UV induced modification of polymer surface to obtain cell friendly polymer surface and to fabricate polymer waveguides

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We have investigated the deep-UV-induced refractive index modification of PMMA (poly(methylmethacrylate) and alicyclic methacrylate copolymers (OPTOREZ-series) for realizing integrated optical circuits for the development of cheap, disposable integrated optical sensors for chemical and biological monitoring. We exposed polymer sheets to deep UV light using a quartz/chromium photo mask and fabricated polymer waveguides. At the same time, the adhesion of living mammalian cells on the UV exposed polymer surface was investigated for the application in biosensors. OPTOREZ series showed an exposure dose dependent cell adhesion.

Acknowledgement

D. G. Rabus acknowledges support from the Alexander von Humboldt foundation.

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