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Large-scale controllable preparation and performance of hierarchical nickel microstructures by seed-mediated solution hydrogen reduction route

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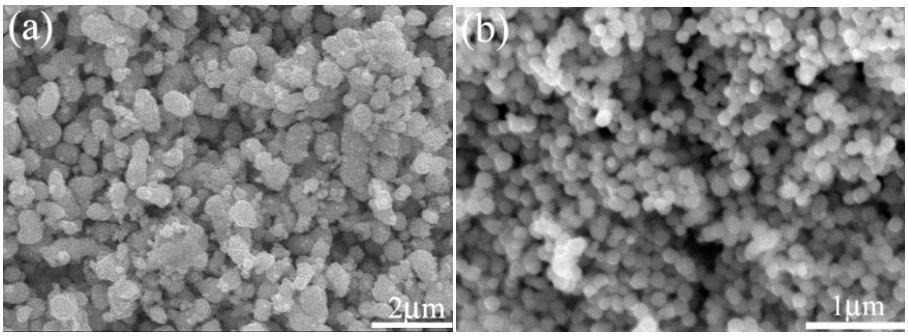

Figure S1. SEM images of nickel seeds with different diameter: (a) *ca.*700 nm; (b) *ca.* 200 nm.

Table S1. the conversion and pH value of the solution after reaction at 180 °C

The amount of NH_3 solution	5.7	6.2	6.7	7.2	7.7
Conversion ratio	*ca.* 0.8326	*ca.* 0.8539	*ca.* 0.9239	*ca.* 0.9523	*ca.*1.0000
pH value	2.23	2.44	2.81	8.09	8.67

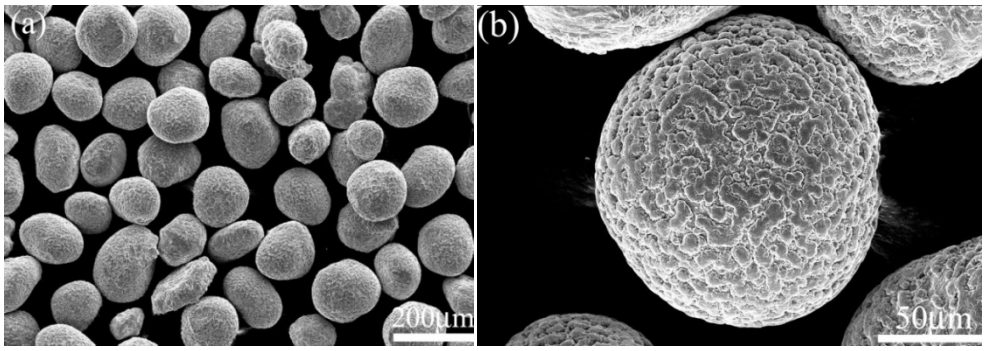

Figure S2. FESEM images of the products at 10th cycle using 1.2 g nickel seeds for 1 cycle: (a) low magnification; (b) high magnification.

