic properties of the hydrogels based on polyacrylamide and acetone-formaldehyde resin. Both storage modulus G' and loss modulus G'' were measured in real time during the gelation process carried out directly between the parallel plates of the rheometer. Correlation between rheological parameters and desired sensory properties were established. All the studied systems presented a gel-like behavior exhibiting different consistencies and degrees of structural stability.

Key words: crossover point, hydrogels, structural stability, viscoelastic properties

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* Author to whom all correspondence should be addressed: E-mail: ibanesu@ch.tuiasi.ro, cibanesu@tuiasi.ro