
Electronic Supplementary Information

Title: Rapid nitrate determination with a portable lab-on-chip device based on double microstructured assisted reactors

F. Wang,^{‡ab} J.M. Zhu,^{‡ab} X.J. Hu,^{ab} L.F. Chen,^{ab} Y.F. Zuo,^{ab} and Y. Yang^{ab†}, F. H. Jiang,^c C. J. Sun,^c W. H. Zhao^d and X. T. Han.^{dc}*

- a. School of Physics & Technology, Key Laboratory of Artificial Micro/Nano Structure of Ministry of Education, Wuhan University, Wuhan 430072, China.
- b. Shenzhen Research Institute, Wuhan University, Shenzhen 518000, China. E-mail: yangyiys@whu.edu.cn
- c. The First Institute of Oceanography, MNR, China.
- d. Institute of Oceanology, Chinese Academy of Sciences, China.

This PDF file includes:

Figures S1 to S5

Figures

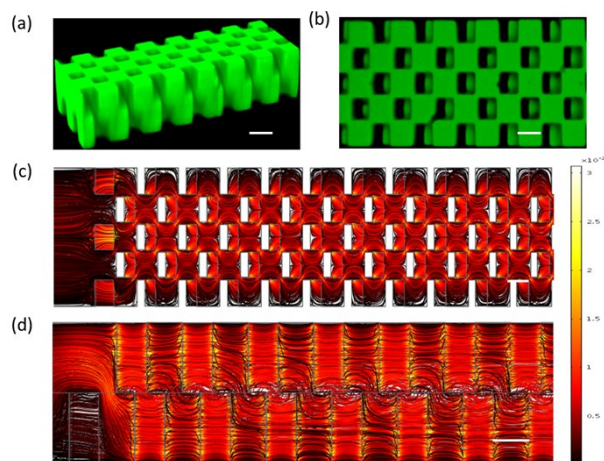


Fig. S1. (a-b) Three-dimensional confocal images of the microreactor with side and top views. Scale bar: 50 μm . (c) Streamlines in the cross section of the microreactor. (d) Streamlines in the vertical section of the microreactor.

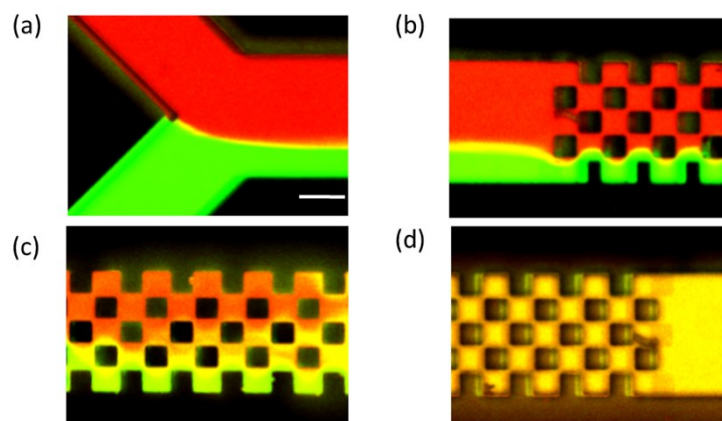


Fig. S2. Three-dimensional confocal images showing the mixing process of the microreactor. (a,b) The inlets of the microreactor. Scale bar: 100 μm . (c) The middle of the microreactor. (d) The outlet the microreactor.

