

## Supporting Information

### **Janus coordination polymer derived PdO/ZnO nanoribbons for efficient 4-nitrophenol reduction**

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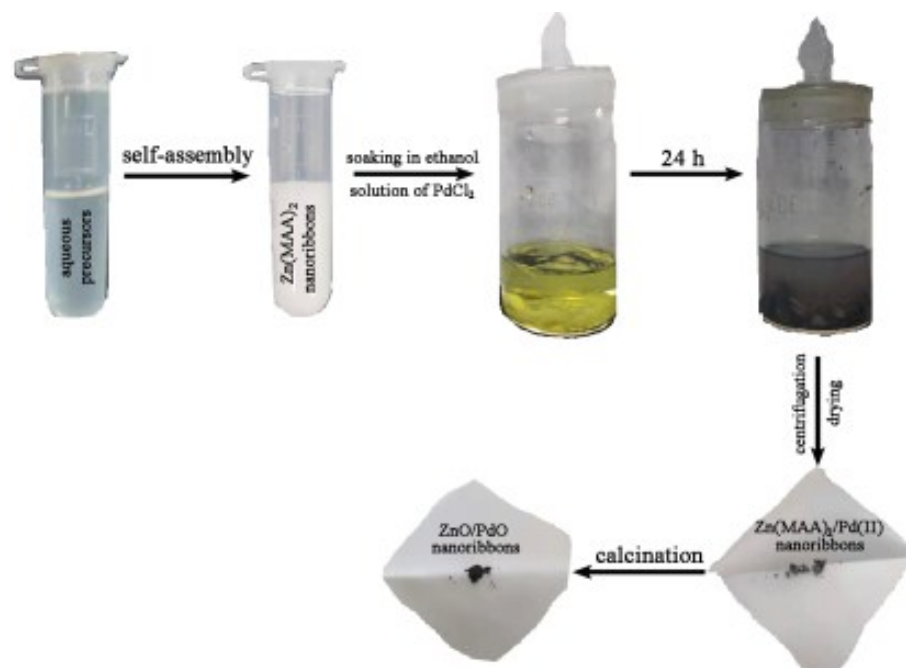
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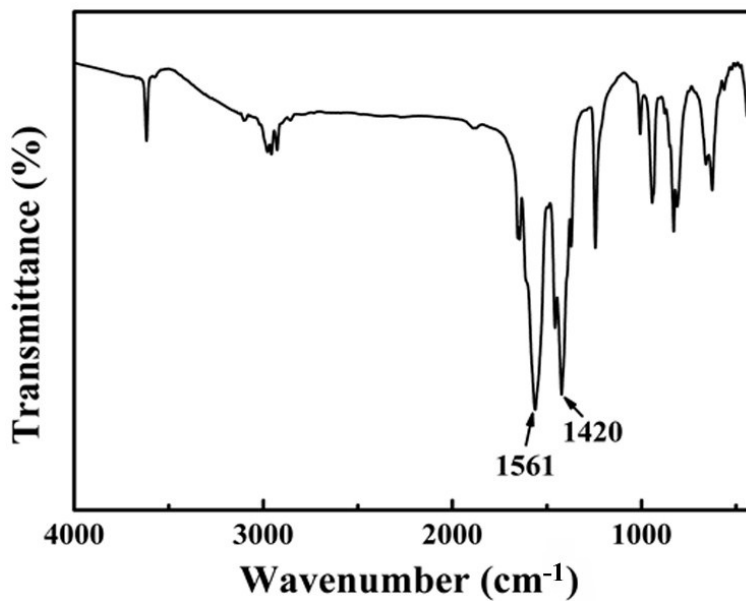
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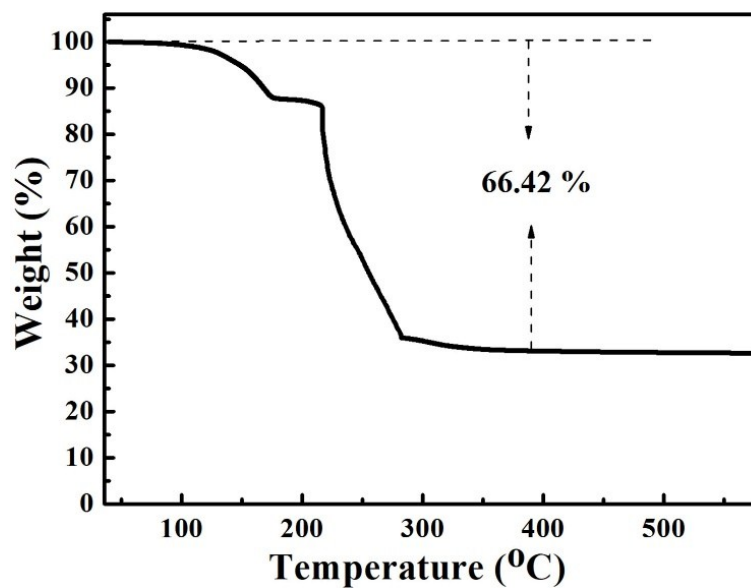


