

## 理性设计核-壳 Rh@沸石催化材料用于二烯烃选择加氢反应

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## Rational Design of a Core-Shell Rh@Zeolite Catalyst for Selective Diene Hydrogenation

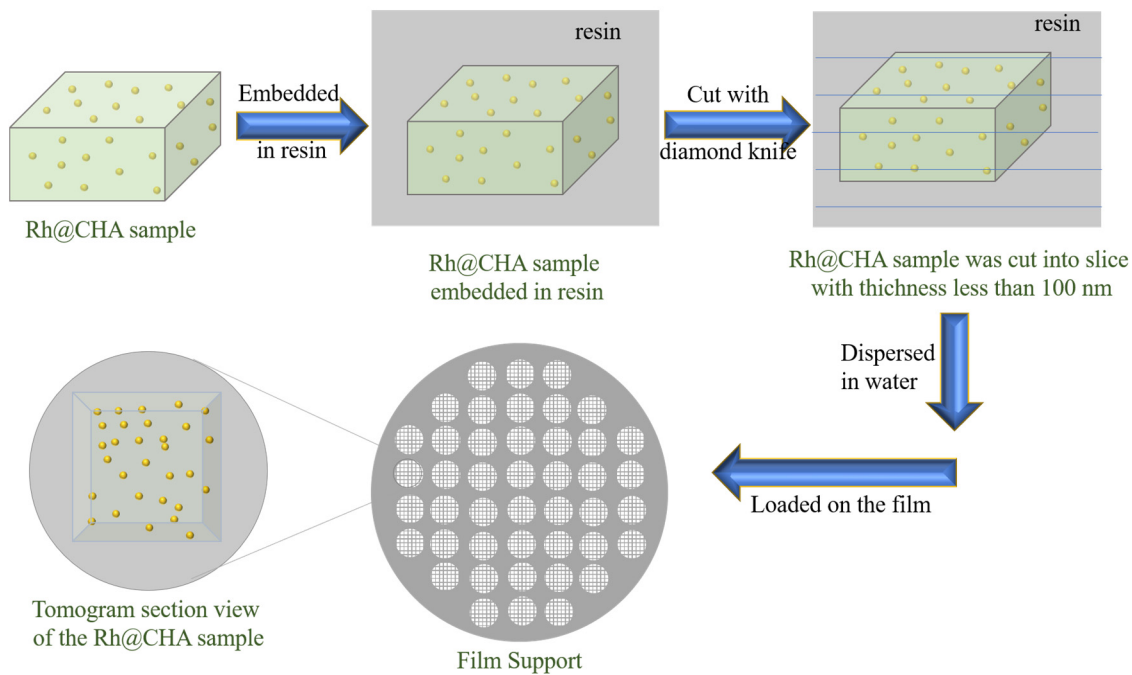
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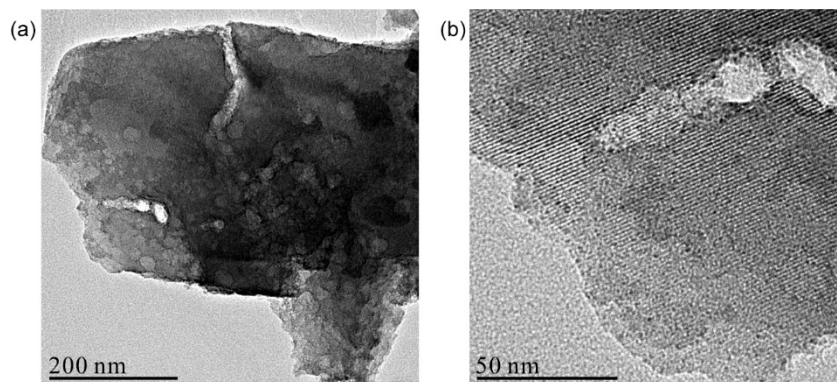
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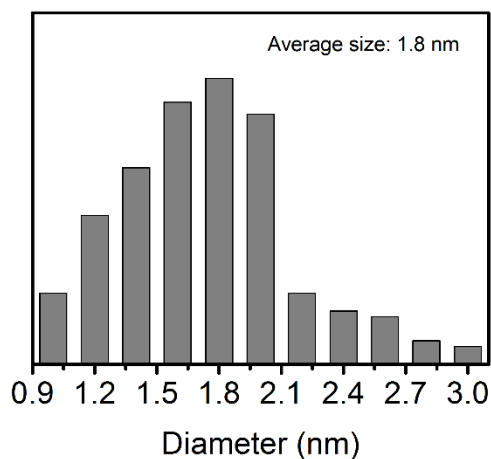


**Scheme S1 Procedure for the tomogram section TEM characterization.**

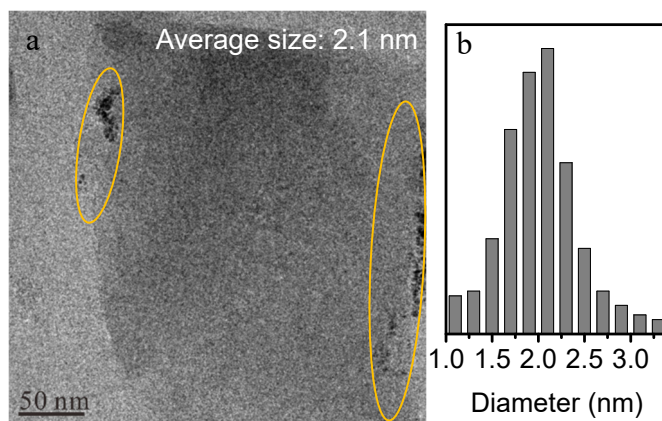
**Note:** The detailed procedures are as following: The zeolite powder was dispersed in liquid resin, followed by solidification to obtain solid resin-embedded zeolite crystals. Then the resin was cut into slices with thickness of 50–80 nm. The slices were dispersed in water and dropped on the Cu support film for TEM characterization.



