

Supplementary Information

A Low-Cost Video-Based Reflectometer for Selective Detection of Cu^{2+} Using Paper-Based Colorimetric Sensors

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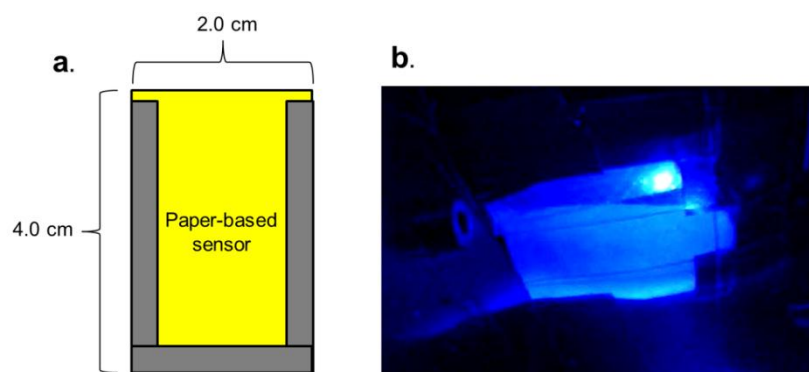


Figure S1. (a) Illustration of sample hold, and (b) real sample hold being irradiated with a blue LED inside the reflectometer device.

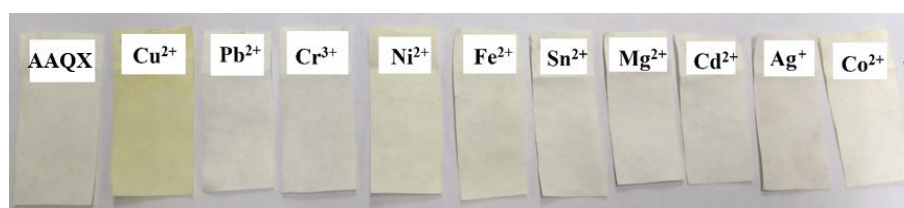
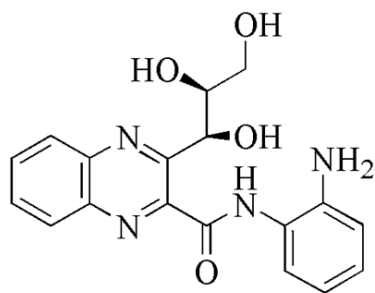


Figure S2. Paper strips containing adsorbed AAQX before and after immersion in aqueous solution containing $2.00 \times 10^{-2} \text{ mol L}^{-1}$ of Pb^{2+} , Cr^{3+} , Ni^{2+} , Fe^{2+} , Sn^{2+} , Mg^{2+} , Cd^{2+} , Ag^{+} , Co^{2+} and Cu^{2+} .

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AAQX

Figure S3. Chemical structure of quinoxaline derivative AAQX.

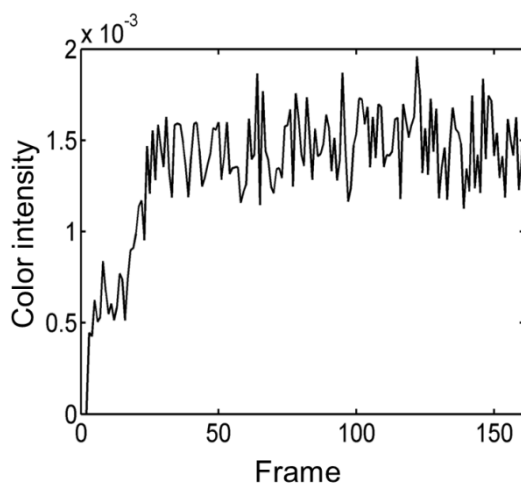


Figure S4. Noise of reflectometer device as gray color intensity.

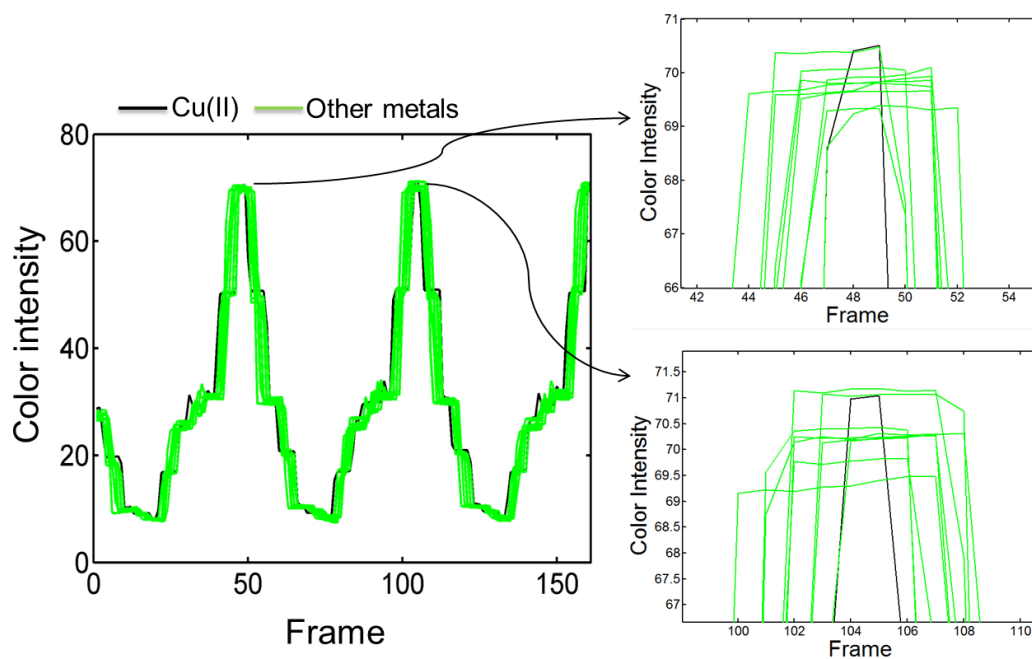


Figure S5. Video-based reflectance signal acquired for different metal ions (green: Pb^{2+} , Cr^{3+} , Ni^{2+} , Fe^{2+} , Sn^{2+} , Mg^{2+} , Cd^{2+} , Ag^+ and Co^{2+} ; black: Cu^{2+}). The inset plots show the most intense peak signals zoomed.