

Hydrogel Fluorescence Microsensor with Fluorescence Recovery for Prolonged Stable Temperature Measurements

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1. Fabrication of the Hydrogel Fluorescence Microsensor

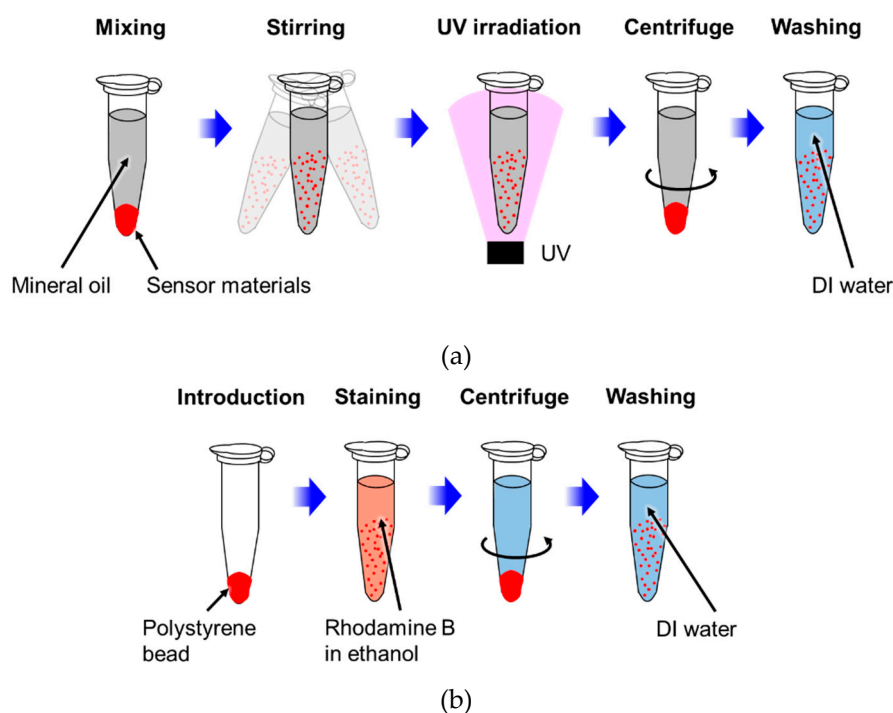


Figure S1. Fabrication processes for fluorescence microsensors. (a) Hydrogel fluorescence microsensor; (b) Polystyrene fluorescence microsensor.

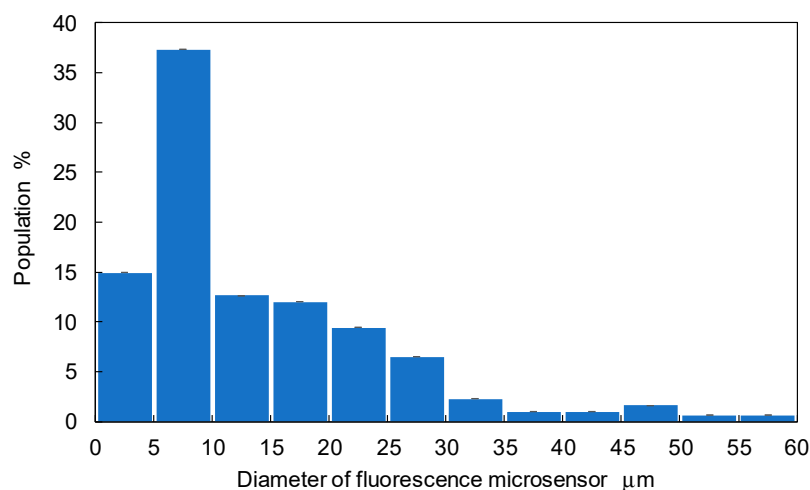


Figure S2. Diameter distribution of the hydrogel fluorescence microsensors (9% PEGDA575).