**Figure S1.** digital photos for the color changes during the synthesis process.



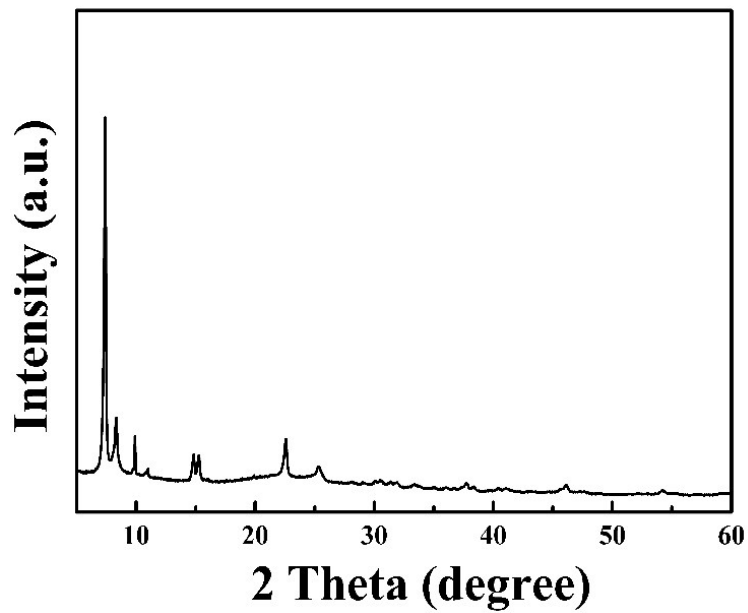
**Figure S2.** FTIR spectra of the Zn (MAA)<sub>2</sub> nanoribbons.

The characteristic asymmetric and symmetric stretching vibrations peaks of carboxylate groups is located at about 1420 cm<sup>-1</sup> and 1546 cm<sup>-1</sup> respectively in the FTIR spectra of the Zn(MAA)<sub>2</sub> nanoribbons, manifesting the successful coordination of Zn<sup>2+</sup> and MAA.

