

Supporting information

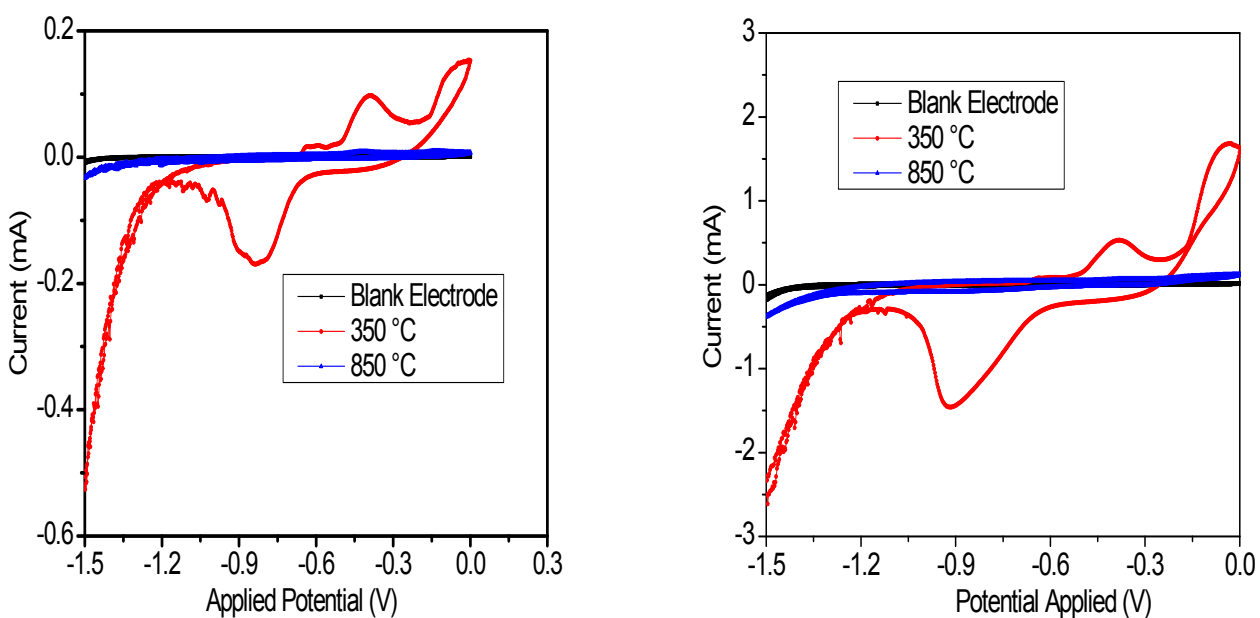


Figure S1: HER of Cu₂O (a) on glassy carbon (b) Platinum as electrode

