

Laser Ablative Structural Modification of Poly(ethylene-*alt*-maleic anhydride)

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Pulsed IR laser ablation of poly(ethylene-*alt*-maleic anhydride) results in the deposition of polymeric films possessing the same ratio of anhydride and $-\text{CH}_2-$ groups and represents a very rare example of laser ablative deposition of polymeric films that are structurally identical to the ablated polymer. This process differs from the conventional thermolysis of poly(ethylene-*alt*-maleic anhydride) that is controlled by expulsion of CO_2 and CO and yields a nonpolar polymeric residue. The IR laser ablation of poly(ethylene-*alt*-maleic anhydride) in sodium metasilicate affords deposition of polymeric films containing carboxylate ($-\text{CO}_2^-$) groups. This process is the first example of reactive ablation in which the deposited polymeric film incorporates constituents of two different species exposed to laser radiation.