1 **Cu-Based Metal-Organic Framework Synthesized via Green Method Exhibits Unique**

2 **Catecholase-Like Activity for Epigallocatechin Gallate Detection in Teas**

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4 Sivasankar Kulandaivel, Yu-Meng Wang, Sung-Fang Chen[*], Chia-Her Lin[*], and Yi-Chun Yeh[*]

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6 Department of Chemistry, National Taiwan Normal University, Taipei 116, Taiwan.
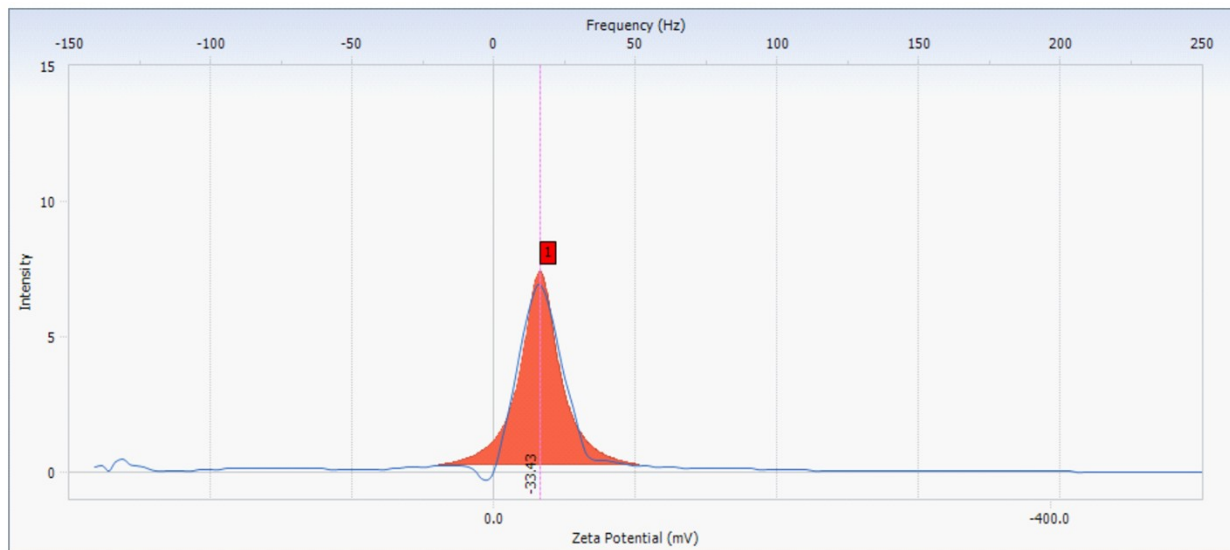
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14 *Corresponding authors: Sung-Fang Chen, Chia-Her Lin and Yi-Chun Yeh