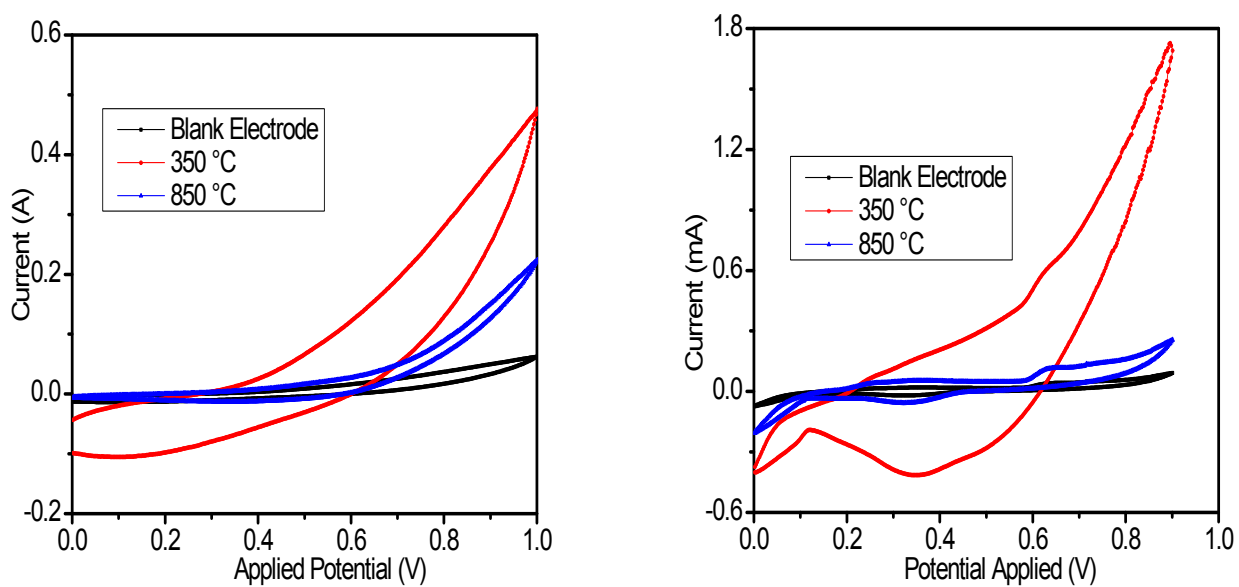
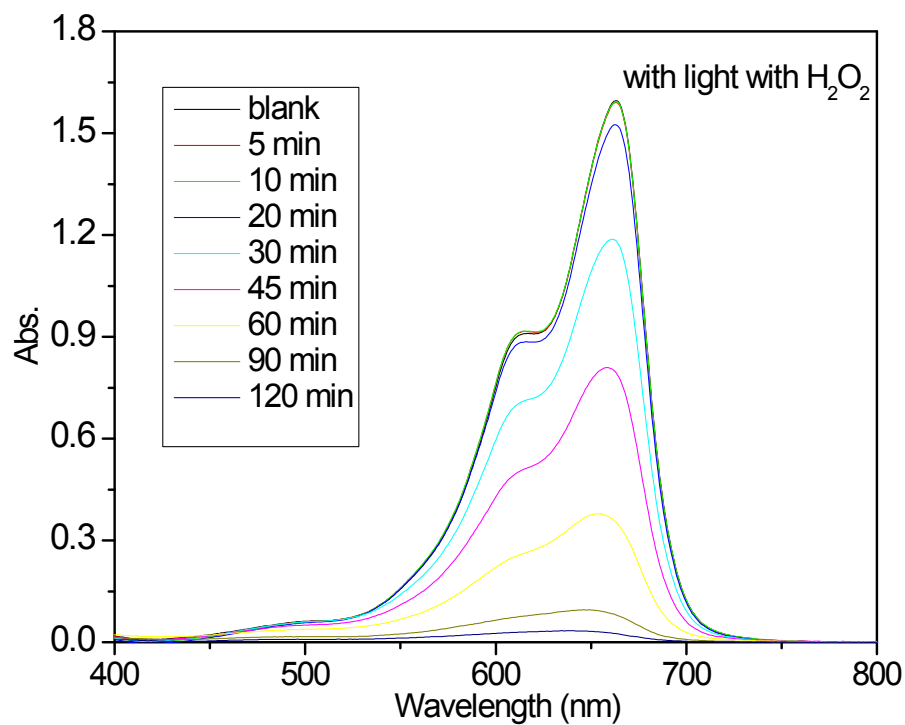
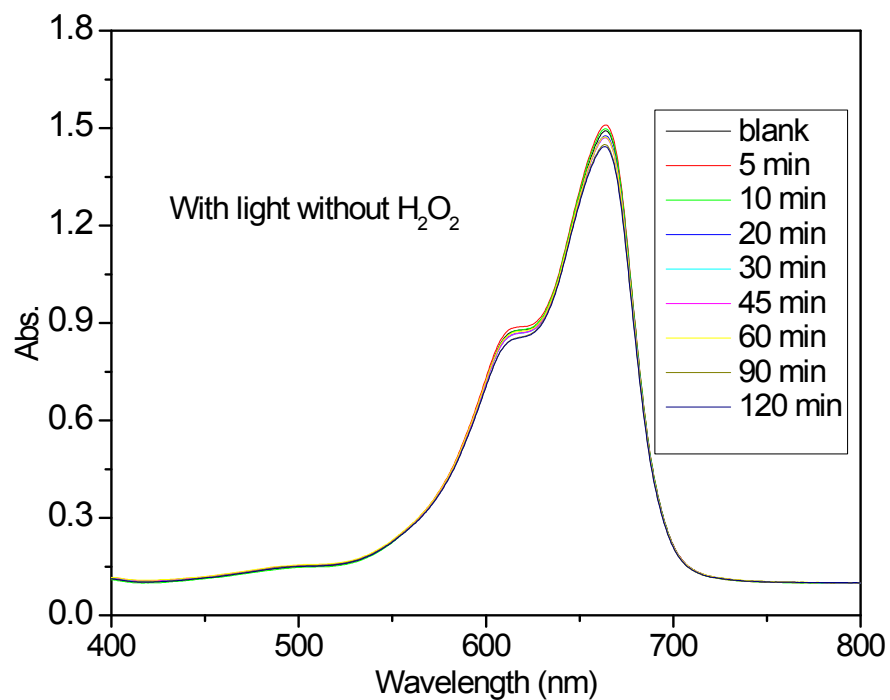


