IR laser ablative desulfurization of poly(1,4-phenylene sulfide)

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Abstract

Pulsed infrared laser-induced ablation (PLAD) of poly(1,4-phenylene sulfide) (PPS) results in the extrusion of sulfur and deposition of thin films that are a blend of initial PPS and sulfur–polyaromatic polymer composite. The process is demonstrated to differ from the conventional heating which leads to a solid material with S content and bonding similar to those in PPS. The PLAD of PPS thus represents a unique example of the desulfurization of S-containing polyaromatic materials.

Keywords: Poly(1,4-phenylene sulfide); Laser ablation; Desulfurization