

Supporting Information

Determination of Nitrite Ion in environment analysis with a Paper-Based Microfluidic Device

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Supplementary materials:

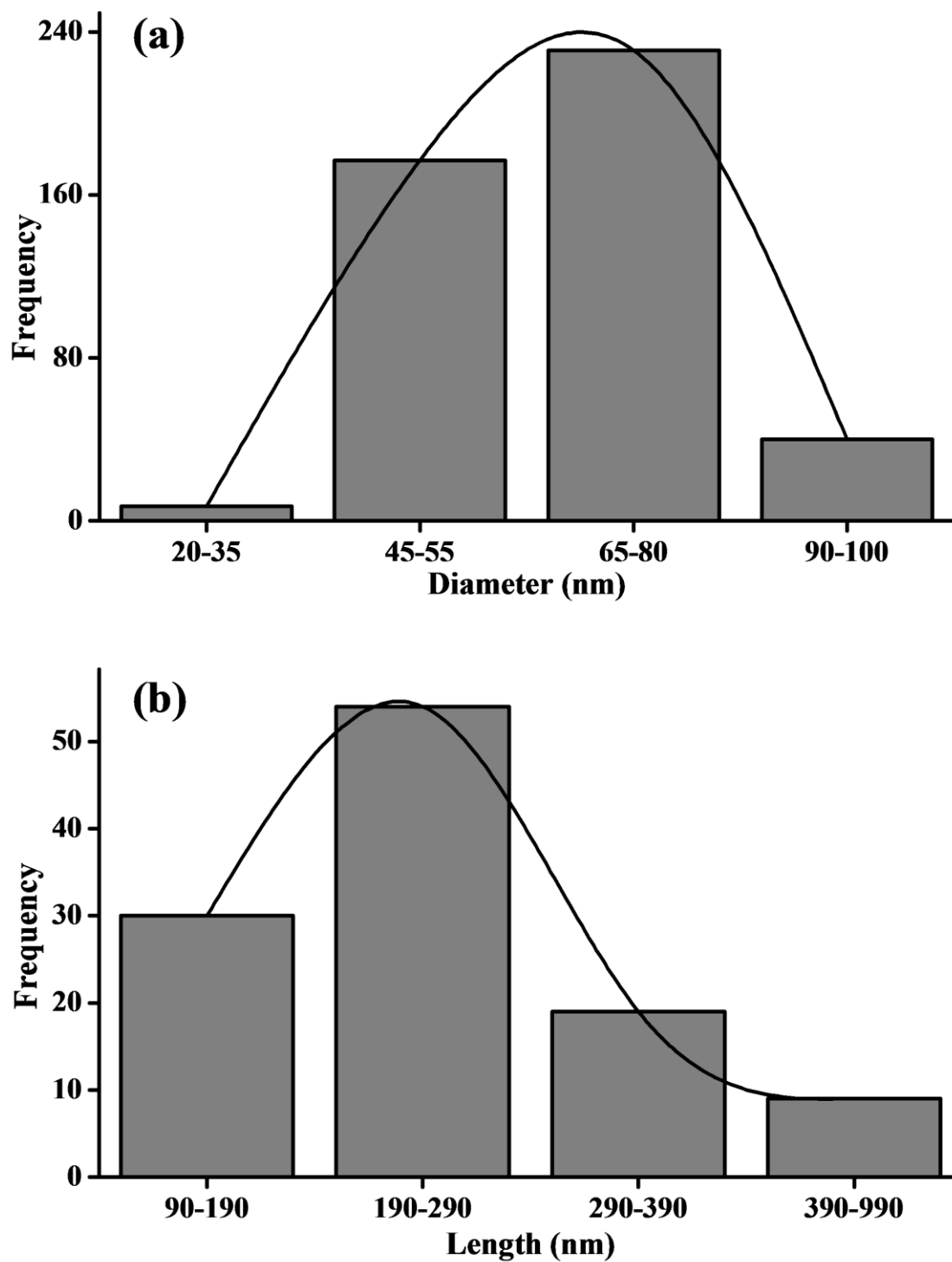


Figure S1. The histogram analysis of the AgNPs, including (a) AgS, and (b) AgW. Particle sizes from SEM images were measured by hand, using a ruler on printed images. A total of (a) 455, and (b) 112 particles are used in this histogram.