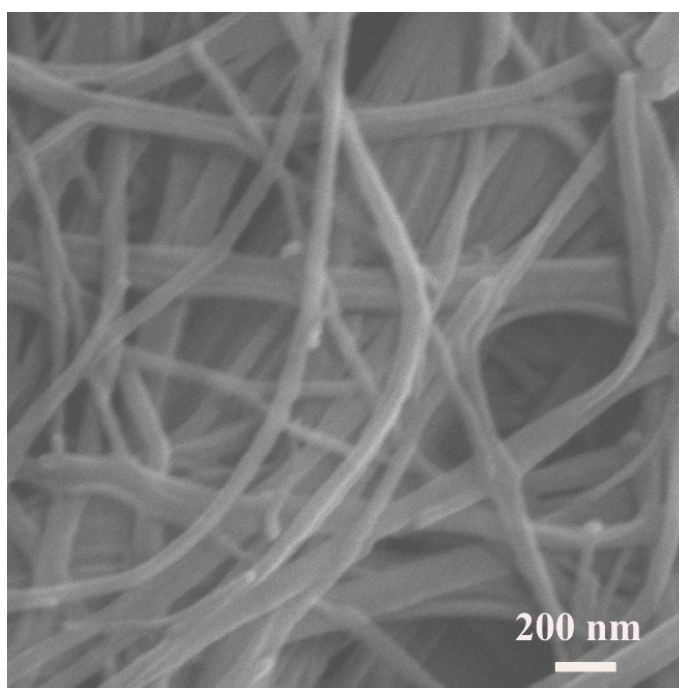


**Figure S3.** TGA curve of Zn(MAA)<sub>2</sub> nanoribbons tested under air atmosphere (heating rate: 10 °C/min).

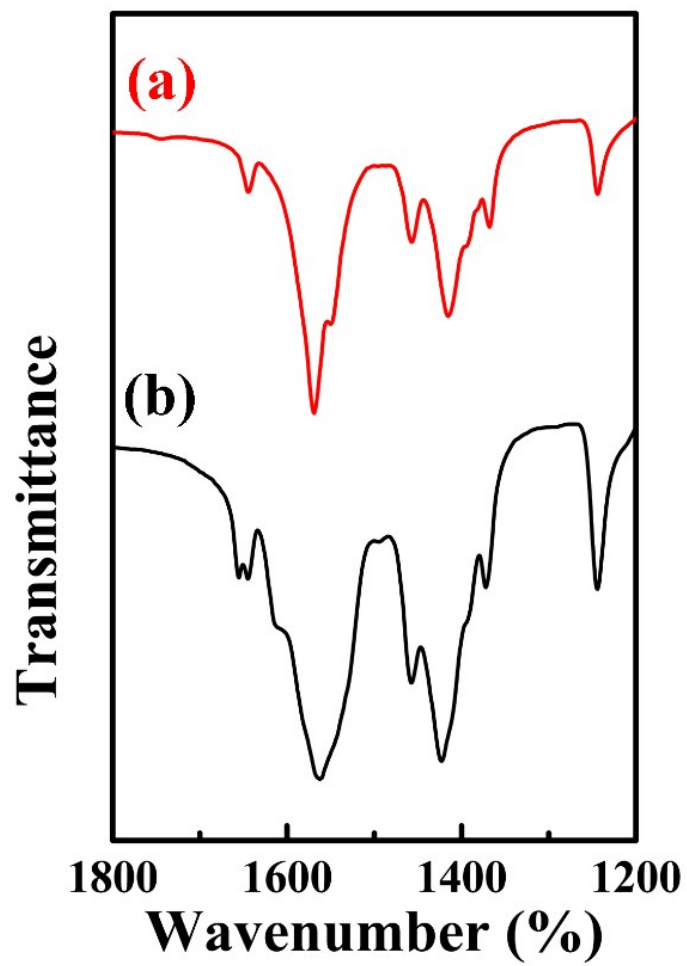
As is shown in TGA curve, the initial decomposition temperature and the complete decomposition temperature of the Zn(MAA)<sub>2</sub> nanoribbons under air atmosphere is around 102 and 352 °C respectively. TGA results further manifests the molecule formula of Zn(MAA)<sub>2</sub> we synthesized. The weight loss ratio from 102 to 352 °C is approximately 66.42 %, which is in accordance with the calculated value of 65.37 %.



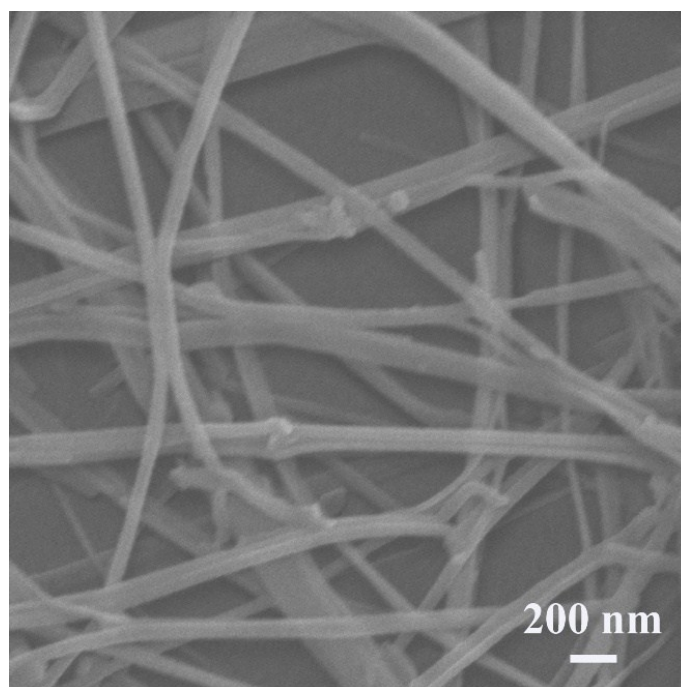
**Figure S4.** XRD pattern of the Zn (MAA)<sub>2</sub> assemblies.



