

Formation and Characterization of the Epoxy Resin-Porous Glass Interphases

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Abstract : Investigation of the polymer interphases is an emerging field nowadays. In many cases interphases determine the functionality of a system. There is a great demand for exploration of fundamental understanding of the interphases and elucidation of their formation, dimensions dependent on various influencing factors, change of functional properties, etc. The epoxy applied on porous glass penetrates its pores with an extent dependent on the pore size, temperature and epoxy components mixing ratio. Developed over the recent time challenging sample preparation procedure allowed to produce very smooth epoxy-porous glass cross-sections. In this study, Raman spectroscopy was used to investigate the epoxy-porous glass interphases. It allowed for chemical differentiation between different regions at the cross-section and determination of the degree of cure of epoxy system in the porous glass.

Keywords : interphases, Raman spectroscopy, epoxy, porous glass

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