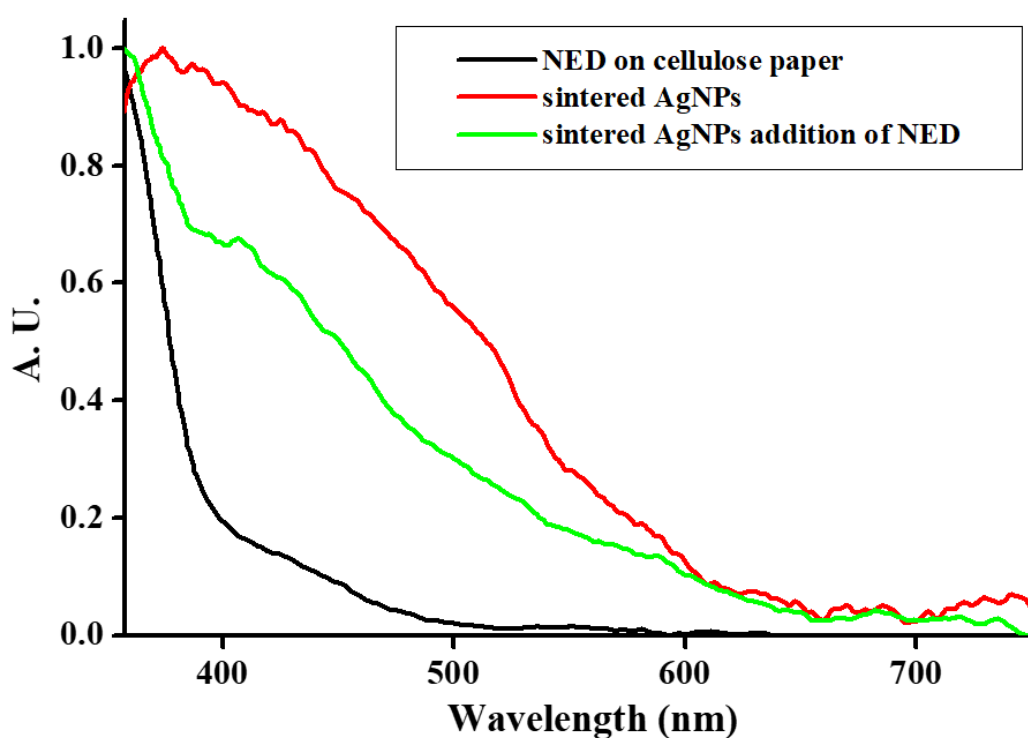


Figure S2. UV-vis absorption spectra of the absorption spectra of NED on cellulose paper, sintered-AgNPs, and sintered-AgNPs addition of NED. The absorption spectra of sintered AgNPs addition of NED were acquired with follow steps: the AgNPs was diluted to 50-fold first and then was sintered. The NED was added to the resulting diluted sintered hybrid AgNPs on cellulose paper, and the absorbance was measured.

