Bimetallic nanozyme of Cu-Mn organophyllosilicate with enhanced multi-enzyme mimetic activity for simultaneous degradation of hydroquinone and methylene blue

Rui Lv¹, Beibei He², Shiyong Sun^{2*}, Ke Wang², Sen Lin², Elena Leonidovna Kotova³,

Jin Liu², Haoming Tang²

1 School of Chemistry and Chemical Engineering, Mianyang Teachers' College,

Mianyang, Sichuan, 621000, China

2 School of Environment and Resource, Key Laboratory of Solid Waste Treatment

and Resource Recycle of Ministry of Education, Southwest University of Science and

Technology, Mianyang, Sichuan, 621010, China

3 Saint-Petersburg Mining University, 21st Line, St. Petersburg, 199106, Russia

*Corresponding Author: shysun@swust.edu.cn

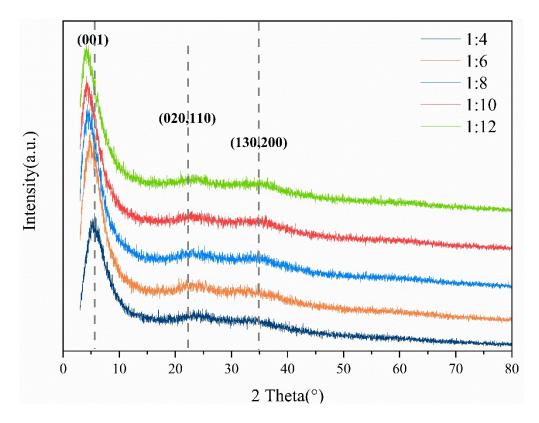


Figure S1. The XRD patterns of different ratio of amino and carboxyl group

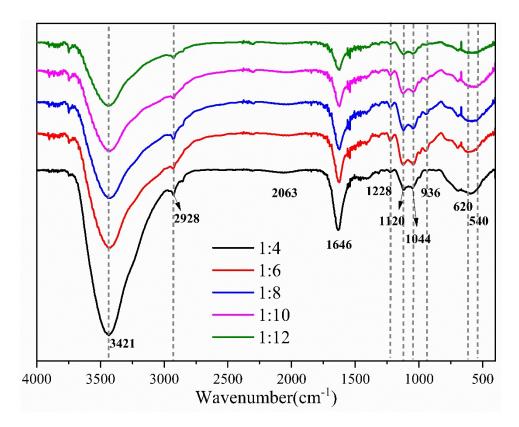


Figure S2. The FTIR spectra of different ratio of amino and carboxyl group

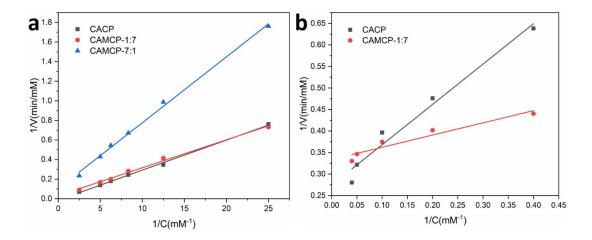


Figure S3. Linewear-Burk curve for determination the kinetic constants. Different

Mn/Cu molar ratio of CAMCP for (a) TMB and (b) H₂O₂ substrate;

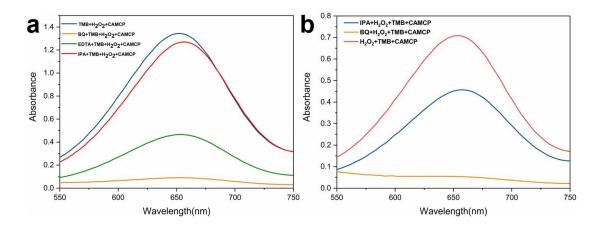


Figure S4. ROS produced in the enzyme-like reactions. a: OXD-like reaction; b:

POD-like reaction

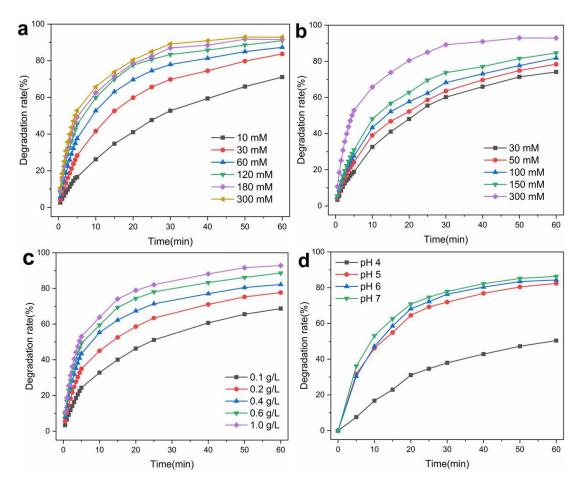


Figure S5. The effect of different factors for the decolorization of MB. a:

concentration of H_2O_2 ; b: concentration of HQ; c: concentration of CAMCP; d: pH.