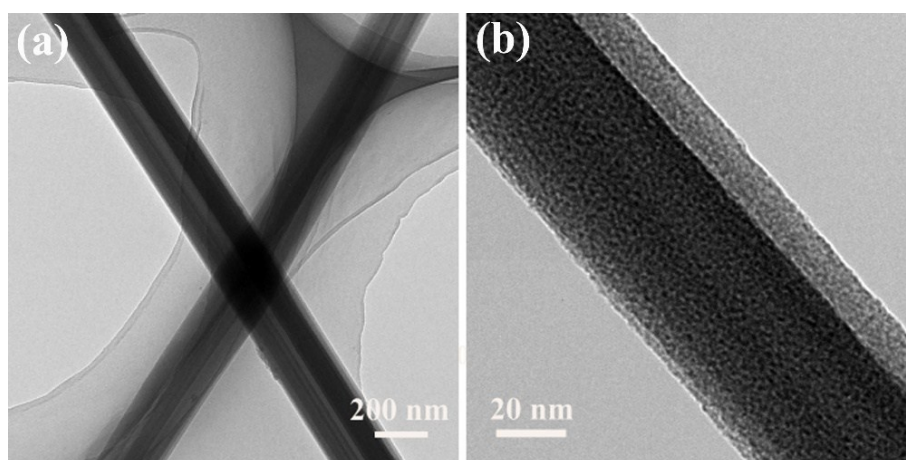
**Figure S5.** SEM image of the Zn (MAA)<sub>2</sub> nanoribbons.



**Figure S6.** FTIR spectrum of the Zn (MAA)<sub>2</sub>/Pd(II) nanoribbons (a) and the Zn(MAA)<sub>2</sub> nanoribbons (b).