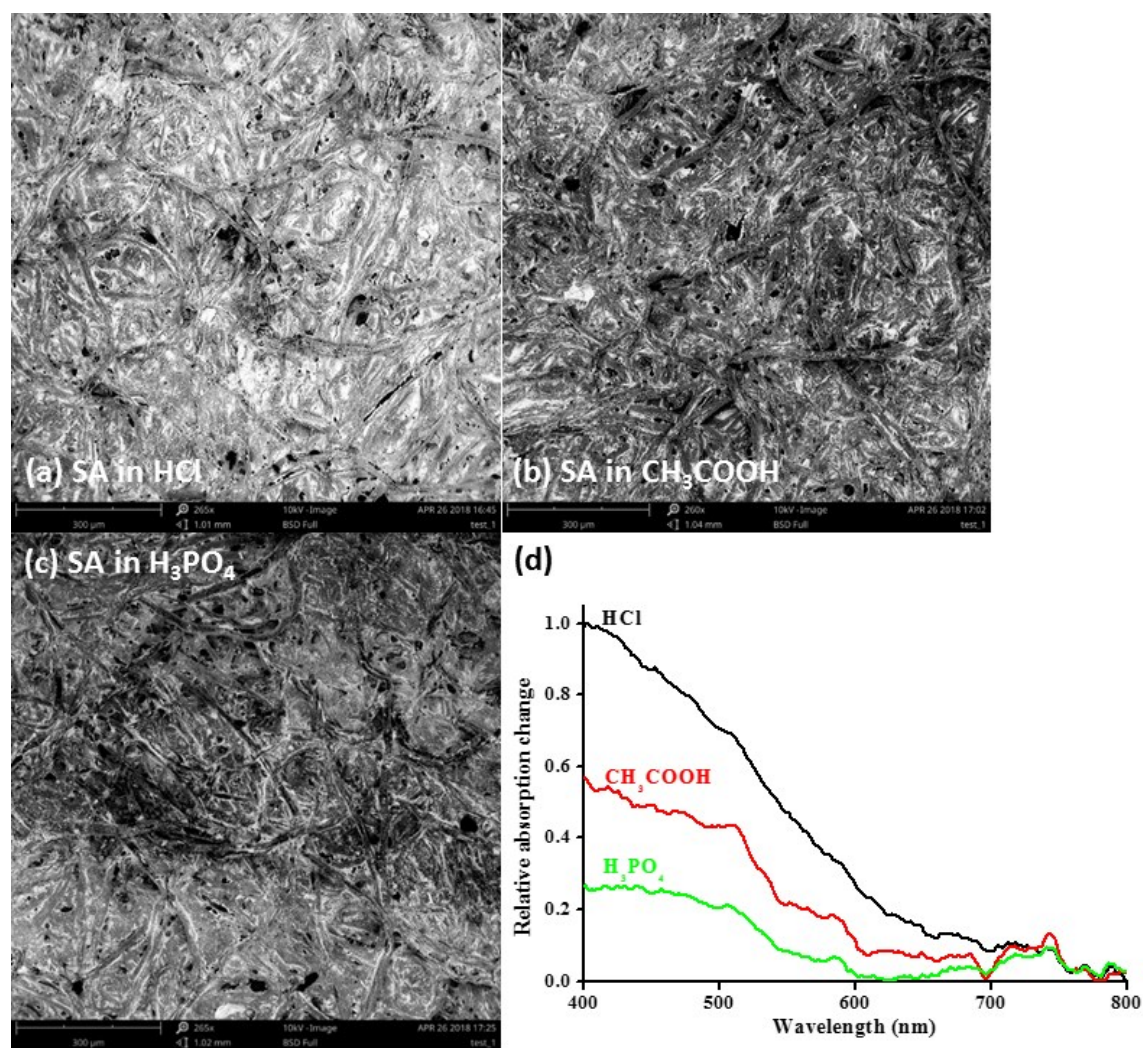


Figure S3. SEM images of SA in different acids (a-c). The all scale bars are 300 μm. (d) UV-vis absorption spectra of SA in different acids adding to the NED layer on the surface of Ag-μPADs.

