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Laser Ablation and Processing of Polystyrene Film Studied with Atomic Force Microscopy and Quartz Crystal Microbalance YINGZI HAO, OMAR MUSAEV, NANXIA RAO, JERZY WROBEL, DAMING ZHU — We used atomic force microscopy and quartz crystal microbalance to study laser ablation and processing of polystyrene in ambient environment. We used a UV nitrogen laser (337 nm) for single pulse and multiple pulse treatment of polymer film covering gold film on the quartz crystal. Laser pulse energy is regulated by diaphragm. Laser pulse or series of pulses illuminated a chosen area of polystyrene film through a mask. Morphology of processed surface is analyzed by atomic force microscope. From analysis of resonance frequency of quartz crystal mass change of polymer film can be determined and morphological changes can be distinguished from material removal.

Yingzi Hao

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