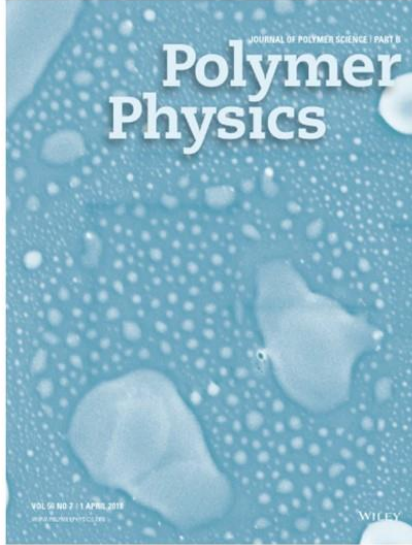


Fonksiyonel Polimer ve Kompozit Malzemeler

Grup içerisindeki çalışmalar farklı uygulama alanlarına yönelik polimer ve kompozit malzemelerin sentez ve karakterizasyonunu içermektedir. Sözkonusu uygulamalar **biyomedikal uygulamalar** ve **sürdürülebilir teknolojiler** olarak sınıflandırılabilir. Biyomedikal uygulamalar kapsamında yapılan çalışmalarda, kemik doku mühendisliği ve kontrollü ilaç sistemlerine yönelik polimer ve kompozit biyomalzemelerin tasarımı, sentez ve karakterizasyonu gerçekleştirilmektedir. Sürdürülebilir teknolojiler kapsamında ise doğal yenilenebilir kaynaklı (bitkisel yağlar, kaju kabuğu sıvısı, çitosan, selülöz vb.) polimerik malzemeler, termosetleşen reçineler, yanma dirençli türevlerinin geliştirilmesi ve doğa dostu alternatif enerji kaynağı Polimer Elektrolit Membran Yakıt Pilleri için polimer ve kompozit membranların geliştirilmesi çalışmaları yürütülmektedir.

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Partially sulfonated poly(aryl ether sulfone) (PESS) was methacrylated via a reaction with glycidyl methacrylate (PESSGMA) and cross-linked via radical polymerization with styrene and vinylphosphonic acid (VPA). From the research of Erde Can and Esra Yılmaz on page 558, this SEM image of the surface of the PESSGMA/STY/VPA(70/15/15) copolymer membrane indicated that the spherical domains which are distributed within the PESSGMA matrix are formed by a copolymer of styrene and VPA. This must assemble into spherical domains in the micro-scale due to the higher polarity of VPA compared to the PESSGMA polymer. Membranes of PESSGMA copolymers incorporating different amounts of VPA exhibited excellent resistance to methanol cross-over with reasonable proton conductivity values at 60 °C.

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