All polymer, injection molded nanoslits, fabricated through two-level UV-LIGA processes

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Micro- and nanofluidic systems fabricated in silicon and glass substrates are expensive and have long production cycles. To minimize the time used by researchers to fabricate their systems, rather than using them, medium to high volume throughput of specific chips, containing fluidic channels in the micro- and nanoregime is required. To obtain this, injection molding is included in the research process for making several chips (100-1000) with the same layout. The time it takes for the individual chip to be fabricated in this way is much shorter than with conventional cleanroom methods, and the price is equally lower. Optimization of the final chip is explored, by looking at which aspects ratios are possible to obtain in polymer chips. Finally, signal to noise ratio of the chips used for fluorescent experiments is investigated, by an expected reduction of the excitation of fluorescent states in the polymer with the use of chips in different colors.

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