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

This journal is © The Royal Society of Chemistry 2016

Electronic Supplementary Information

Motion-based glucose sensing based on a fish-like enzymeless motor

Mingtong Li, Hui Zhang, Mei Liu, Bin Dong*

Institute of Functional Nano & Soft Materials (FUNSOM), Jiangsu Key Laboratory for Carbon-Based Functional Materials & Devices, Soochow University, Suzhou, Jiangsu 215123, P. R. China, E-mail: bdong@suda.edu.cn
Video S1. The autonomous movement of the fish-like motor in the aqueous solution containing different concentration glucose.

Video S2. The directed motion of the fish-like motor under the influence of an external magnetic field.

Video S3. Motion-based glucose sensing based on the fish-like motor.
**Fig. S1** (a) CCD image of the fish-like motor in the absence of glucose. A layer of thymol blue is spread on the water surface as the indicator. (b-d) Consecutive CCD images at 1 s interval showing the surfactant released from the fish-like motor in the solution containing 40 mM glucose.

**Fig. S2** (a-d) A series of photographs (at 1 s interval) showing the motion behavior of the rectangle-like motor in the solution with 40 mM glucose. The corresponding trajectory of this motor is shown in (e).
**Fig. S3** The travel distance of the fish-like motor versus the glucose concentration in aqueous solution.

**Fig. S4** The calibration curve of the travel distance of the fish-like motor versus the glucose concentration in human serum.
Fig. S5 The CCD image showing fructose forms a precipitate with calcium hydroxide (a), while glucose does not (b).

Fig. S6 The calibration curve showing the travel distance of the fish-like motor in urine with different concentration glucose after removing the fructose.