2. Temperature Measurement Using Hydrogel Fluorescence Microsensors

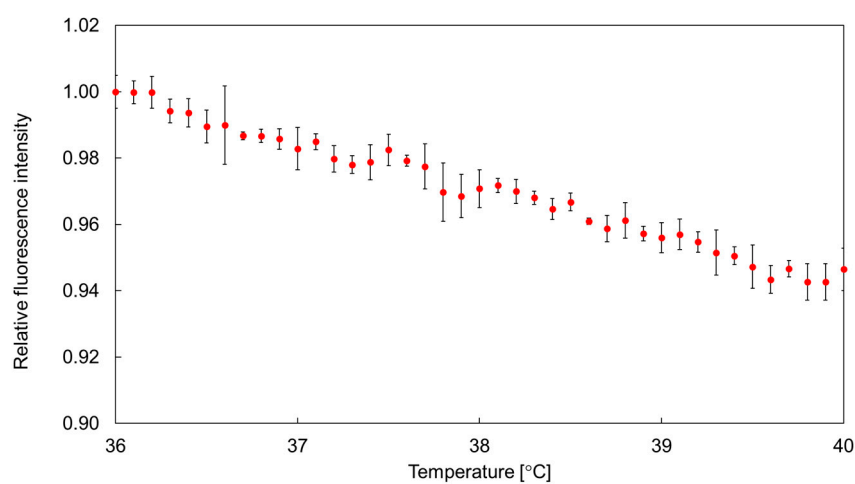
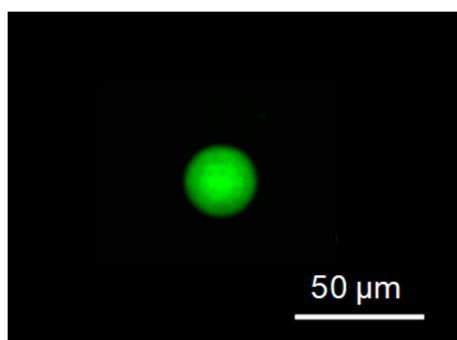
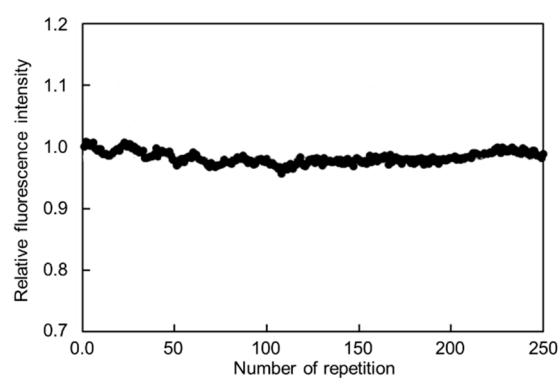


Figure S3. Calibration of the relative fluorescence intensity with temperature.

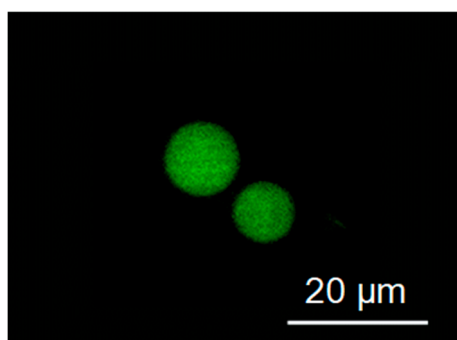
3. Evaluation of Photobleaching Compensation Using Fluorescent Dyes Other than Rhodamine B



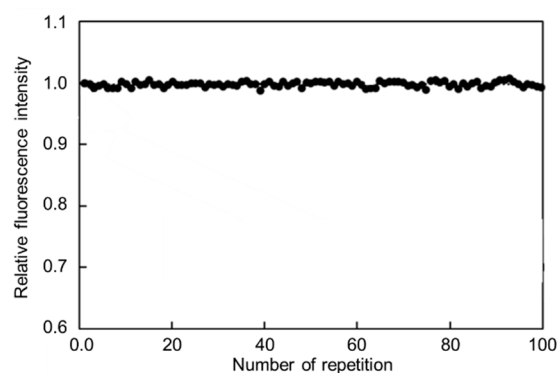
(a)



(b)



(c)



(d)

Figure S4. Photobleaching compensation of hydrogel fluorescence microsensors containing FITC and $(\text{Ru}(\text{bpy})_2\text{Cl}_2)$. (a) Fluorescence image of hydrogel fluorescence microsensor containing FITC; (b) Photobleaching compensation of hydrogel fluorescence microsensor containing FITC; (c) Fluorescence image of hydrogel fluorescence microsensor containing $(\text{Ru}(\text{bpy})_2\text{Cl}_2)$; (d) Photobleaching compensation of hydrogel fluorescence microsensor containing $(\text{Ru}(\text{bpy})_2\text{Cl}_2)$.



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