Supplementary Material (ESI) for Lab on a Chip


# Attenuated Total Reflection Fourier Transform Infrared Spectroscopy for On-Chip Monitoring of Solute Concentrations

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## Microfluidic device fabrication: adhesive film sealing

Following thermoembossing, the imprinted polymer sheets were sealed by low-temperature bonding or with an adhesive film. References outlining the former method are given in the main text. In the case of sealing *via* adhesive film, we ensured that the exposed adhesive coating in the channel did not leach into the solution phase during the timeframe of the experiments (ca. 10 minutes) by monitoring the ATR-FTIR spectra acquired from the flowing solution in the microchannels. Figure S1a shows the spectrum of the pure adhesive. The strongest and most isolated absorbance peak (1730 $cm^{-1}$) was used to determine the presence of dislodged or dissolved adhesive. No signal from the adhesive could be detected in the TX-100 solutions acquired for this work. Figure S1b is a typical spectrum of a TX-100 solution flowing through the MF device which was sealed with an adhesive film.

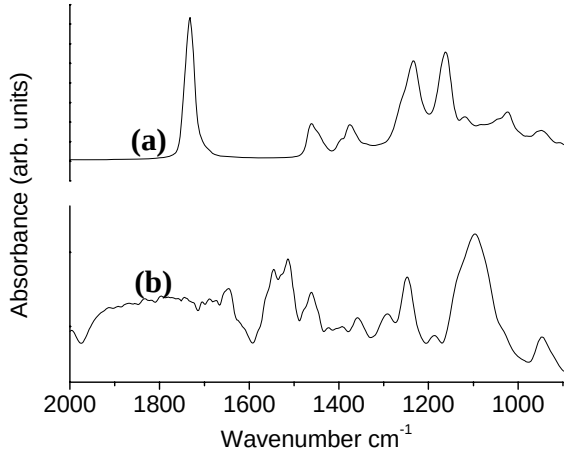


**Fig S1** (a) ATR-FTIR spectrum acquired from the adhesive side of the adhesive film. (b) Spectrum acquired from TX-100 solution ($C_{TX\text{-}100}$=32 mM) flowing through MF device (Q=3.0 mL/h) sealed with the adhesive film. The spectrum in (b) was acquired 10 minutes after flow was established through the device. Both spectra (a) and (b) were collected using 16 scans at 10 kHz and 4 $cm^{-1}$ spectral resolution.