

Polymer based waveguiding structures obtained by ion beam irradiation at different energies

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Polymethylmetbacrylate (PMMA) samples were modified by ion beam irradiation in order to generate regions of increased refractive index. Ion beams of various atomic masses and energies were used. Planar waveguides as well as structured waveguides were generated. Passive components, e.g. splitters and Mach-Zehnder interferometers, were fabricated. Applying ion beams of 1.4 MeV/u energies the generated structures are buried in a certain depth. Different masking techniques were used. First results with a newly developed material (PMMI) are presented. Attenuation measurements at different wavelengths are reported.