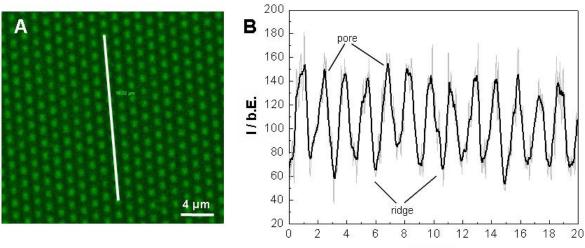
## **Electronic Supplementary Information**

**Figure S1:** Pore filling of a macroporous silicon substrate (0.9  $\mu$ m pore size) immediately after incubation with an experimental buffer containing 0.5 mM FITC dextran (4 kDa). (A) Confocal fluorescence micrograph (xy-section) 5 min after addition of the dye solution. (B) Relative changes of the fluorescence intensity along the white line in (A) indicating a periodic alternation of completely filled pores (maxima) and the ridges between pores (minima). The light gray line represents the microscopic raw data, the black line is the smoothed curve after adjacent averaging with a 20 data point sliding window.



s/µm