

Turkish Journal of Chemistry

Turkish Journal

Proton Conduction in PVPA --Benzimidazole Hybrid Electrolytes

of

Fatma SEVİL, Ayhan BOZKURT

Department of Chemistry, Fatih University, 34500 Büyükçekmece, İstanbul-TURKEY

e-mail: bozkurt@fatih.edu.tr

Chemistry

 [Keywords](#)
[Authors](#)

Abstract: Proton conducting properties of benzimidazole (BnIm) doped poly(vinylphosphonic acid) (PVPA) were studied. The doping ratio, x , which is the number of moles of BnIm per mole of polymer repeat unit, varied from 0.5 to 2. The samples were characterized by FT-IR spectroscopy, thermogravimetric analysis (TG), differential scanning calorimetry (DSC) and impedance spectroscopy. The IR study indicates the protonation of heterocyclic units from the "free nitrogen" side. The proton conductivity and thermal stability of the blends increase with x . Maximum conductivity of PVPA x BnIm blends is approximately 10^{-3} S/cm at 150 °C.



Key Words: Poly(vinylphosphonic acid), benzimidazole, proton, conductivity, thermal properties

chem@tubitak.gov.tr

Turk. J. Chem., **29**, (2005), 377-383.

Full text: [pdf](#)

[Scientific Journals Home Page](#)

Other articles published in the same issue: [Turk. J. Chem.,vol.29,iss.4.](#)