15 E-mail: sfchen@ntnu.edu.tw; chiaher@ntnu.edu.tw; yichuny@ntnu.edu.tw.
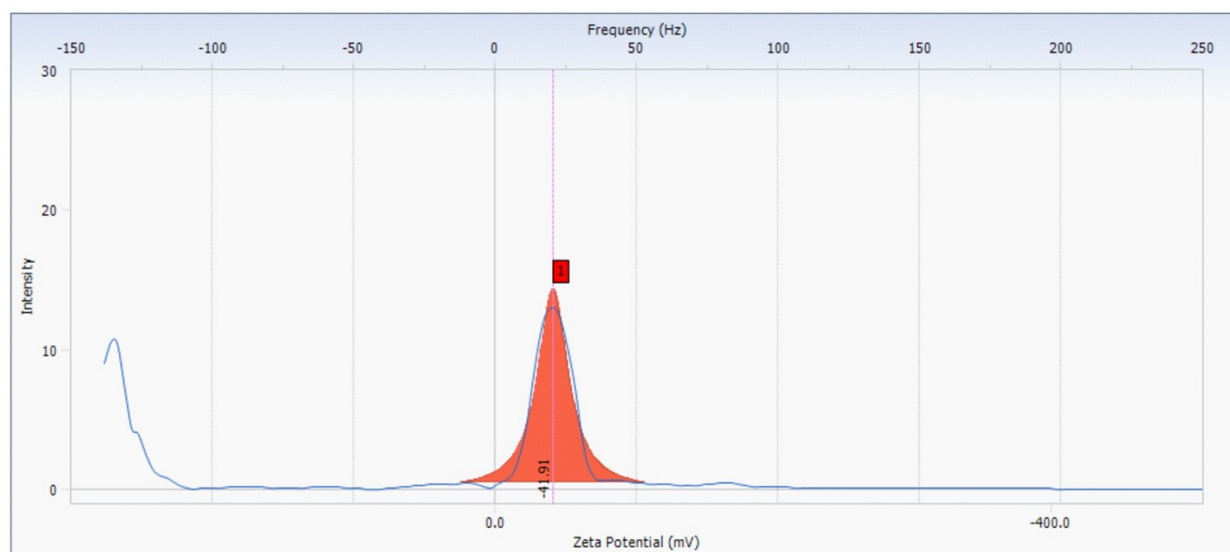
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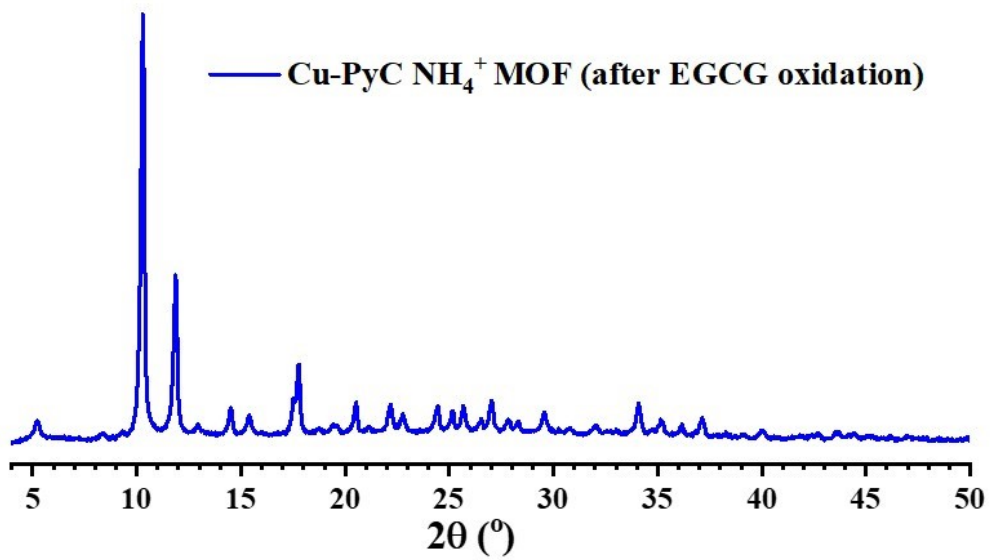**Figure S1.** The zeta potential analysis of Cu-PyC NH_4^+ MOF.

Figure S2. The zeta potential analysis of Cu-PyC NH_4^+ MOF after EGCG oxidation.

