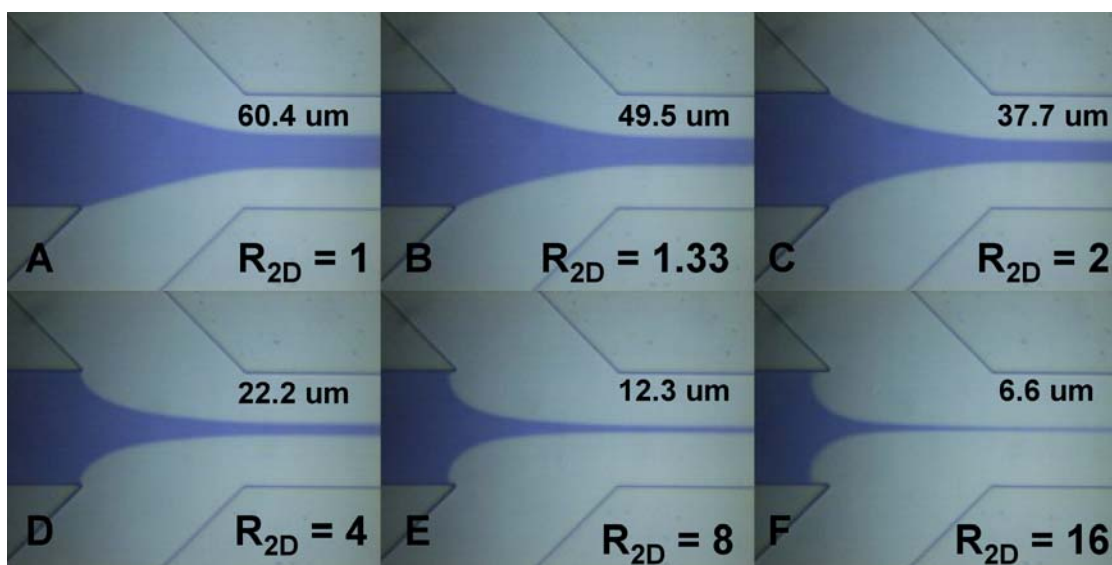


**Fig. 1** Fabrication process flow for both electrical sensing (left) and microfluidics (right) layers, covalently coupled by oxygen plasma bonding of the PDMS and SiO<sub>2</sub> surfaces.



**Fig. 2** Micrographs of 2D focusing region with Trypan blue sample for various R<sub>2D</sub> values.