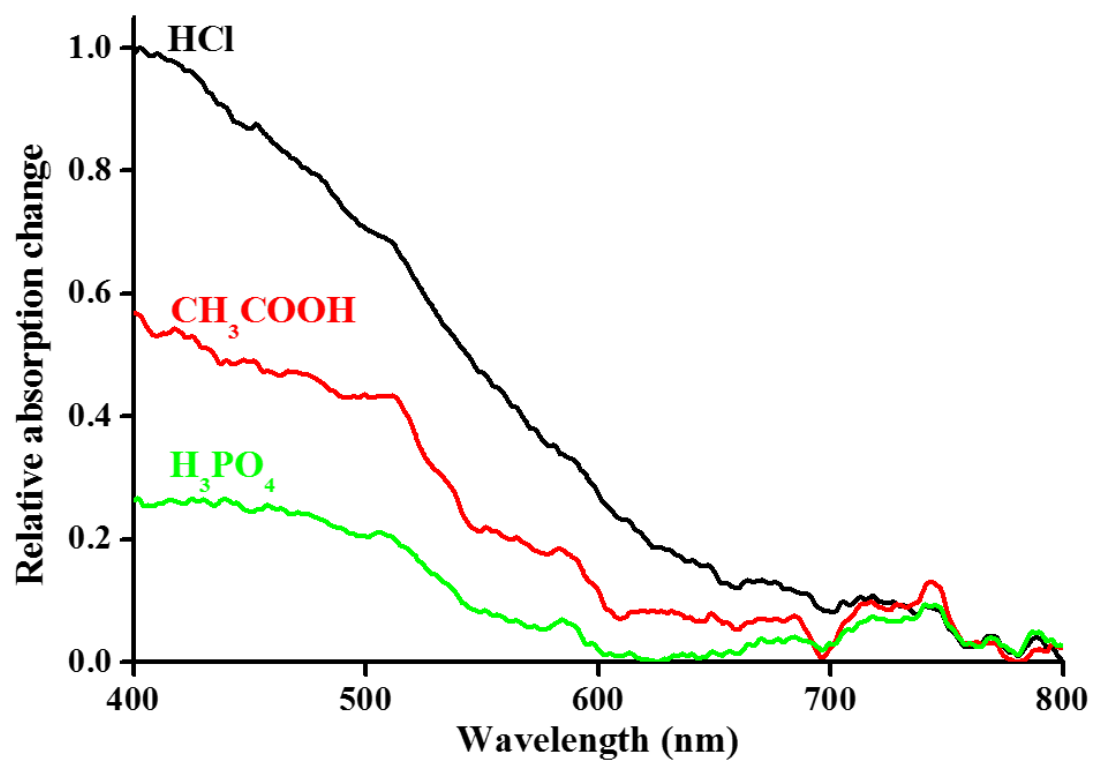


Figure S4. The relative absorption changes in different acids. The concentration of other compounds used in this test were 1% (w/v) of SA, 10^{-4} M of the nitrite solution and 0.1% (w/v) of NED in water.

