

Abstract Submitted  
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**An experimental investigation on transient change in viscoelasticity in mixing and reaction processes between a water-soluble polymer solution and a metal ion.** MITSUMASA BAN, YUICHIRO NAGATSU, IWATA SHUICHI, YUTAKA TADA, Nagoya Institute of Technology, Japan — We have experimentally investigated mixing and reaction processes between a partially hydrolyzed polyacrylamide (PAM) solution and iron ion. We added a solution including iron ion to a vessel in which the PAM solution was stirred by an impeller at a constant rotational speed. We observed flow behavior in the vessel during and after the addition of the iron ion solution. We found transient flow behavior. After the addition of the iron ion solution, Weissenberg effect started to occur. It should be noted that Weissenberg effect is not observed before the addition in the present experimental condition. When the rotation of the impeller was kept, Weissenberg effect gradually disappeared and a free surface of the solution finally became flat. In order to elucidate mechanism for the observed transient phenomenon, some measurements by means of a rheometer have been performed. Finally, we propose the mechanism associated with interaction between iron ion and the polymer chain.

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