

# Electronic Supplementary Material

## Thermoresponsive block copolymer supported Pt nanocatalysts for base-free aerobic oxidation of 5-hydroxymethyl-2-furfural

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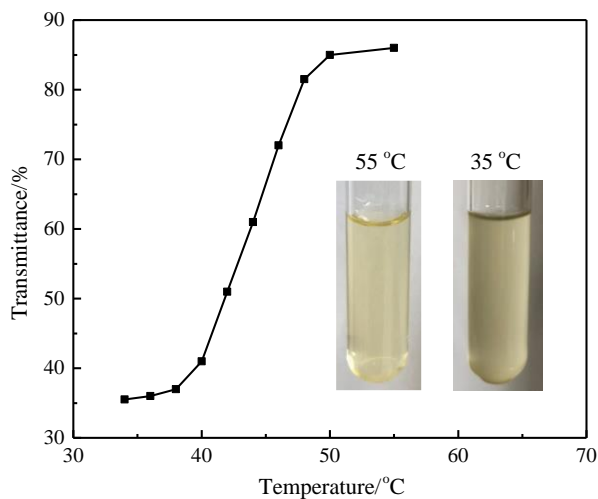
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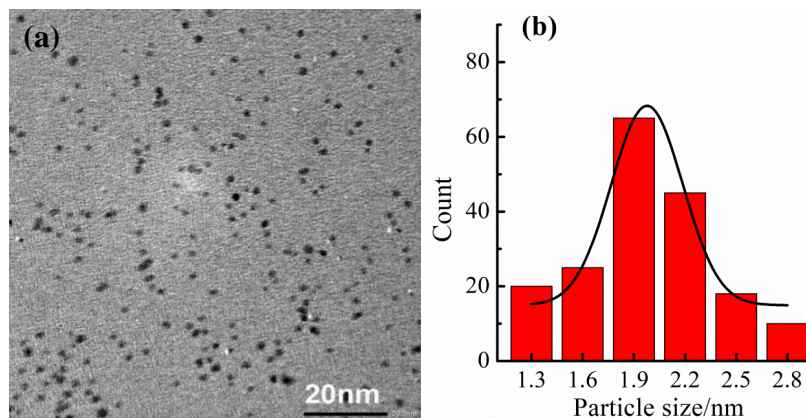
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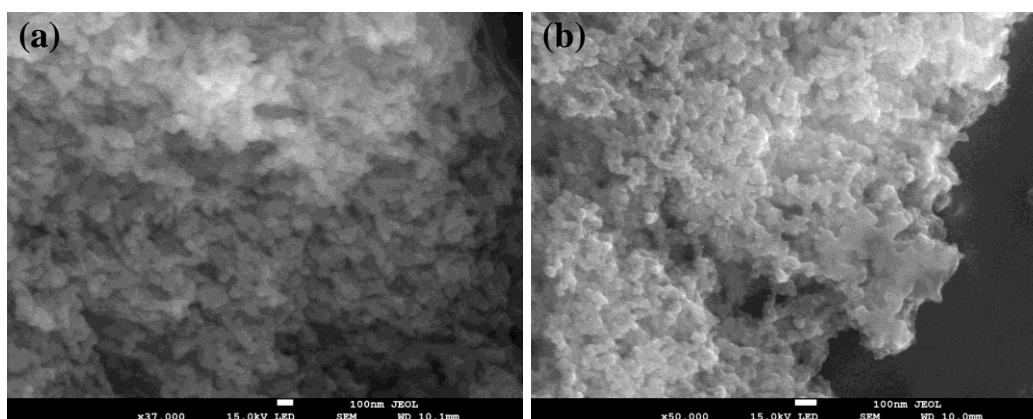
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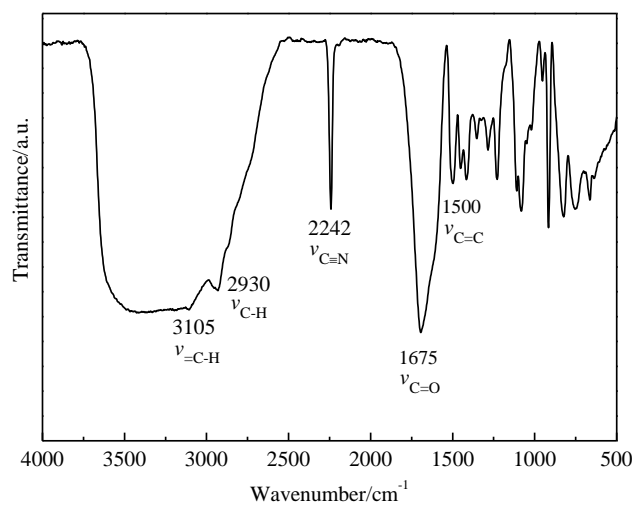
**Fig. S1** The temperature-dependence of the turbidity for the 0.5 wt% aqueous solution of **P1**. The insets are the photographs of **P1** aqueous solution at 55 °C and 35 °C.



**Fig. S2** TEM image (a) and particle size distribution (b) of used Pt/P2-20.



**Fig. S3** SEM images of (a) Pt/P2-40 and (b) used Pt/P2-40.



**Fig. S4** FT-IR spectrum of used Pt/P2-40.

**Table S1** Base-free oxidation of HMF to FDCA over different nanocatalysts in water

Catalyst	HMF/M <sup>a</sup> )	T/°C	P <sub>O<sub>2</sub></sub> /bar	t/h	Y <sub>FDCA</sub> /%	Ref.
Au/HT	40	95	1	7	>99	[1]
AuPd/CNT	100	100	5	12	94	[2]
Pt/PVP	20	80	1	24	95	[3]
Ru/C	10	120	2	10	88	[4]
Pd/HT	20	100	1	8	>99.9	[5]
Ru/Mn <sub>6</sub> Ce <sub>1</sub> O <sub>7</sub>	80	150	10	15	99.9	[6]
Pt/C-O-Mg	50	110	10	12	97	[7]
Pt/Dowex-Na	62	120	20	22	98	[8]
Pt <sub>1</sub> Sn <sub>1</sub> /TiO <sub>2</sub>	50	110	10	4	13	[9]
Ru/ZrO <sub>2</sub>	31	120	10	16	96	[10]
Pt/ <b>P2</b> -40	25	100	8	12	>99.9	this work

<sup>a</sup> Molar ratio of HMF to metal.

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