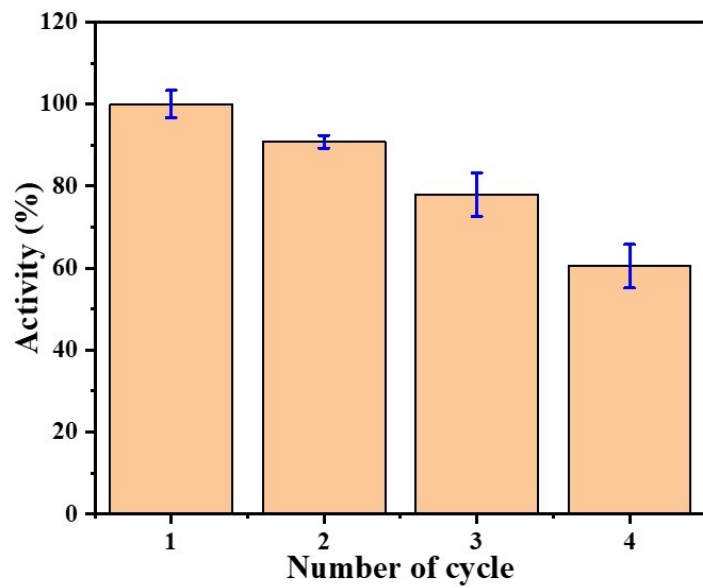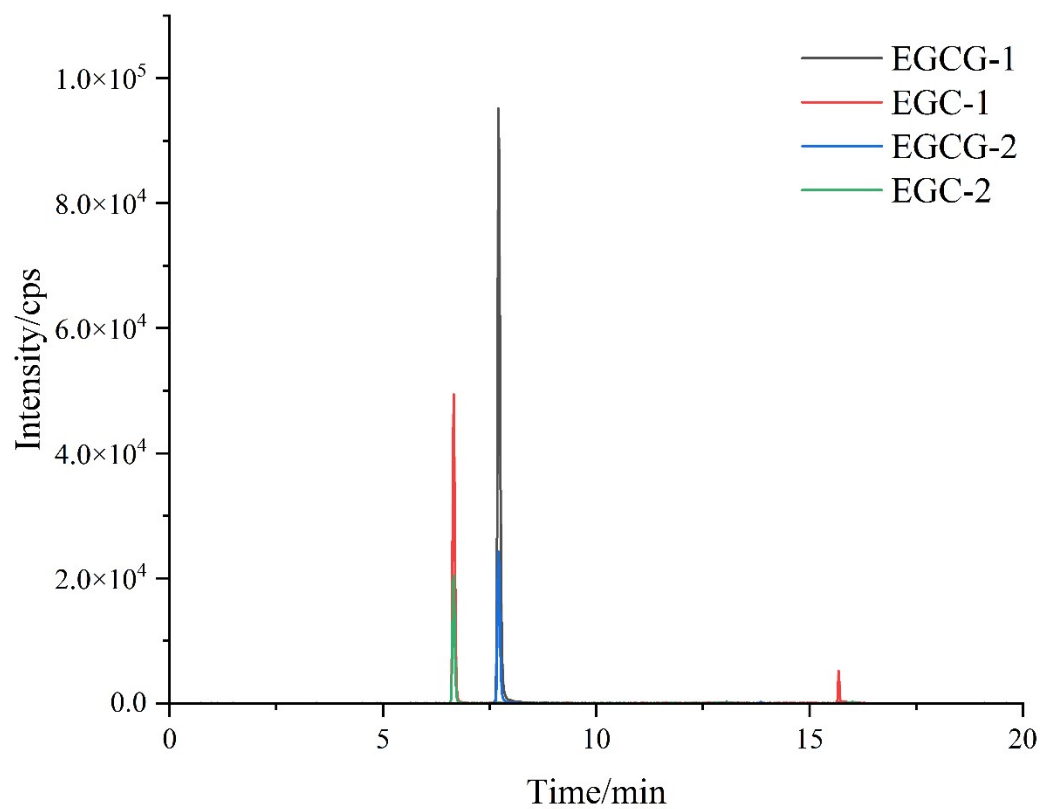Figure S3. PXRD analysis of Cu-PyC NH_4^+ MOF after EGCG oxidation.

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29 **Figure S4.** Cu-PyC NH_4^+ MOF recyclability test for EGCG oxidation.

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31   **Figure S5.** MRM chromatogram of EGCG and EGC.

33 **Table S1**: Comparison of Cu-PyC NH4^{+} MOF nanozyme performance with existing EGCG

34 detection methods.

Sample	Detection method	Linear range	LOD	References
MIL-53(Fe,Al)	Colorimetry	15-80 μM	0.719 μM	(1)
Fe_3C/Fe-N-C	Colorimetry	0.2-1 μM	0.122 μM	(2)
AuNCs/Cu^{2+}/H_2O_2	Fluorescence	10-140 μM	1.2 μM	(3)
STAT protein	Electrochemistry	10-100 μM	19 μM	(4)
Cu-PyC NH_4^+ MOF	Colorimetry	0.5 to 125 μM	0.79 μM	This work

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37 **Table S2**. MS parameter for analytes

Compound	Q1	Q3	Dwell time (msec)	DP	EP	CE	CXP
EGCG_1	457	169	200	-56	-4	-24	-9
EGCG_2	457	125	200	-56	-4	-59	-21
EGC_1	305	125	200	-69	-10	-29	-6
EGC_2	305	179	200	-69	-10	-22	-10

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39 **Table S3**. Calibration curve and quantitative range

Compound	Linear range (ng/mL)	Linear equation	r
EGCG	1- 1000	y= 579x + 565	0.992

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