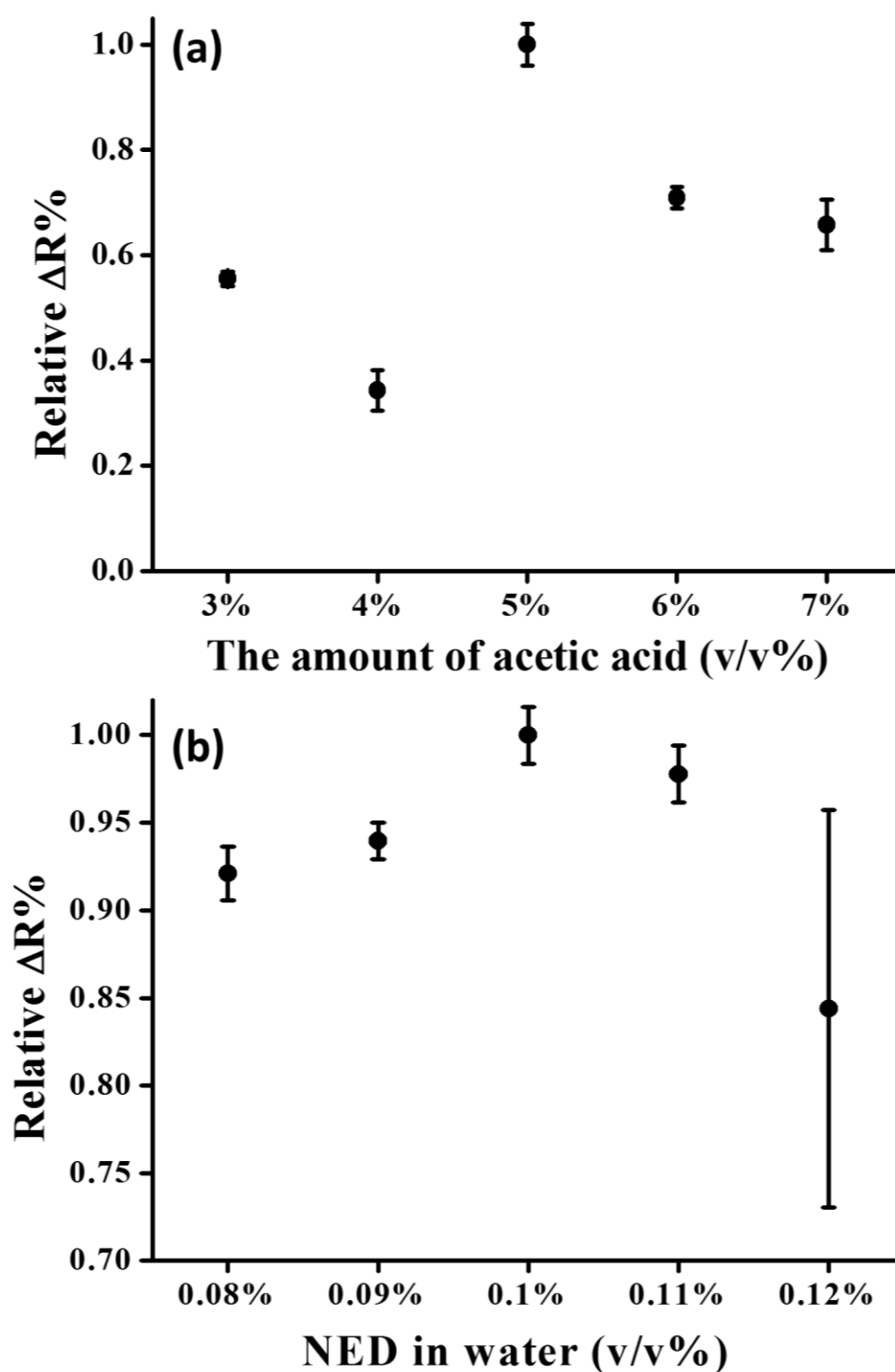


Figure S5. (a) The optimization concentration of acetic acid to dissolve SA (v/v%), the concentration of other compounds used in this test were 1% (w/v) of SA, 10^{-4} M of the nitrite solution and 0.1% (w/v) of NED in water, and (b) the optimum amount of NED in water. Data were obtained from the average values of three replicated

measurements (N = 3).