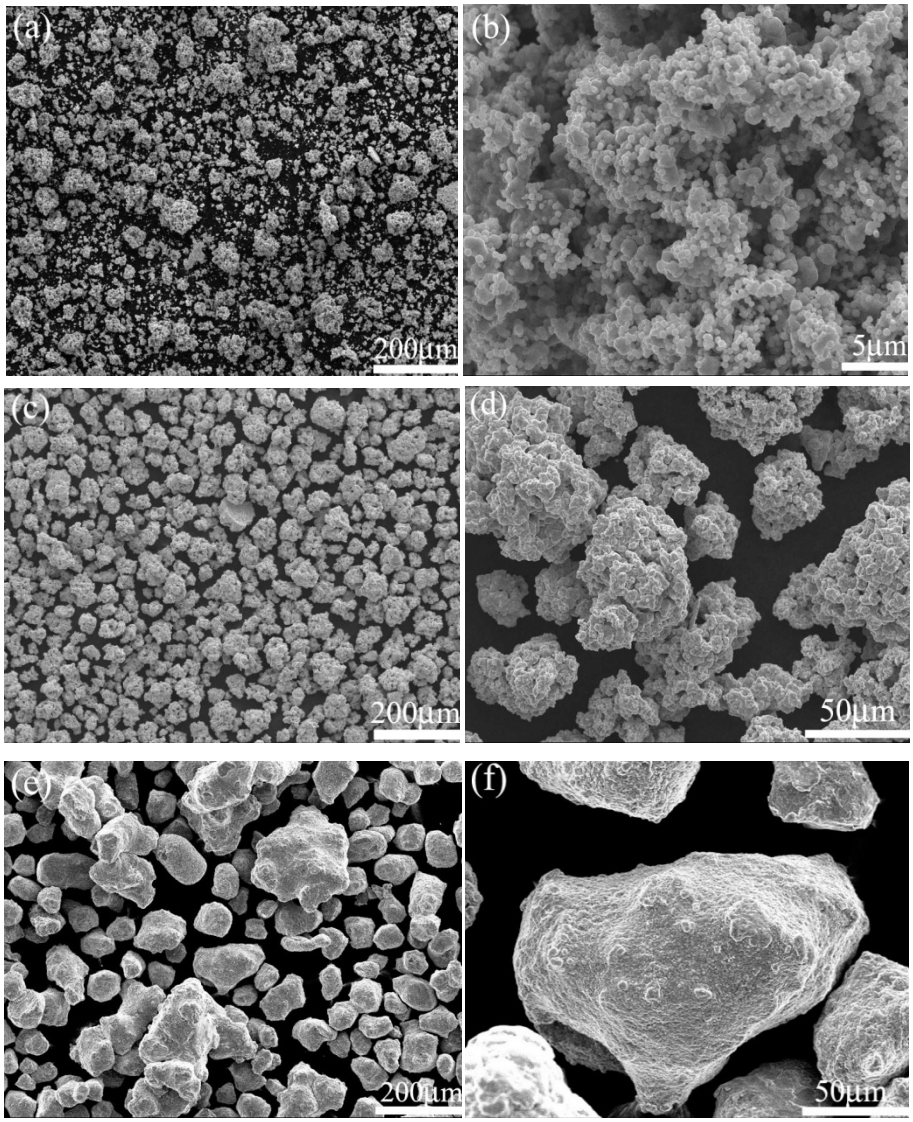

Figure S3. Different magnification FESEM images of the products using smaller nickel seeds about 200 nm: (a-b) 1 cycle; (c-d) 5 cycles; (e-f) 15 cycles.

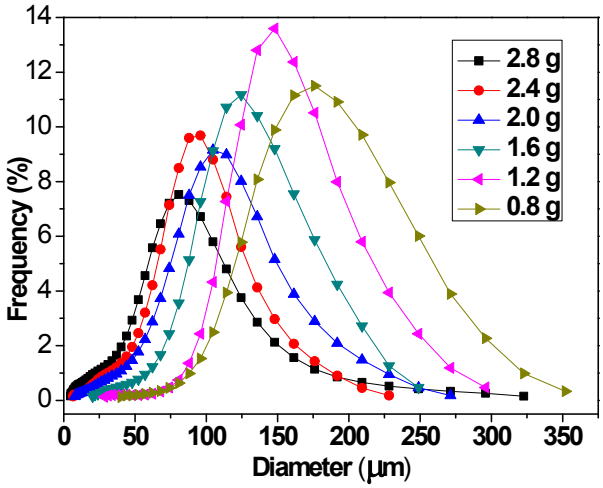

Figure S4. Size attribution of the products using different amount of nickel seeds with the rotation speed of 750 rpm.

