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Title: A low-cost water quality monitoring prototype device with embedded chromogenic reagent capsules and dynamic colorimetric detection

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1 The highlights are:

2 (i) Capsules filled with chromogenic reagent and multiple sample reservoirs, to
3 replace commonly used complex water sample and chromogenic reagent delivery
4 systems using pumps and valves;

5 (ii) A prototype device that can automatically open the reservoirs and the capsules;

6 (iii) A colorimetric sensor that can continuously record the color data during the
7 chromogenic reaction;

8 (iv) An analysis method for dynamic colorimetric sensing that can partly avoid the
9 errors.

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