# Preparation and Characterization of Copolymer of MMA and Styrene in Polymer Impregnated Mortars

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Polymer impregnated concrete is one of the oldest of polymer cement composites and exhibits superior mechanical and durability properties compared to conventional cement concrete. In the present study, polymer impregnated mortars (PIC) with copolymer of methyl methacrylate (PMMA) and styrene were prepared by impregnating precast cement mortars with a mixture of methyl methacrylate (MMA), styrene and 2, 2'-Azobisisobutyronitrile (AIBN) as an initiator. The optimization of the impregnation time was determined by visual inspection of the depth of permeation of the above mixture into the cement mortar samples. Both the conventional hot water method and the microwaves method were employed to polymerize the co-monomer in the specimens. FTIR and UV spectrophotometer employed to characterize the copolymer in the polymer impregnated mortars revealed that copolymer was formed when the feed ratio of MMA: Styrene was 60:40. GPC revealed the molecular weight of the copolymer in the PIC as 28,616.