**Figure S7.** SEM image of the Zn (MAA)<sub>2</sub>/Pd(II) nanoribbons.



**Figure S8.** TEM images (a, b) of the Zn (MAA)<sub>2</sub>/Pd(II) nanoribbons.

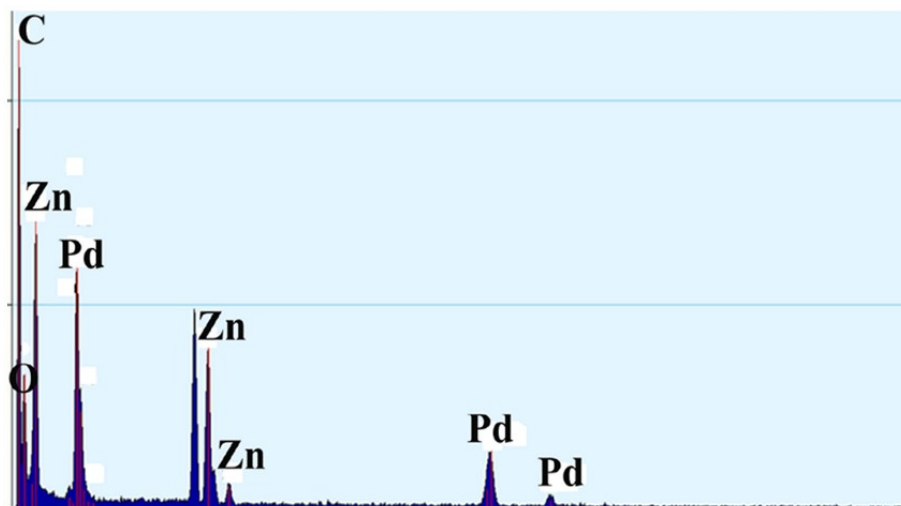
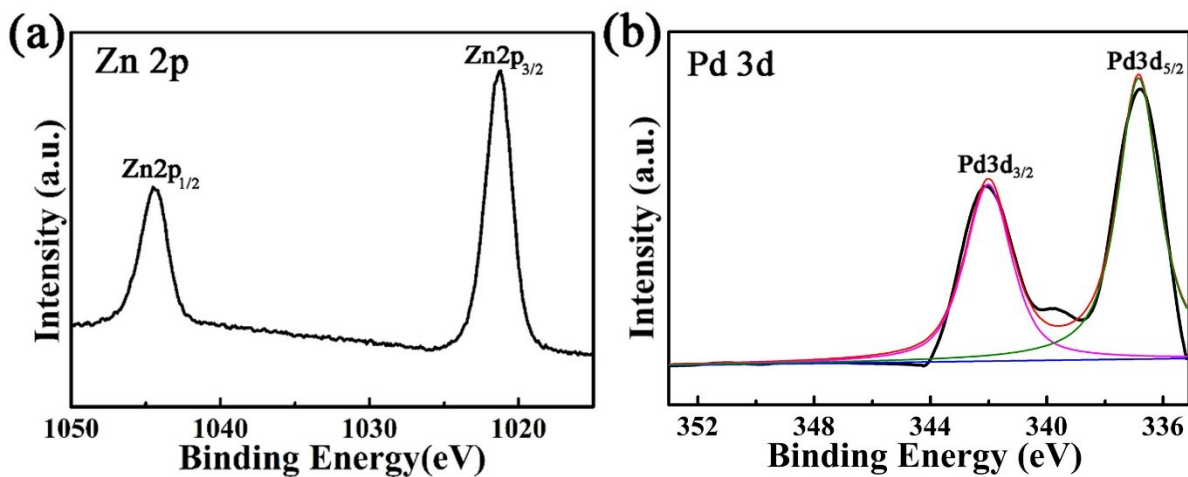


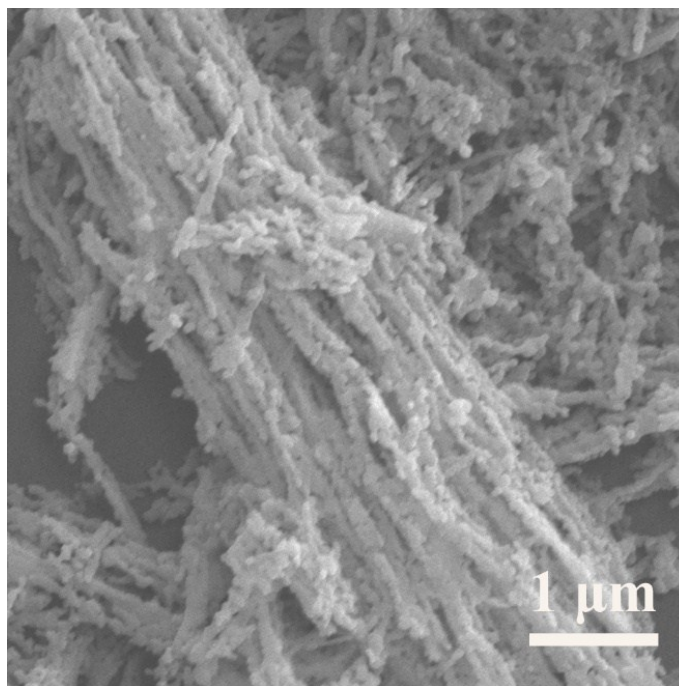
Figure S9. EDX spectrum of Zn(MAA)<sub>2</sub>/Pd(II).





**Figure. S10** High-resolution XPS spectra of ZnO/PdO nanoribbons: Zn 2p spectrum (a), and Pd 3d spectrum (b).

According to Fig. S10a, peaks are located at 1022.0 and 1045.0 eV in Zn 2p spectra, Thus, the spin-orbit splitting for Zn-2p<sub>3/2</sub> and Zn-2p<sub>1/2</sub> is calculated to be 23 eV, which confirms the Zn atoms are completely oxidized.



**Figure. S11** SEM image of the ZnO/PdO nanoribbons.