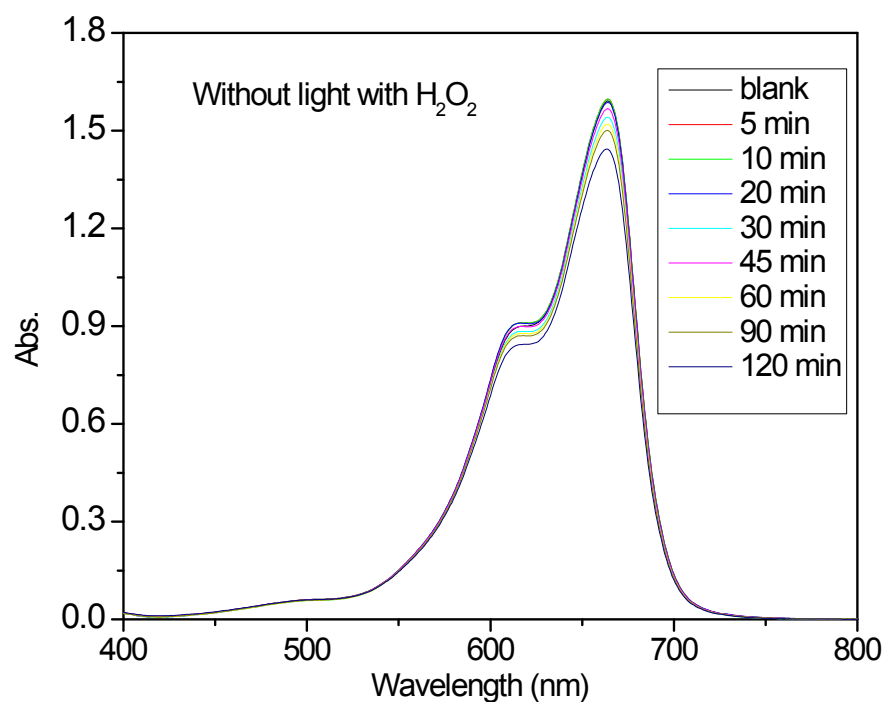
Figure S2: OER of Cu₂O (a) on glassy carbon (b) Platinum as electrode



