Supporting Information

Microdroplet Extraction Assisted Ultrasensitive Raman Detection in Complex Oil

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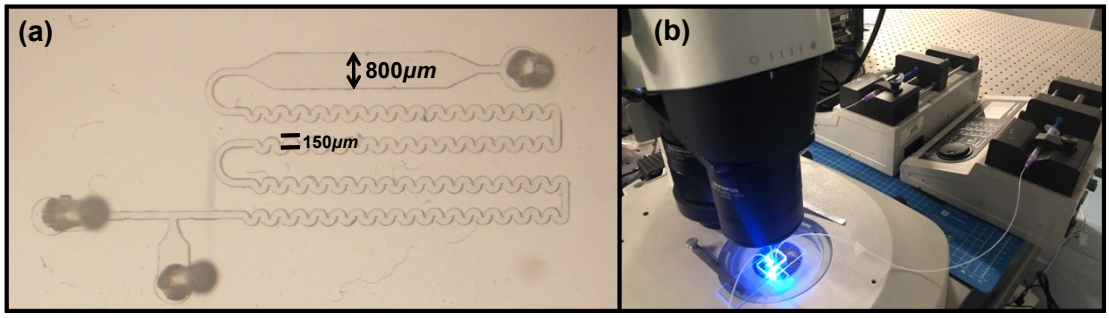

Fig. S1 (a) The geometry of the microfluidic channel. The serpentine channel and the microdroplet Raman detection channel were 150 and 800 μm wide, respectively. The channel height was 100 μm. (b) Schematic of experimental setup of fluorescence measurements, comprising the microfluidic chip, fluorescence microscope and two syringe pumps.

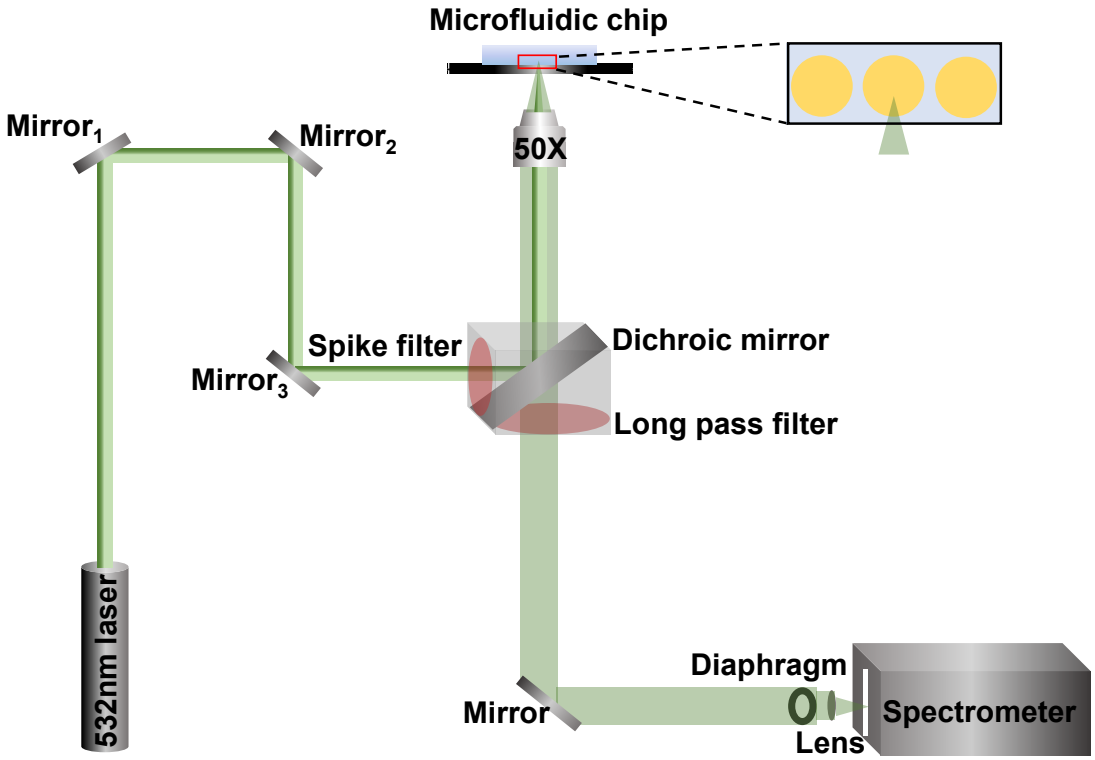

Fig. S2 A schematic of a home-built Raman spectrometer used for microdroplet interrogation.

Table S1. Sensitivity analysis between HPLC and microdroplet Raman.

Concentration of furfural in samples (ppm)	HPLC		Microdroplet extraction assisted real-time Raman spectroscopy microfluidic chip				
	Detection result (ppm)	Deviation (%)	Detection result (ppm)			Deviation (%)	Coefficient of standard deviation (%)
			1	2	3		
1.00	1.07	7.00	1.01	0.95	1.07	4.72	5.15
2.00	1.92	4.00	1.77	2.20	1.96	7.80	8.83
3.30	3.48	5.45	3.32	3.07	3.59	5.37	6.34