

Preparation of electroconductive Poly(vinyl chloride)/
Poly(pyrrole) composite and its electrical properties

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Conducting Poly(vinyl chloride)(PVC)/Poly(pyrrole)(PPy) composite films were prepared by polymerizing pyrrole vapor in PVC films impregnated with ferric chloride as an oxidant, and their electrical conductivity and mechanical properties were studied. After polymerization of pyrrole for one hour, the composite films showed the conductivity as high as 10^{-5} - 10^{-2} S/cm and it has increased with increasing the concentration of the oxidant and polymerization time. The formation of PPy in PVC matrix has been confirmed by FT-IR spectrum and scanning electron micrographs, and the electrical conductivity measured by the four-point method. The conductivity increased 1 order of magnitude by mechanical drawing, it was related with orientation of PPy in PVC/PPy composite film.