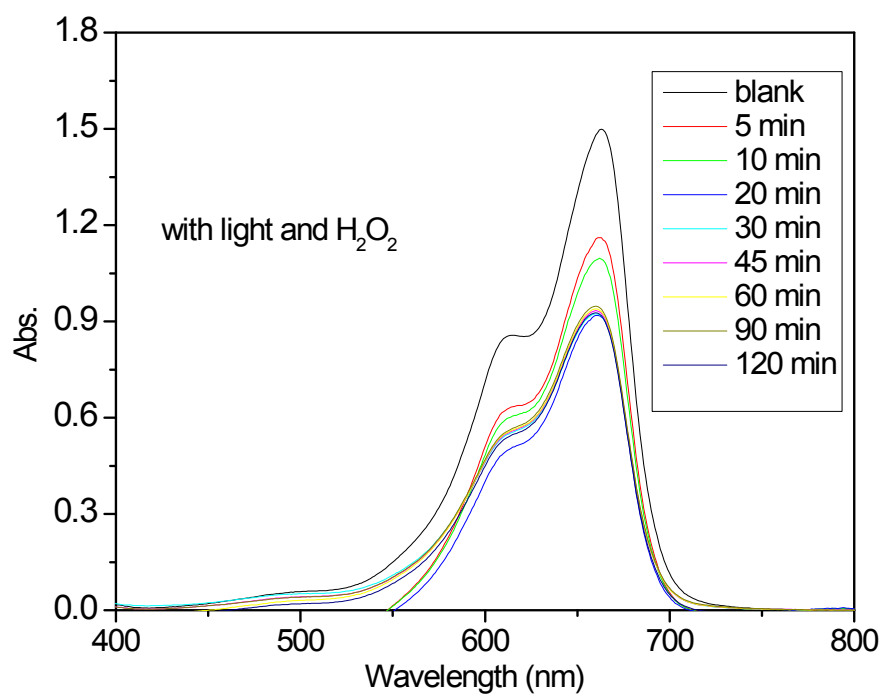
**Figure S3: Photodegradation of Methylene blue with Cu_2O synthesized at 850°C
(with light and with H_2O_2)**



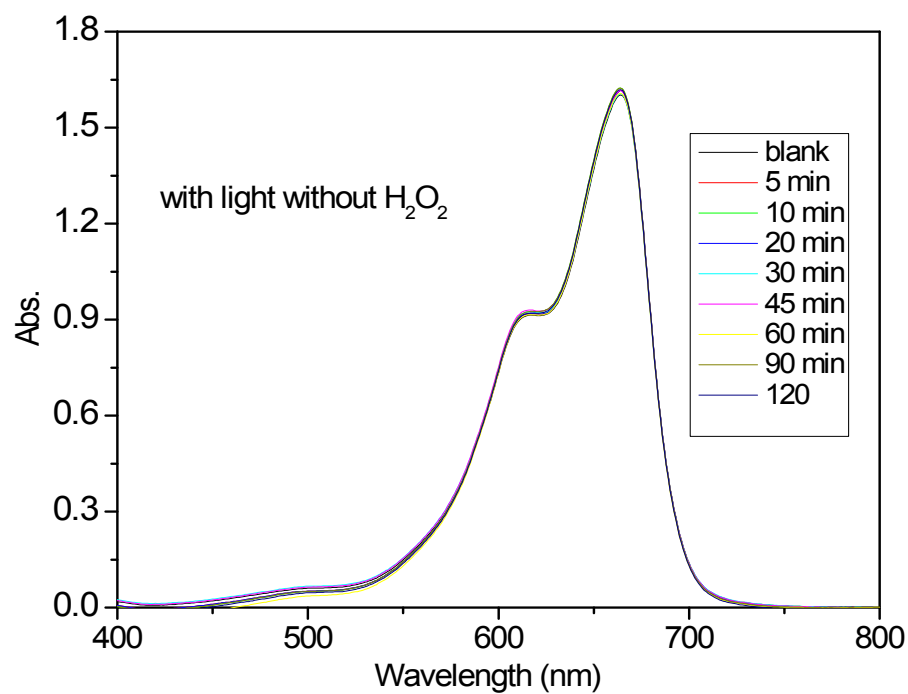
**Figure S4: Photodegradation of Methylene blue with Cu_2O synthesized at 850°C
(with light and without H_2O_2)**



