Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Quantum-dots-encapsulated core-shell barcodes from droplet microfluidics

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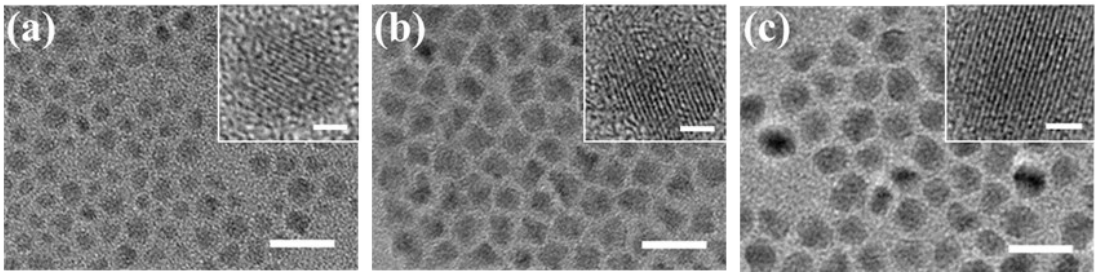

Fig. S1 TEM image of **(a)** QD^{448}, **(b)** QD^{513} and **(c)** QD^{626}. The scale bar indicates 20 nm and 2nm in illustration.

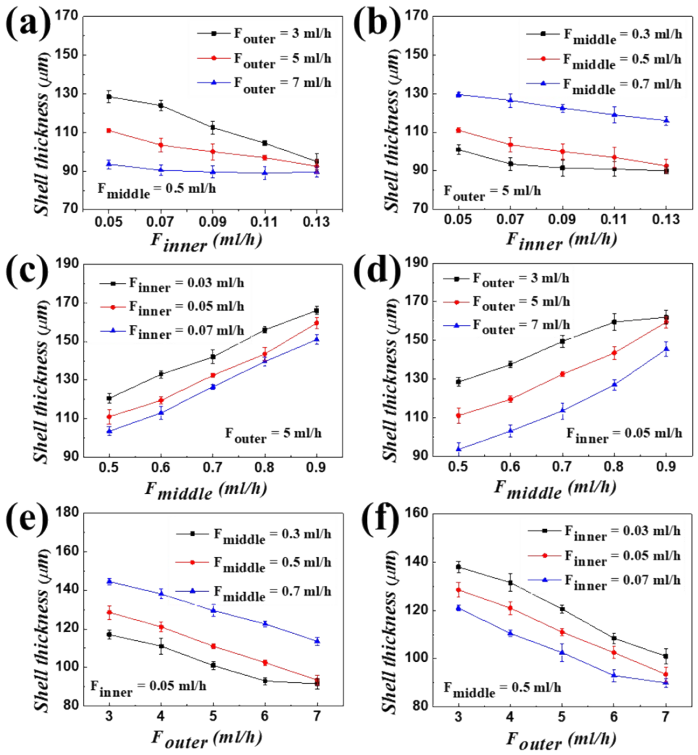

Fig. S2 (a-f) The shell thickness of the drops decreased with F_{inner} and F_{outer}, while increased with F_{middle}. It was also found that when the value of F_{outer} was kept constant and F_{inner}/F_{middle} was changed, Rout showed no regular changes, and when adjusting the ratio of F_{inner} to F_{middle}, none of these parameters (F_{inner}, F_{middle}, $F_{inner}+F_{middle}$) was fixed.

