Electronic Supplementary Material (ESI) for RSC Advances. This journal is © The Royal Society of Chemistry 2016

Electronic Supplementary Information (ESI)

## Formation of nanoneedle Cu(0)/CuS nanohybrid thin film by the disproportionation of a

## copper(I) complex at oil-water interface and its application for dye degradation

## S. Jafar Hoseini\* and Roghayeh Hashemi Fath

Department of Chemistry, Faculty of Sciences, Yasouj University, Yasouj 7591874831, Iran



Fig. S1 Structure of the dye molecules (a) BG, (b) MO, (c) MG, (d) MR and (e) MB.

<sup>\*</sup> Corresponding author: E-mail: jhosseini@ yu.ac.ir, sjhoseini54@yahoo.com, Fax: +98 74 33342172; Tel: +98 74 33223048.



**Fig. S2** Degradation of MG dye (a) plot of absorbance (A) *vs* wavelength and the inset image indicates the decolorisation reaction in the absence of  $H_2O_2$ , (b) plot of absorbance (A) *vs* wavelength and the inset image indicates the decolorisation reaction in the presence of  $H_2O_2$ , (c) plot of absorbance (A) *vs* time (t) in the absence of  $H_2O_2$  and (d) plot of absorbance (A) *vs* time (t) in the presence of  $H_2O_2$ .



**Fig. S3** Degradation of BG dye (a) plot of absorbance (A) *vs* wavelength and the inset image indicates the decolorisation reaction in the absence of  $H_2O_2$ , (b) plot of absorbance (A) *vs* wavelength and the inset image indicates the decolorisation reaction in the presence of  $H_2O_2$  and (c) plot of absorbance (A) *vs* time (t) in the presence of  $H_2O_2$ .



**Fig. S4** Degradation of MR dye (a) plot of absorbance (A) *vs* wavelength and the inset image indicates the decolorisation reaction in the absence of  $H_2O_2$ , (b) plot of absorbance (A) *vs* wavelength and the inset image indicates the decolorisation reaction in the presence of  $H_2O_2$  and (c) plot of absorbance (A) *vs* time (t) in the presence of  $H_2O_2$ .



Fig. S5 Degradation of MO dye (a) plot of absorbance (A) vs wavelength and the inset image indicates the decolorisation reaction in the absence of  $H_2O_2$  and (b) plot of absorbance (A) vs wavelength and the inset image indicates the decolorisation reaction in the presence of  $H_2O_2$ .