**Supporting information**

**Modification with ultrasonication for enhanced properties of Cobalt-based zeolitic imidazolate framework**

Sun Shuyanga, Wang Pengchengb, Lu Mingc,\*

*School of Chemical Engineering, Nanjing University of Science and Technology, Nanjing 210094, Jiangsu Province, People’s Republic of China*

a email: sunshuyang11@hotmail.com

b email: alexwpch@njust.edu.cn

c email: luming@mail.njust.edu.cn; Fax: (+86)-025-84315030

\* Corresponding Author

**Table of contents**

1. **Supporting Figures**
2. **Supporting Table**
3. **Supporting figures:**



Scheme S1. Synthesis process of ZIF-67-US and Pd@ZIF-67-US



Figure S1. XRD patterns of ZIF-67-US and ZIF-67 recorded for 2θ = 5–80°.



Figure S2. TG curve of synthesized ZIF-67-US



Figure S3. EDS spectrum of Pd@ZIF-67-US and Pd@ZIF-67-US



Figure S4. Nitrogen adsorption isotherms of synthesized products



Figure S5. Pore Diameter distribution of ZIF-67, ZIF-67-US, Pd@ZIF-67 and US Pd@ZIF-67



Figure S6. Yield comparison between o/m/p-chloronitrobenzene. Reaction conditions: reactant (2 mmol), DMF (20 mL), US treated catalyst (20 mg), HCOOH (500 μL), 60 °C.

Figure S7. Recycling experiment: reactant (2,6-dinitrotoluene, 2 mmol), DMF (20 mL), recycled Pd@ZIF-67-US (20 mg), HCOOH (500 μL), 60 °C, reaction time of 2 h.

Table S1. BET surface areas of synthesis compounds

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 　 | ZIF-67 | ZIF-67-US | Pd@ZIF | US Pd@ZIF |
| BET Surface Area (m²/g): | 1093.02 | 1165.11 | 107.13  | 123.55  |
| t-Plot External Surface Area (m²/g): | 7.55  | 27.43  | 15.15  | 24.75  |
| t-Plot micropore volume (cm³/g): | 0.56  | 0.59  | 0.05  | 0.05  |