

## Supplementary Materials

# Recycling Rusty Iron with Natural Zeolite Heulandite to Create a Unique Nanocatalyst for Green Hydrogen Production

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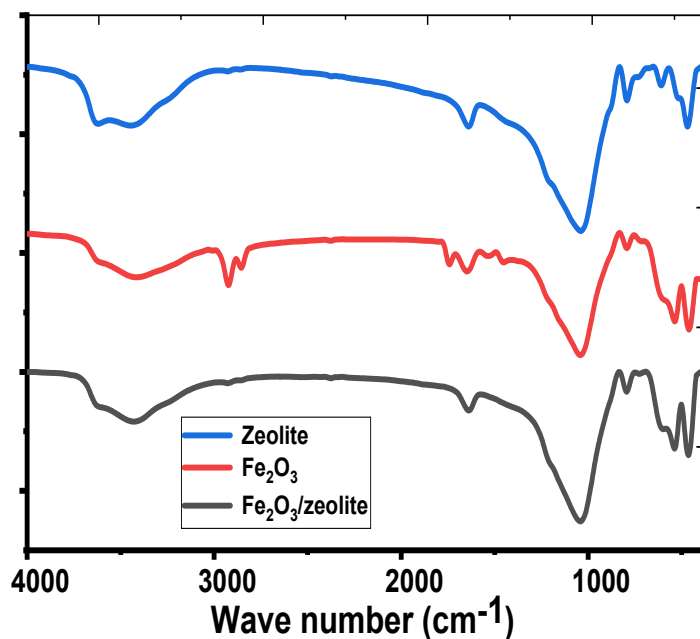
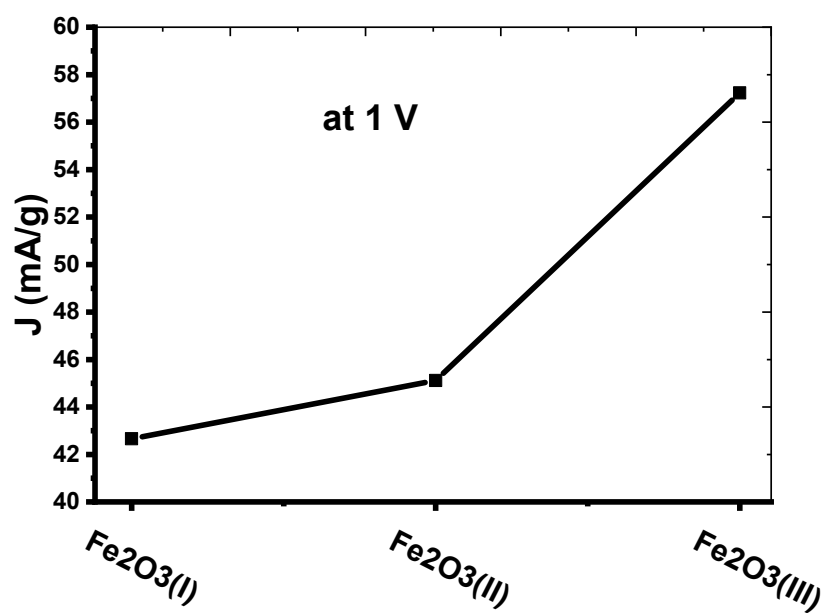
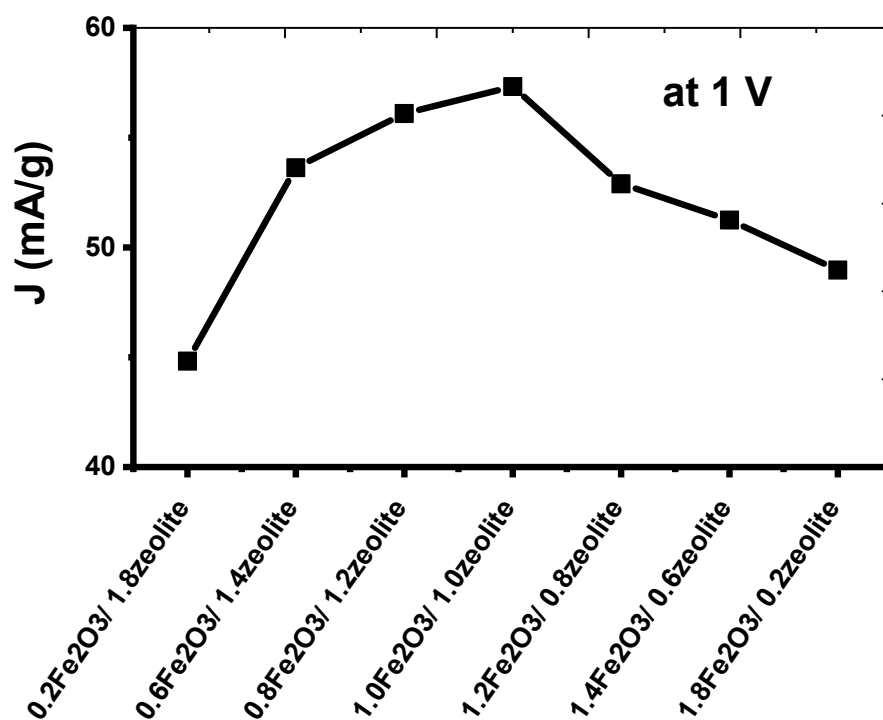


Figure S1. FT-IR spectra of Fe<sub>2</sub>O<sub>3</sub>, zeolite, and Fe<sub>2</sub>O<sub>3</sub>/zeolite nanocomposite.



**Figure S2.** Variation of current density (J) for Fe<sub>2</sub>O<sub>3</sub> (I), (II), and (III) under white light illumination and at 1 V



**Figure S3.** Variation of current density (J) for Fe<sub>2</sub>O<sub>3</sub> (III)/zeolite photoelectrodes with different Fe<sub>2</sub>O<sub>3</sub> (III)/zeolite weight ratios at 1 V under white light illumination