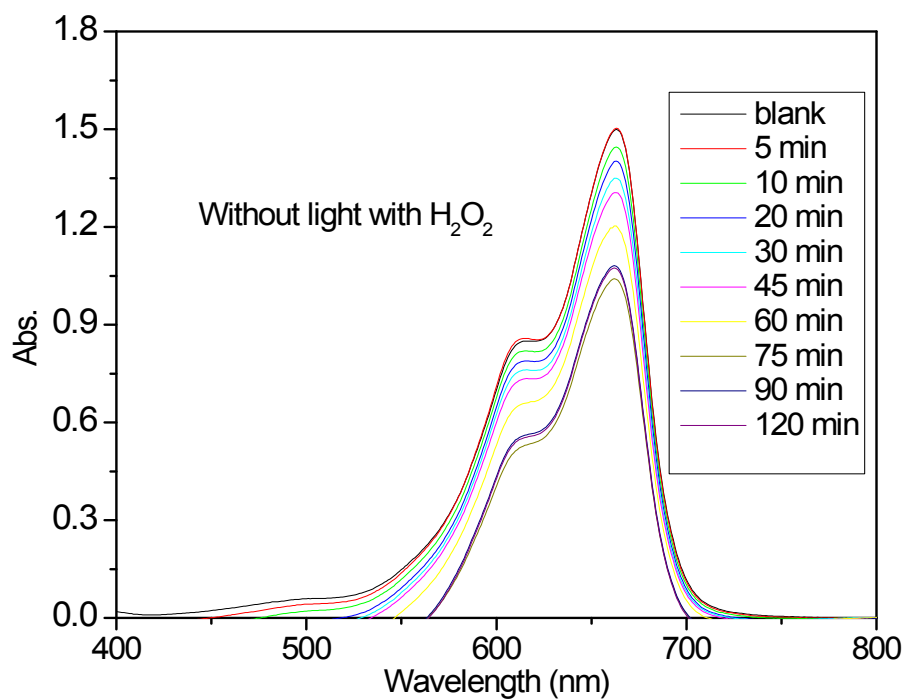
**Figure S5: Photodegradation of Methylene blue with Cu_2O synthesized at 850°C
(without light and with H_2O_2)**



**Figure S6: Photodegradation of Methylene blue with Cu_2O synthesized at 350°C
(with light and with H_2O_2)**



**Figure S7: Photodegradation of Methylene blue with Cu_2O synthesized at $350\text{ }^\circ\text{C}$
(with light and without H_2O_2)**



**Figure S8: Photodegradation of Methylene blue with Cu_2O synthesized at $850\text{ }^\circ\text{C}$
(without light and with H_2O_2)**

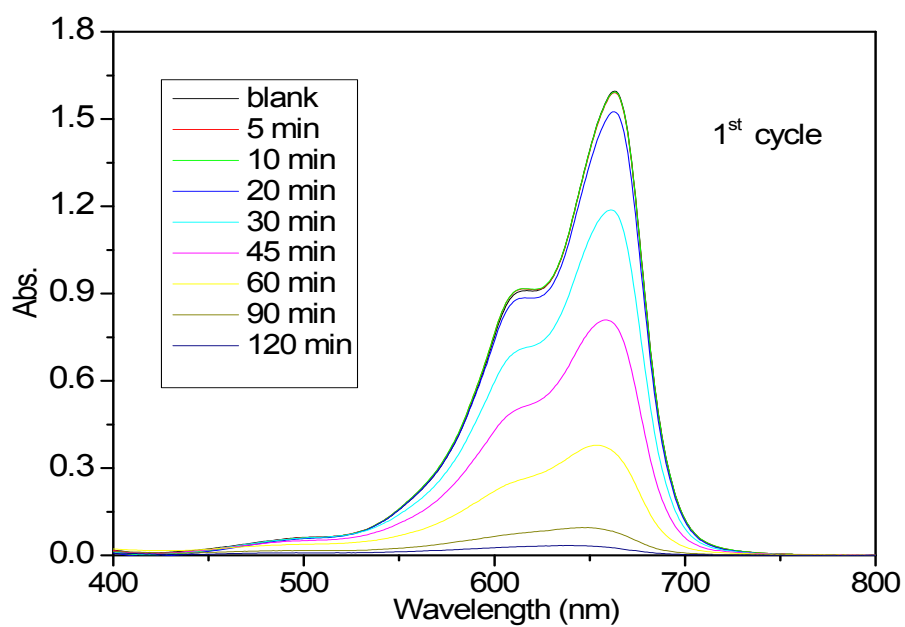


Figure S9: Photodegradation of Methylene blue with Cu_2O synthesized at $850\text{ }^\circ\text{C}$
(with light and with H_2O_2) cycle 1

