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To the article "Effects of polyacrylamide hydrolysis on molecular characterization"

REVIEW

The fact that polyacrylamide reacts with small particles in solutions and mixtures, surrounds them, covers their surface, and collects them as a separate phase, that is, the formation of flocs, depends to a large extent on a number of parameters, such as the polymer's molecular mass, flexibility and mobility to conformational change, ionogenic nature, and the tendency to interact with flocculating particles. indicated in the article.

In order to increase the flocculating ability of polyacrylamide, if it is partially hydrolyzed, for example, up to 30%, an anionic derivative can be highly effective, but it is based on the fact that hydrolysis at a higher-level lead to the formation of gel-structures of polyacrylamide. Considering that particle flocculation takes place over time under certain thermodynamic conditions, it is said that this process lasts for a long time if there are no external influences. To accelerate this, it is important to transfer the macromolecules from a cellular state to a spread state, making it possible for them to be surrounded by particles. It is shown that such favorable conditions can be created in the flow, for example, when the molecules move to a spread and oriented ordered state under the influence of symmetric penetrating force lines along the central axis of the longitudinal flow.





For systematic research, polyacrylamide was selected for partial alkaline hydrolysis, its molecular mass and conformational characteristics were determined, sulfur microparticles were prepared and polyacrylamide was mixed with water to form a suspension, and structural and phase change characteristics of the suspension were studied in different regimes of "sedimented" and "free" longitudinal flows. and a method for determining the possibility and conditions of formation of flocs in laminar and turbulent regime flows is proposed. Structural and phase changes in longitudinal flow are found to be effective in a short capillary viscometer.

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Kind regards,

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