

## SUPPORTING INFORMATION

### Glutathione disulfide-sensitive Janus nanomachine controlled by an enzymatic AND logic gate for smart delivery

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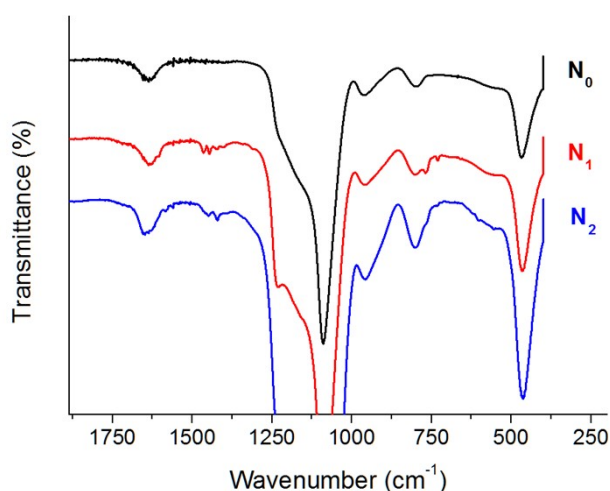
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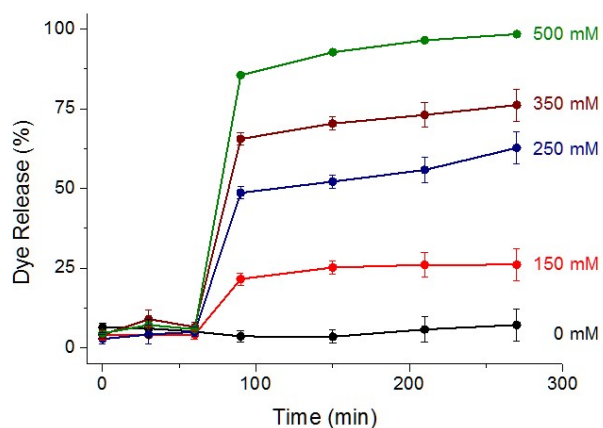
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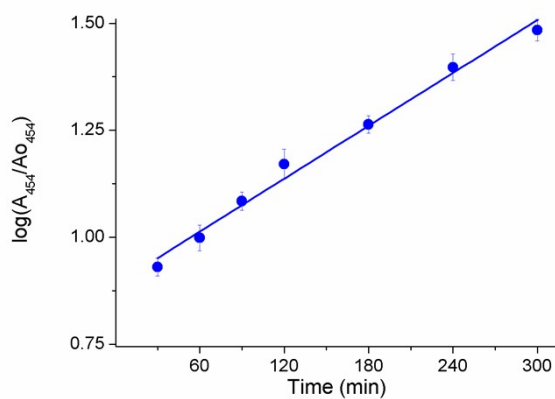
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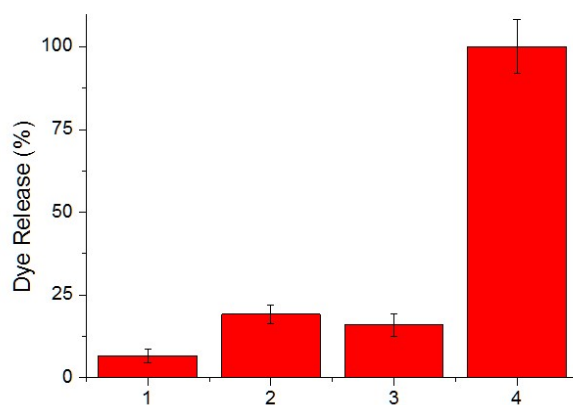
**Figure 1S.** FT-IR analysis for the nanoparticles N<sub>0</sub> - N<sub>2</sub>.



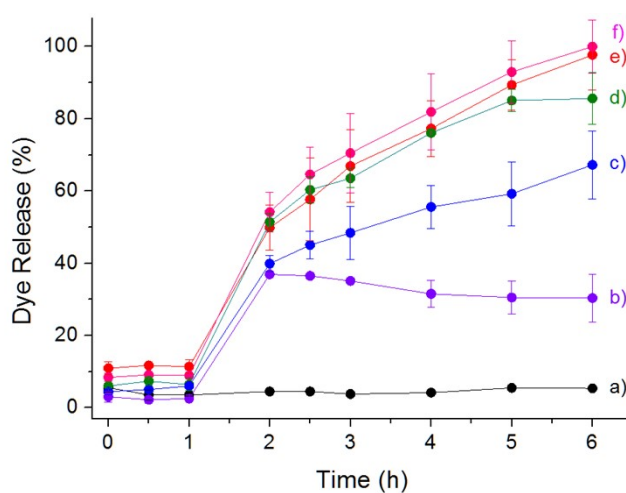
**Figure 2S.** Kinetics of dye release from the nanomachine N<sub>3</sub> in 100 mM sodium phosphate buffer, pH 7.0, in the absence (●) and the presence of glutathione at 150 mM (●), 250 mM (●), 350 mM (●) and 500 mM (●). 100% represents maximum dye release.



**Figure 3S.** Kinetics of dye release from the nanomachine N<sub>3</sub> in 50 mM NADPH, 100 mM sodium phosphate buffer, pH 7.0, after addition of GSSG at 75 mM final concentration.  $A_{454}$ : absorbance at 454 nm over time,  $A_{0_{454}}$ : absorbance at 454 nm before addition of GSSG.



**Figure 4S.** Relative dye release from the nanomachine  $N_3$  after 1 h incubation in 100 mM sodium phosphate buffer, pH 7.0, in the absence (1) and the presence of 75 mM GSSG (2), 50 mM NADPH (3) and 50 mM NADPH + 75 mM GSSG (4). 100% represents maximum dye release.



**Figure 5S.** Kinetics of dye release from the nanomachine  $N_3$  in 50 mM NADPH, 100 mM sodium phosphate buffer, in the absence (a, pH 7.0) and the presence of glutathione at 75 mM at pH 8.0 (b), 7.0 (c), 6.0 (d), 5.0 (e) and 4.0 (f). 100% represents maximum dye release.