Supporting Information

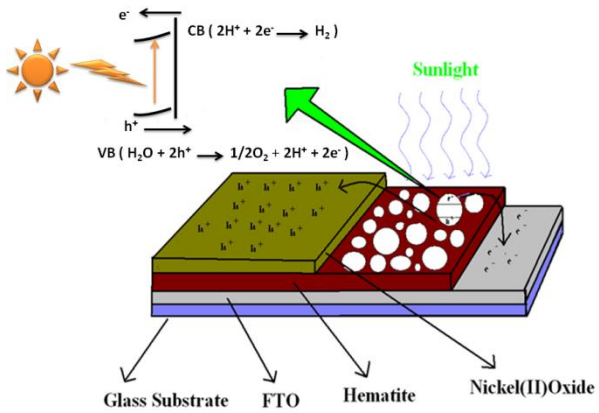

Fig.S1 Scheme showing the fabrication of PN junction device composed of hematite and NiO.

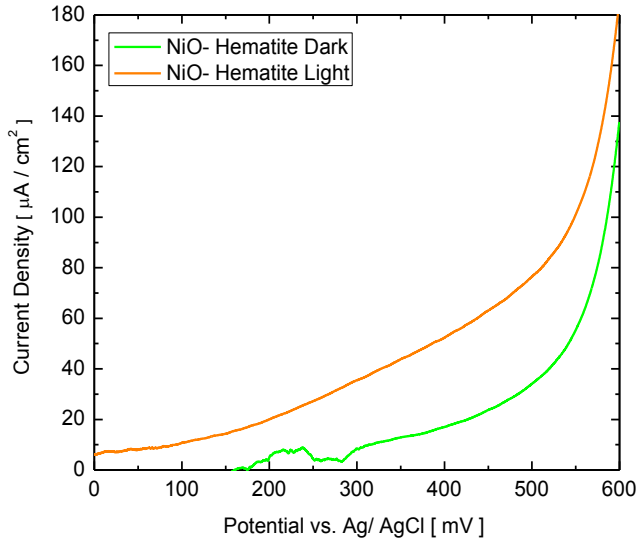

Fig. S2 Current density of PN junction photoanode measured in a 3 electrode configuration with AM 1.5 simulated light sources. The photocurrent density was quite low in comparison to a similar system studied recently [31].Very low value of current density might be attributed to the synthetic process which fully covered up the photoactive hematite layer allowing only the formation of electron hole pair by short wavelength light. This system was not studied extensively because of poor functionality of the electrode.

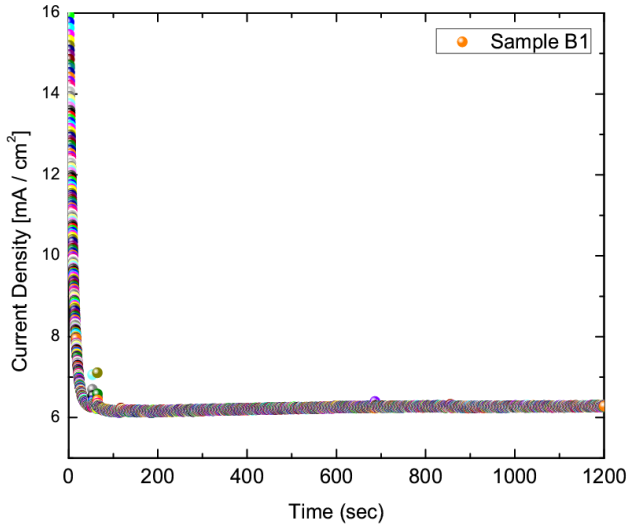

Fig. S3 Long term chronoamperometric study of sample B1.