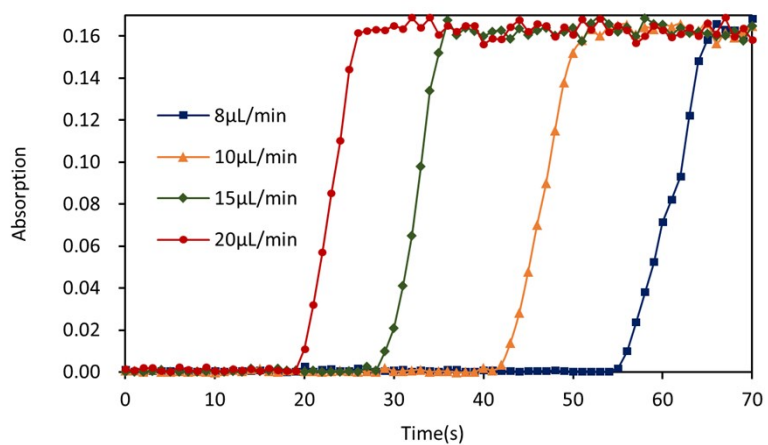


Fig. S3. Effects of flow rate on the Griess reaction. The absorbance was measured per second after the continuous injection of 10 μM nitrite standards and Griess reagent.

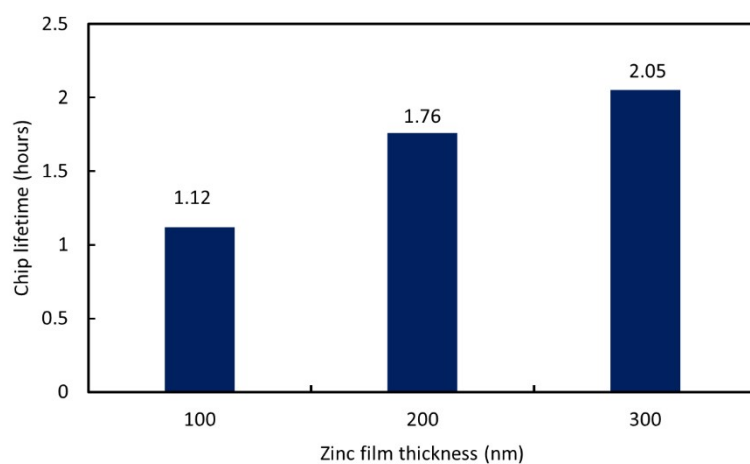


Fig. S4. Relationship between zinc film thickness and the lifetime of the DMARs chip. The lifetime of the chip is defined as the time taken from the beginning of use to the effective signal drops by 10%.

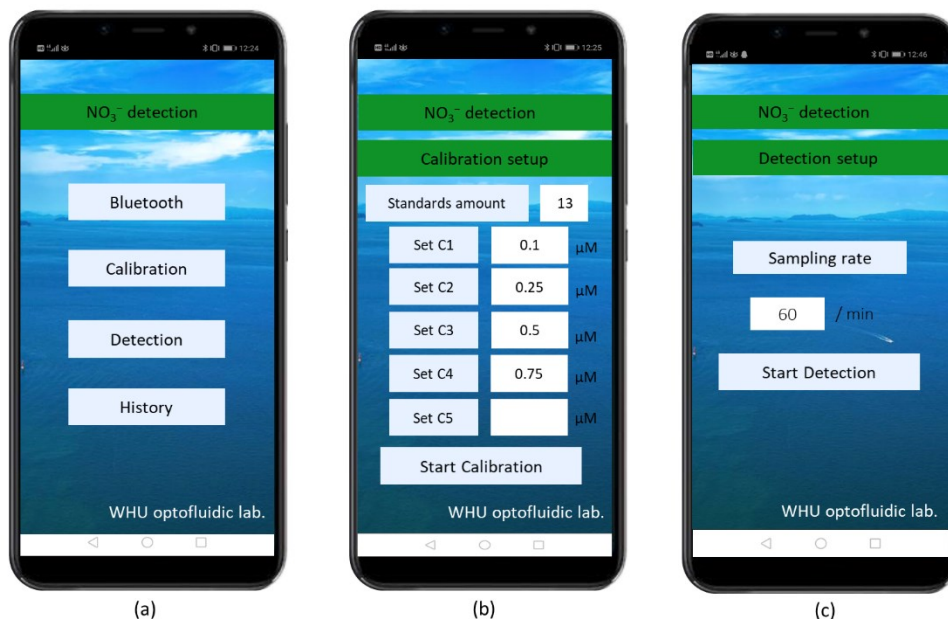


Fig. S5. The images of each functional interface. (a) The main interface of the APP. (b) The interface for calibration setup. (c) The interface for Detection setup.