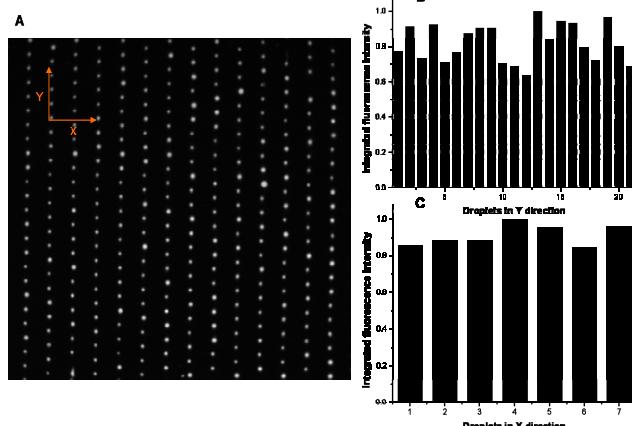
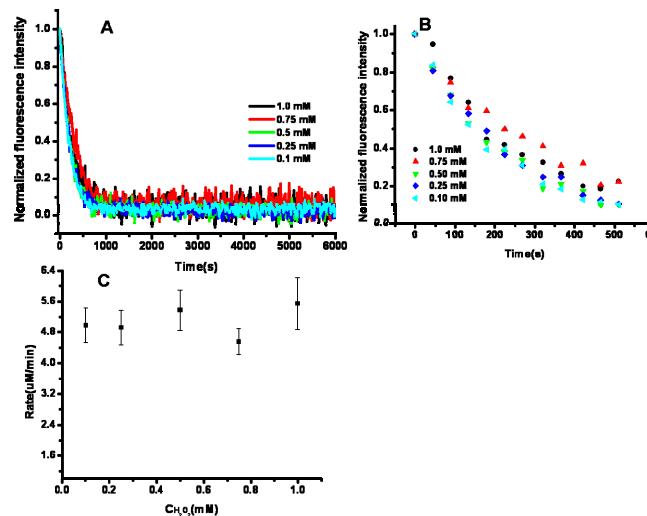


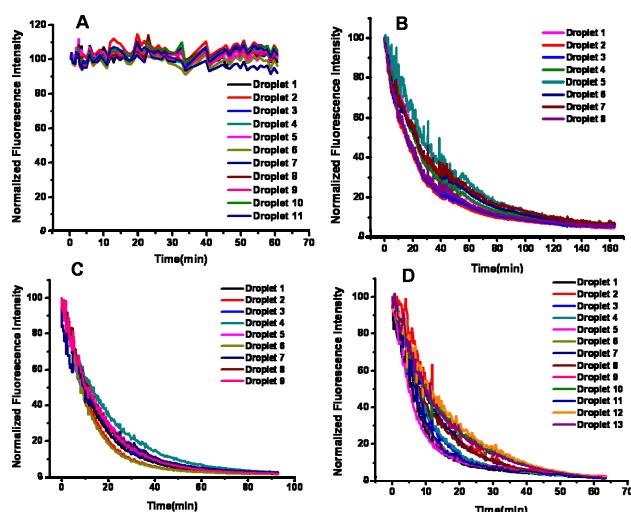
## Supporting Information



**SI 1** (A) The fluorescence image of the array of trapped single droplets containing 50  $\mu$ M resorufin. The droplet position was marked by x and y axis along the row and column of the array. (B, C) The integrated fluorescence intensity of droplets along x and y direction were measured.



**SI 3** 96 plate-well fluorescence assay of 0.07 mg/mL horseradish peroxidase in pH 8.0 Tris-HCl solution was performed with the concentrations of hydrogen peroxide ranging from 0.1 mM to 1.0 mM and 15 50  $\mu$ M resorufin. The fluorescence intensity was recorded by Flashscan 550 (Analytik Jena) using WinFlash at E<sub>x</sub>/E<sub>m</sub> 565/580 nm.



**SI 2** The fluorescence changes of droplets caused by the transfer of the different concentrations of H<sub>2</sub>O<sub>2</sub>: (A) 0 M, (B) 0.03 M, (C) 0.3 M, (D) 0.6 10 M.