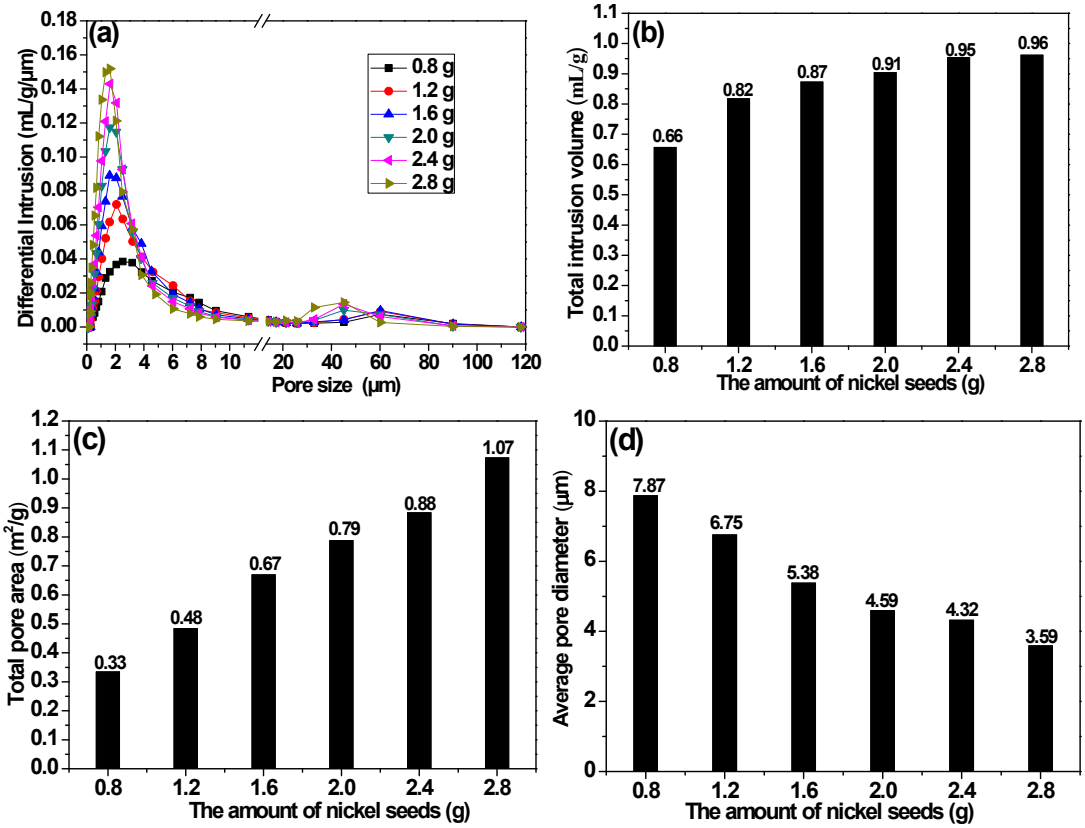

Figure S5. Pore information of the products using different amount of nickel seeds with the rotation speed of 750 rpm: (a) differential intrusions curve; (b) the average pore diameter; (c) total intrusion volume; (d) total pore area.

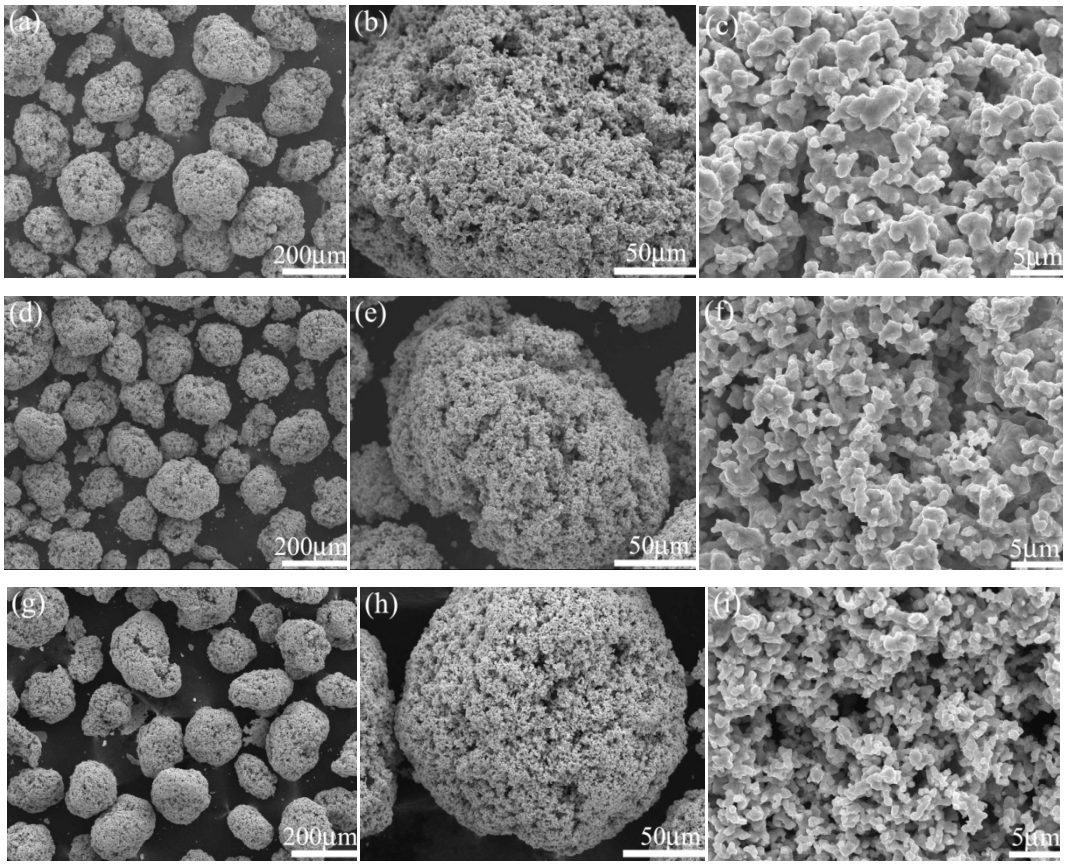

Figure S6. Different magnification FESEM images of the products for 1 cycle with the rotation speed of 750 rpm: (a-c) 0.8 g; (d-f) 1.6 g; (g-i) 2.4 g.