

## PE5

### Anion Effects on Changes in Viscoelasticity of Polypyrrole during Electrochemical Growth in Neutral Aqueous Solutions

중성수용액에서 폴리피롤의 전기화학적 성장시 발생하는 점탄성변화에 미치는 음이온효과

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A large number of works were reported to understand the electrochemical growth of polypyrrole on conducting substrates in aqueous as well as in nonaqueous solutions. Recently most research with polypyrrole has tended to be directed toward technological applications, but many fundamental physical and chemical properties of polypyrrole remain unknown. In particular, microrheological property of polypyrrole has been largely neglected until the advanced electrochemical quartz crystal microbalance technique was introduced by Muramatsu et al. To study anion effects on microrheological property of polypyrrole, we investigated changes in viscoelasticity of polypyrrole during electrochemical growth in neutral aqueous solutions by means of *in situ* electrochemical quartz crystal oscillator method. The results showed that the films of polypyrrole synthesized in  $KPF_6$  and  $KClO_4$  were more viscoelastic than the ones in  $KCl$ ,  $KNO_3$ ,  $KBr$ ,  $KBF_4$ ,  $K_2SO_4$  and sodium dodecyl sulfate. The growth rate of polypyrrole in SDS was faster than that in the others utilized. Polypyrroles synthesized in neutral solutions were more elastic than those in acidic solutions.