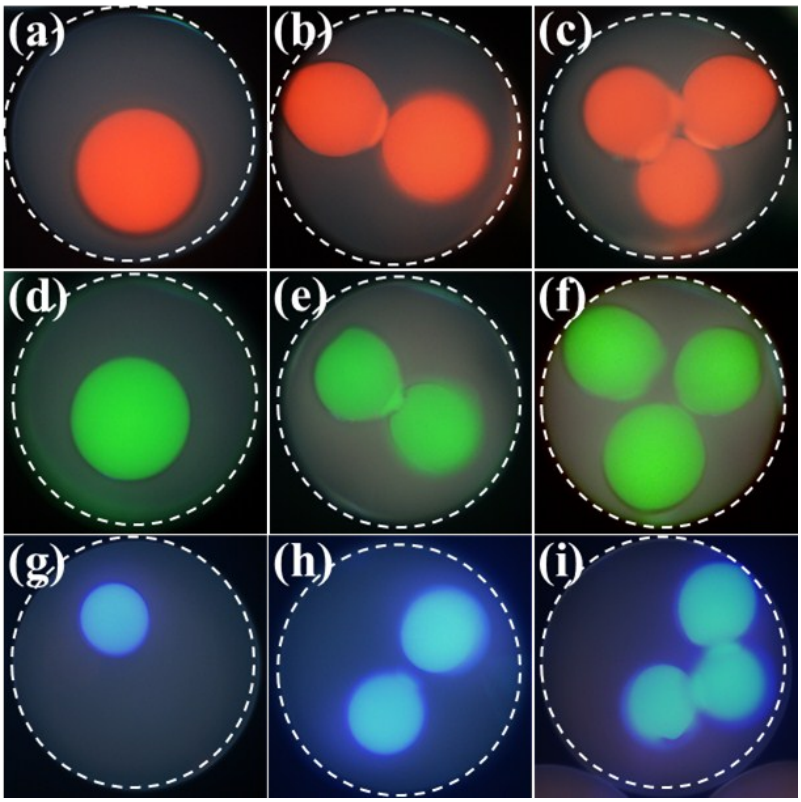

Fig. S3 The fluorescent microscope images of QDs-encapsulated core-shell barcodes with (**a-c**) red QDs, (**d-f**) green QDs and (**g-i**) blue QDs.

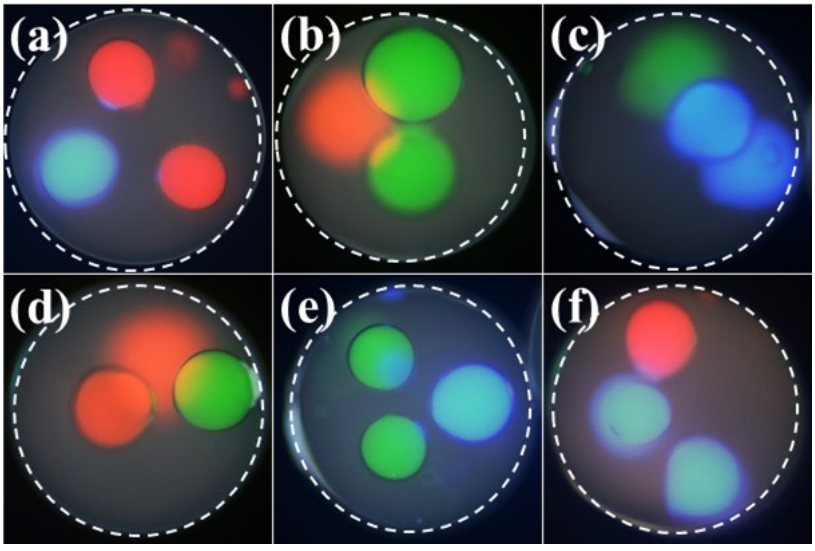

Fig. S4 The fluorescent microscope images of QDs-encapsulated core-shell barcodes with two QDs types. (**a**) barcode 1:0:2, (**b**) barcode 0:2:1, (**c**) barcode 2:1:0, (**d**) barcode 0:1:2, (**e**) barcode 0:2:1, (**f**) barcode 2:0:1 .

