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Authors: P. Madhusudhana Reddy, Shih-Rong Hsieh, Chi-Jung Chang, Jing-Yuan Kang

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Detection of cyanide ions in aqueous solutions using cost effective colorimetric sensor

P. Madhusudhana Reddy [1,†], Shih-Rong Hsieh [2,†], Chi-Jung Chang [1,*], Jing-Yuan Kang [1]

[1] Department of Chemical Engineering, Feng Chia University, 100, Wenhwa Road, Seatwen, Taichung 40724, Taiwan, ROC.

[2] Department of Surgery, Taichung Veterans General Hospital, 1650 Taiwan Boulevard Section 4, Taichung 40705, Taiwan, ROC.

* Correspondence: changcj@fcu.edu.tw;

† These authors contributed equally to this work.

Highlights

1. Colorimetric responses of S1 to anions in DMSO, DMSO-water and water were visible to the naked eye.
2. Detection of CN^- by S1 was monitored by means of UV-vis, fluorescence, and test stripes techniques.
3. The chlorine and benzoyl group can amplify the sensing performance of anthraquinone based sensors.
4. Simple, rapid, and cost effective paper "test stripes" of S1 can monitor the CN^- in 100% water.
5. The S1 has an excellent sensitivity with the detection limits under micro molar concentrations.

Graphical abstract