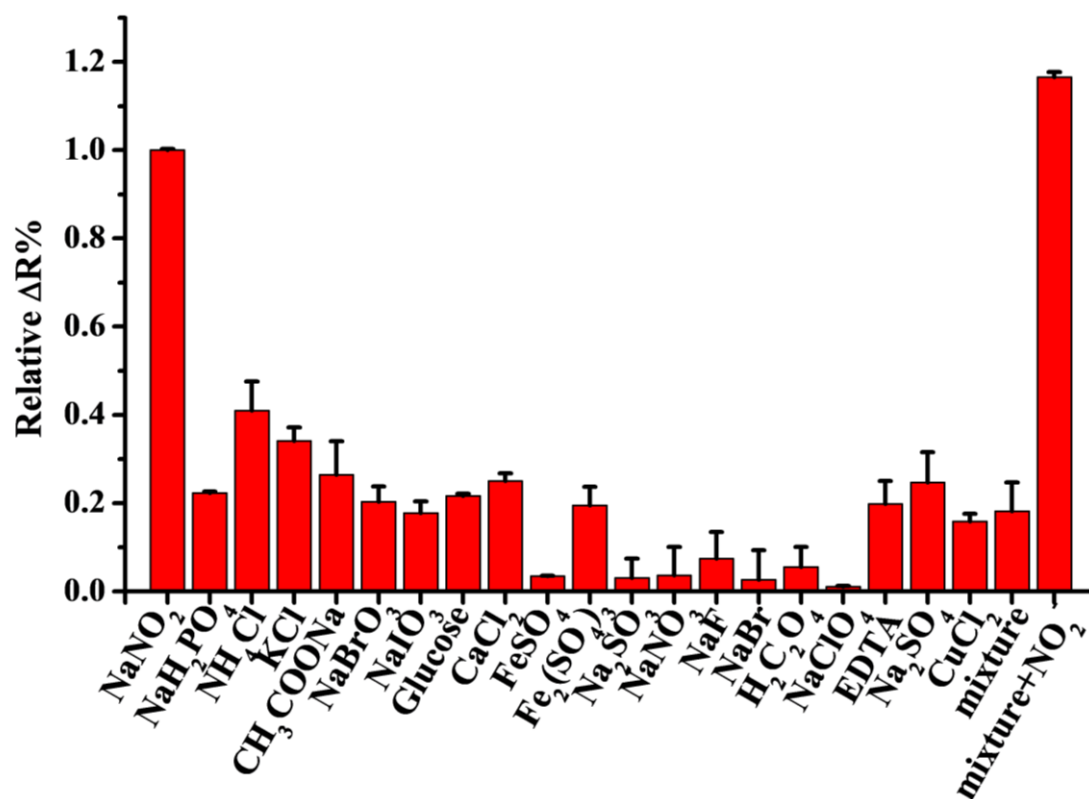


Figure S6. Selectivity of Ag- μ PADs toward various potential interfering anions and molecules. The mixture contained all of the interfering substances. All of the interfering substances concentrations were 100 μ M.

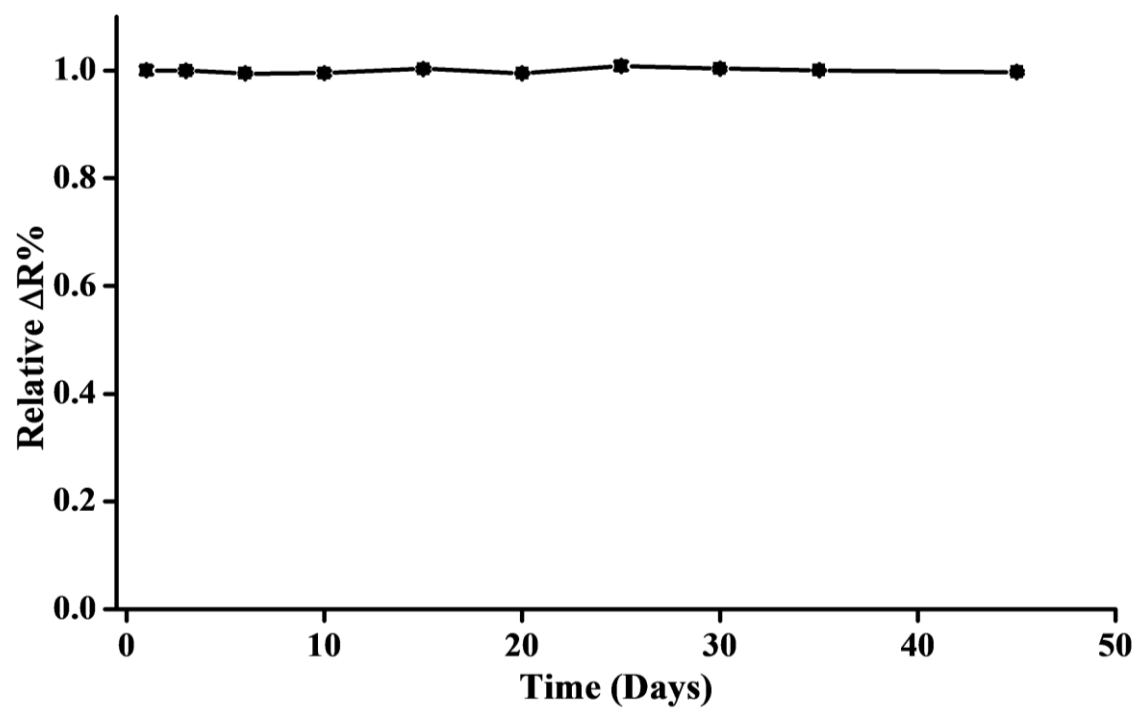


Figure S7. The storage stability of the Ag-μPADs for detection of 10⁻⁴ M nitrite.