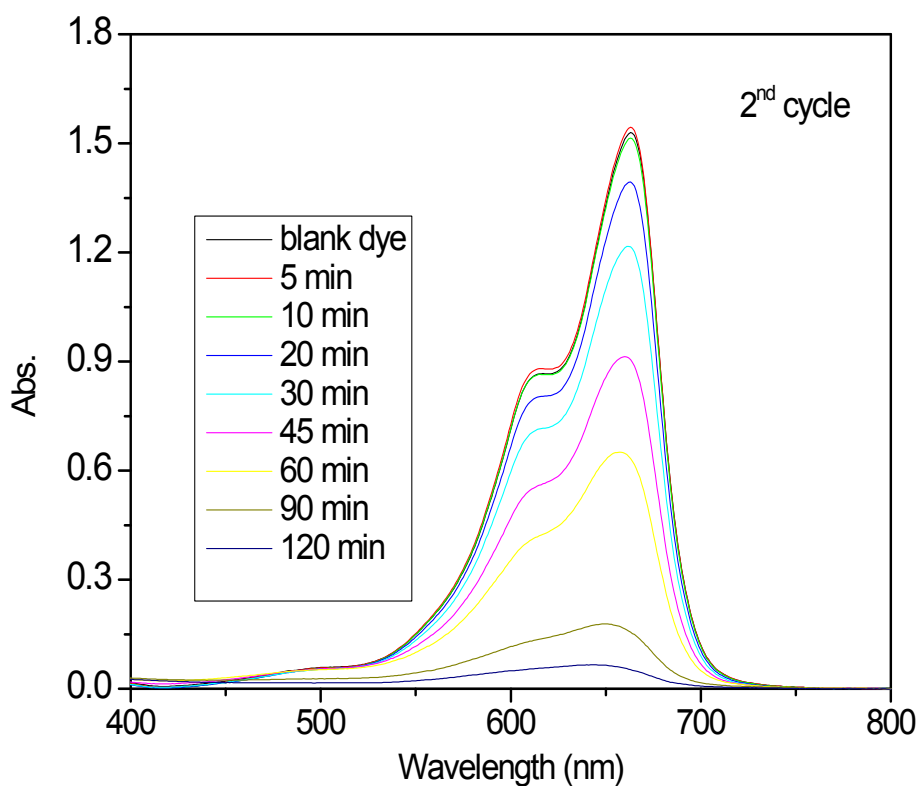


Figure S10: Photodegradation of Methylene blue with Cu_2O synthesized at $850\text{ }^\circ\text{C}$
(with light and with H_2O_2) cycle 2

