

Supplementary Materials: Complete Procedure for Fabrication of a Fused Silica Ultrarapid Microfluidic Mixer Used in Biophysical Measurements

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Deep Etching Fused Silica with KPMR 1010

Figure S1 shows the SEM image of uniform KPMR 1010 layer after developing. The thickness of this layer is $\sim 17 \mu\text{m}$ measured using a Dektak 8M Surface Profilometer (Bruker Corporation, Billerica, MA, USA) (see Table S1). Figure S2 shows the SEM of the etched fused silica channel after removing KPMR 1010. The depth of this channel is $\sim 45 \mu\text{m}$ as measured by the Dektak 8M Surface Profilometer.

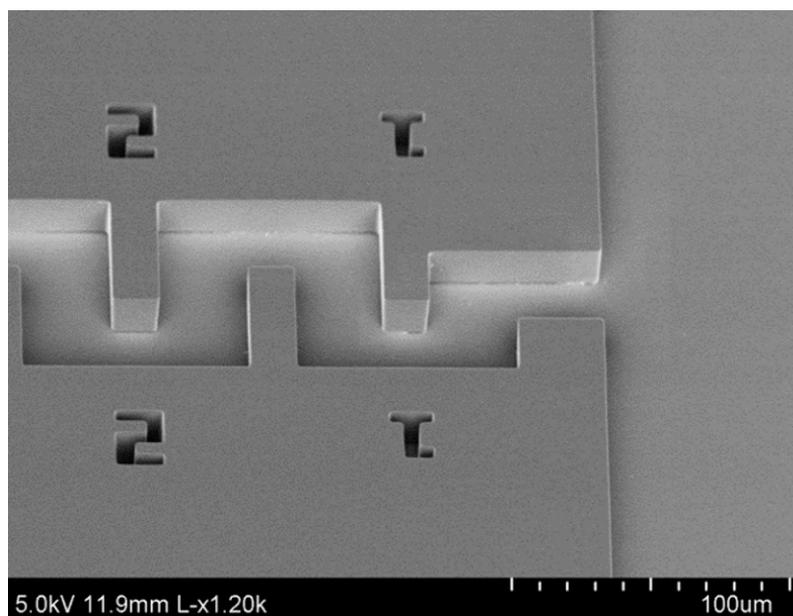


Figure S1. SEM image of KPMR 1010 layer after developing on the fused silica.

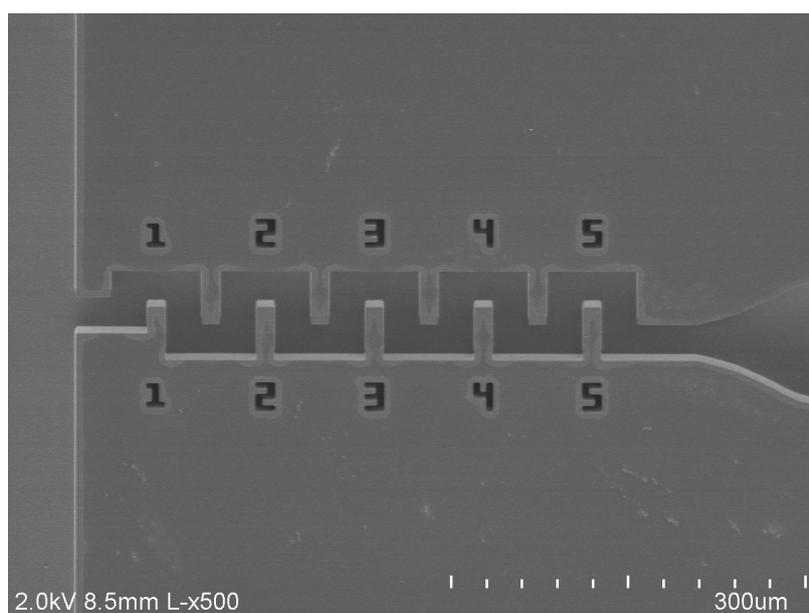


Figure S2. SEM image of etched fused silica channels after removing KPMR 1010.

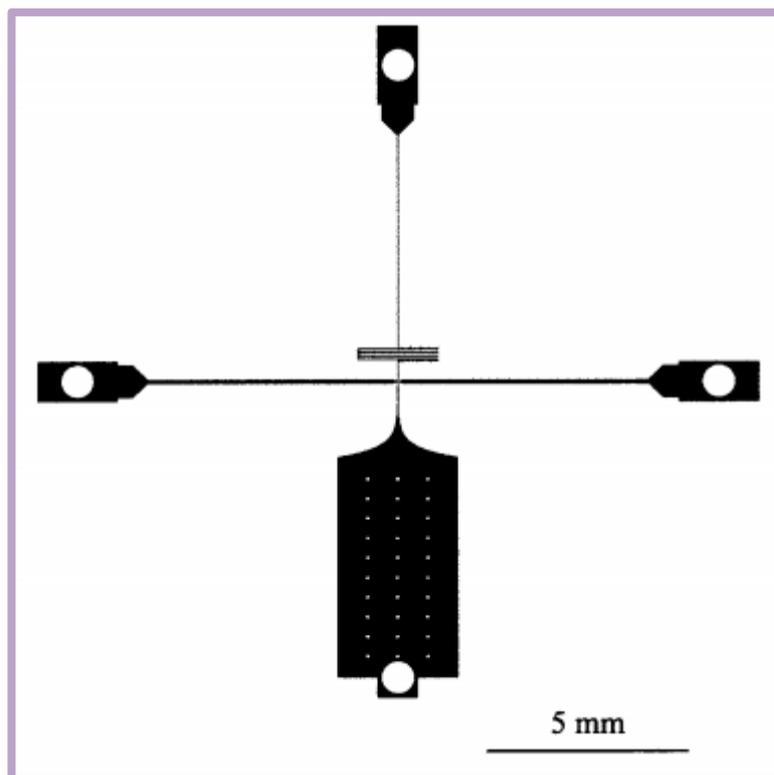


Figure S3. Layout of individual chip [1].

Table S1. Fabrication process for KMPR1010.

Process Parameter	Process Tool	Serpentine Mixer Design
Photoresist	ACS 200 Cluster	KMPR® 1010
Photoresist spin speed	ACS 200 Cluster	1500 RPM
Average resist Thickness	Dektak 8M Surface Profilometer	17.0 μm
UV exposure time	Karl Suss MA6	18.0 s
Development time	AZ 300 MIF	285 s
Total etch time	STS glass etcher	90 min
Etched channel depth	Dektak 8M	45.0 μm

Reference

1. Waldauer, S.A. Early Events in Protein Folding Investigated through Ultrarapid Microfluidic Mixing. Ph.D. Thesis, Michigan State University, East Lansing, MI, USA, 2010.



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