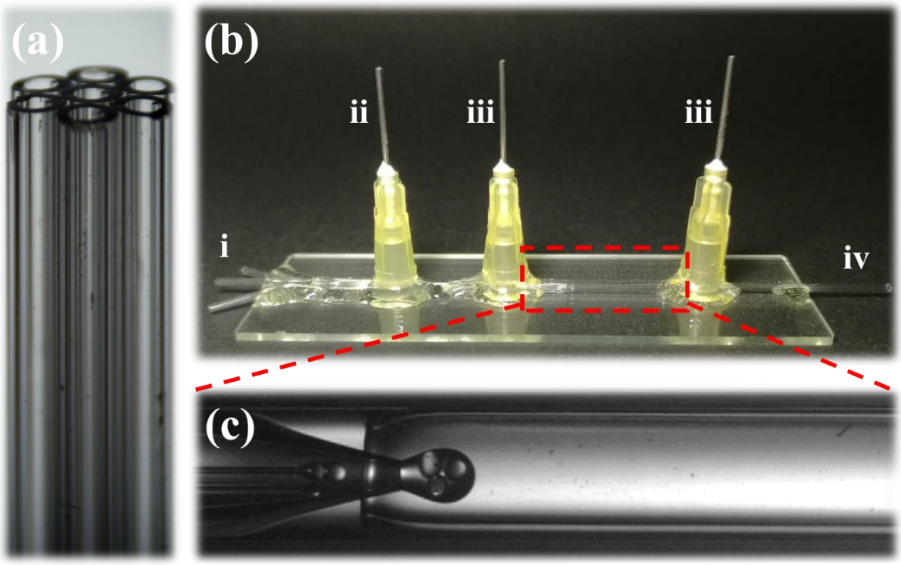

Fig. S5 (a) a microscopy photograph of the seven-bore annular capillary; (b) a digital photograph of the assembled capillary microfluidic device, i–iv are the inner, middle, outer and collection channels, respectively. (c) a real-time generation photograph of microfluidics.

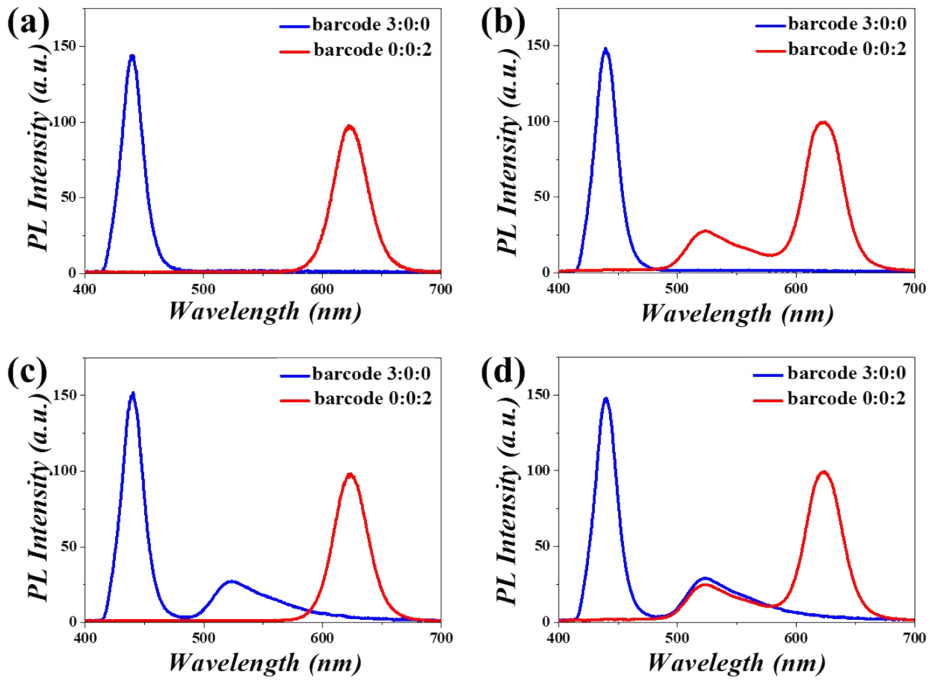

Fig. S6 The fluorescence spectrum of rabbit IgG and human IgG detection by fibre spectrometer, (a) no target antigen existed, (b) only human IgG existed, (c) only human IgG existed and (d) both of two antigen existed.