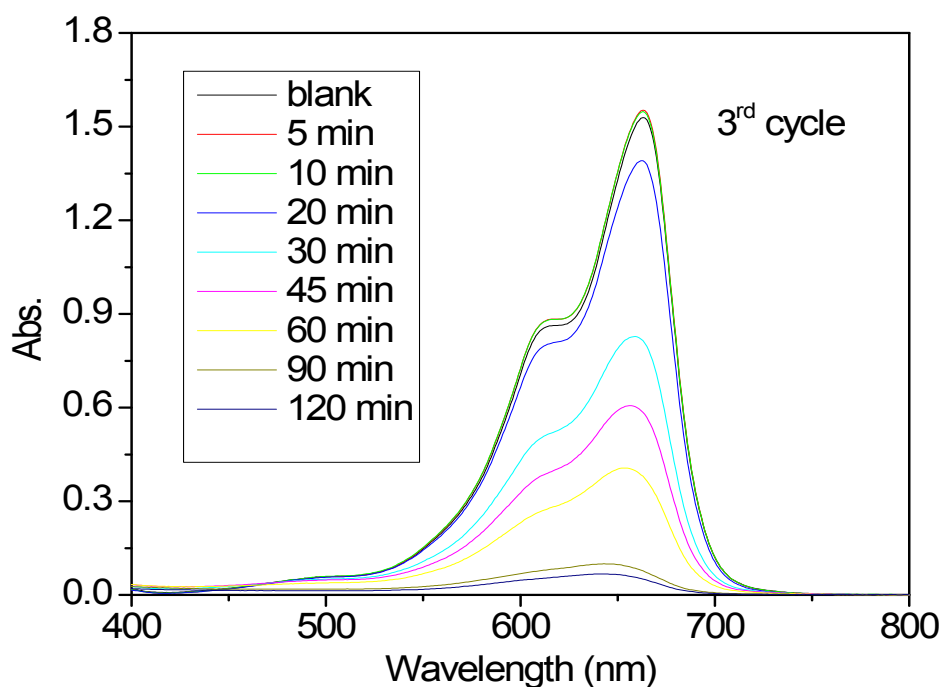


Figure S11: Photodegradation of Methylene blue with Cu_2O synthesized at 850°C

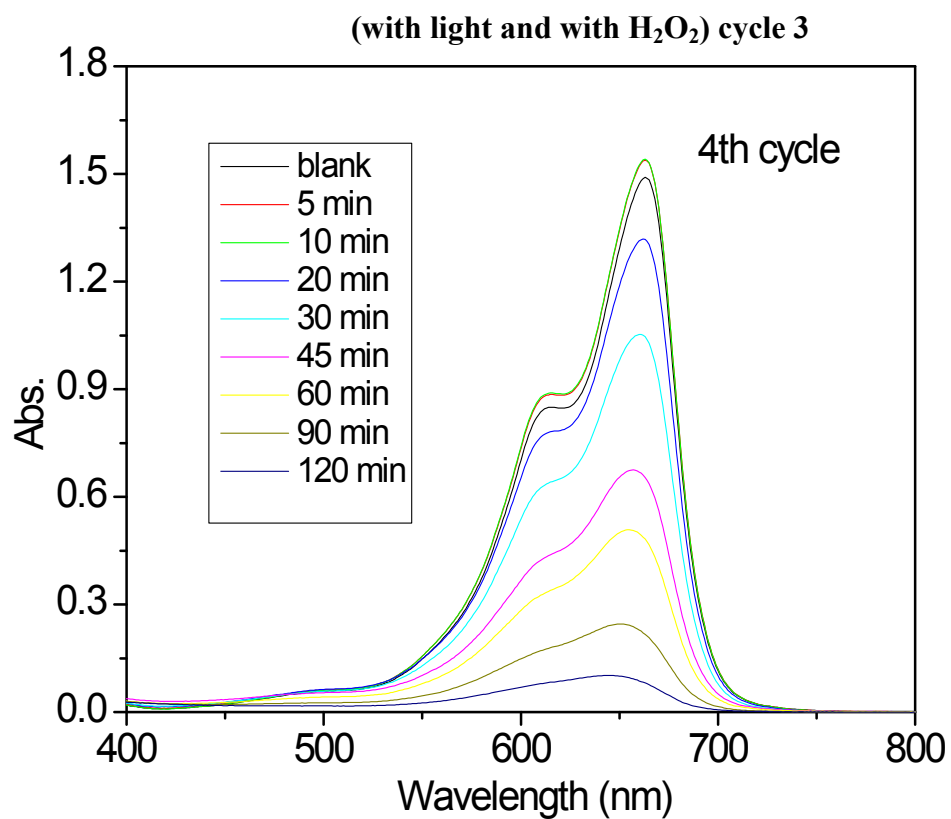


Figure S12: Photodegradation of Methylene blue with Cu_2O synthesized at 850°C

(with light and with H_2O_2) cycle 4

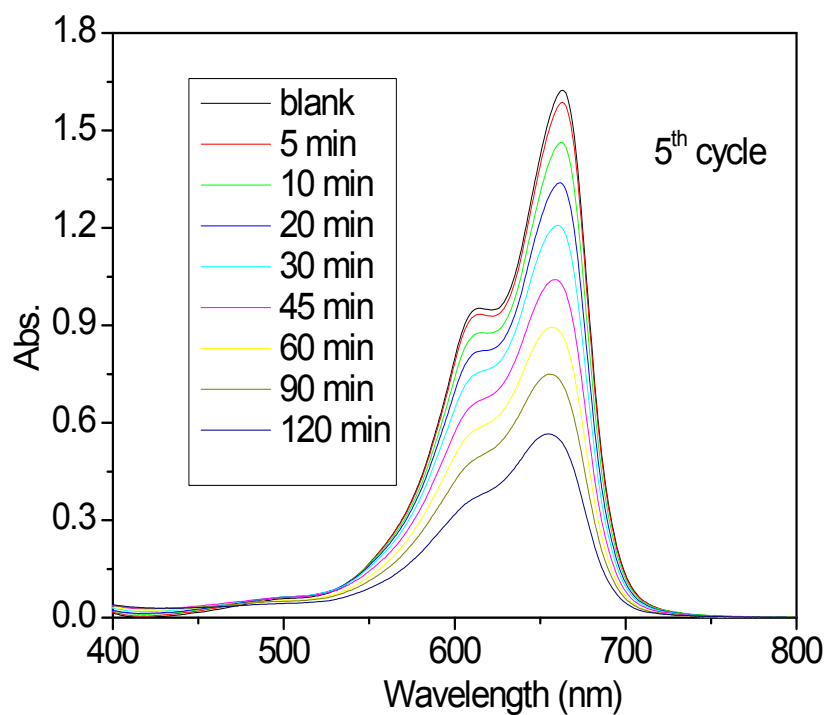


Figure S13: Photodegradation of Methylene blue with Cu_2O synthesized at 850°C (with light and with H_2O_2) cycle 5

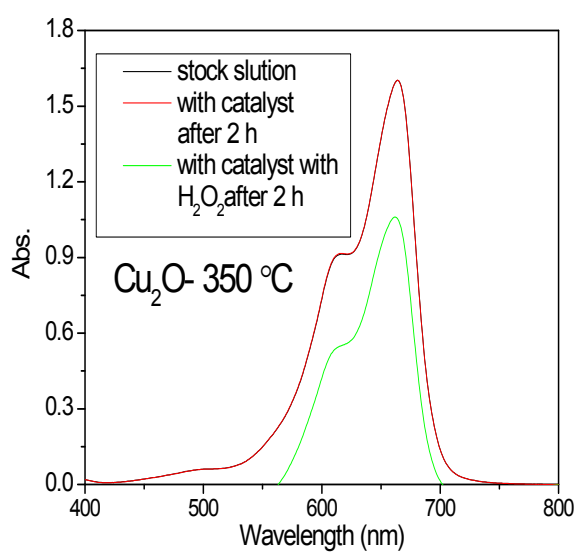
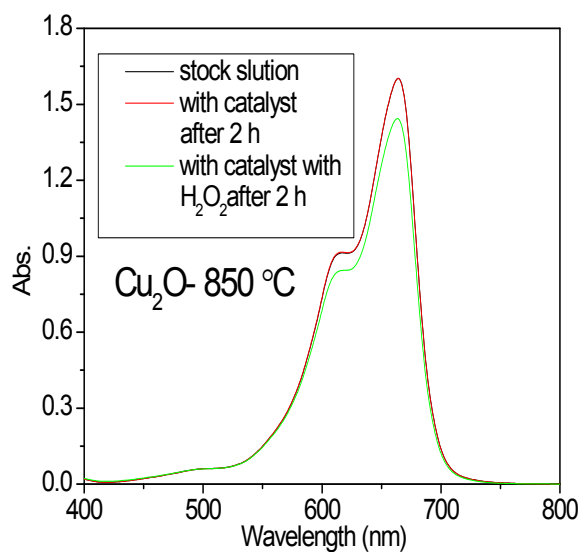


Figure S14: Adsorption of Methylene blue with Cu_2O