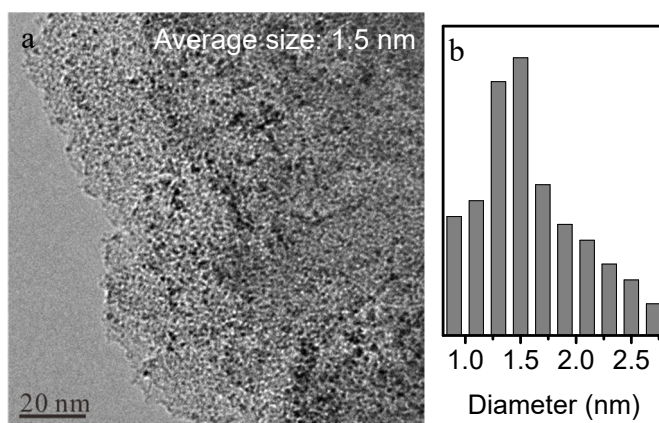
**Fig. S1 (a) TEM and (b) HR-TEM images of Y zeolite.**



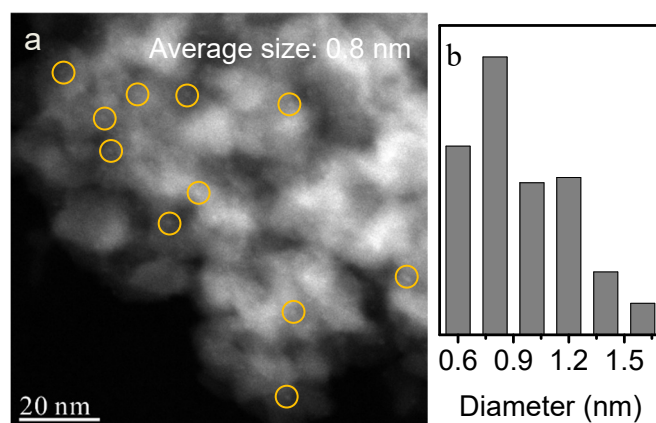
**Fig. S2 Rh nanoparticle size distribution of the Rh@CHA sample.**



**Fig. S3** (a) TEM tomographic image and (b) Rh nanoparticle size distribution of the Rh/CHA sample.  
 Note: The Rh nanoparticles only exist on the external surface of the CHA zeolite crystal (highlighted by the yellow circle).



**Fig. S4** (a) TEM image and (b) Rh nanoparticle size distribution of the Rh/C sample.



**Fig. S5** (a) STEM image and (b) Rh nanoparticle size distribution of the Rh/Al<sub>2</sub>O<sub>3</sub> sample.

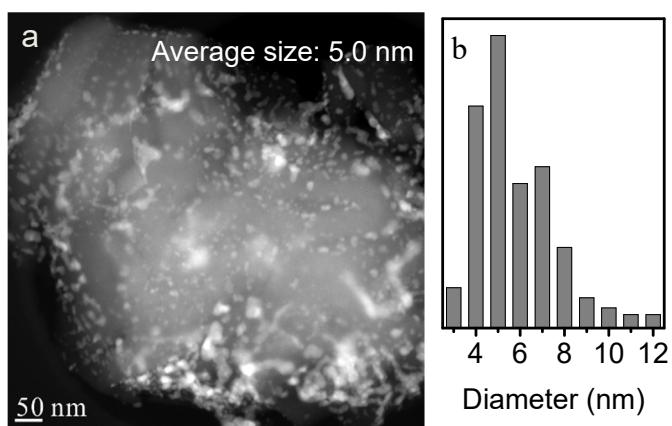


Fig. S6 (a) STEM image and (b) Rh nanoparticle size distribution of the Rh/SiO<sub>2</sub> sample.

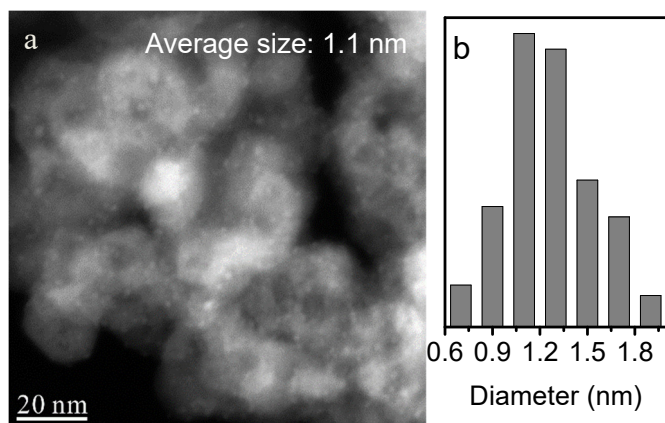


Fig. S7 (a) STEM image and (b) Rh nanoparticle size distribution of the Rh/TiO<sub>2</sub> sample.

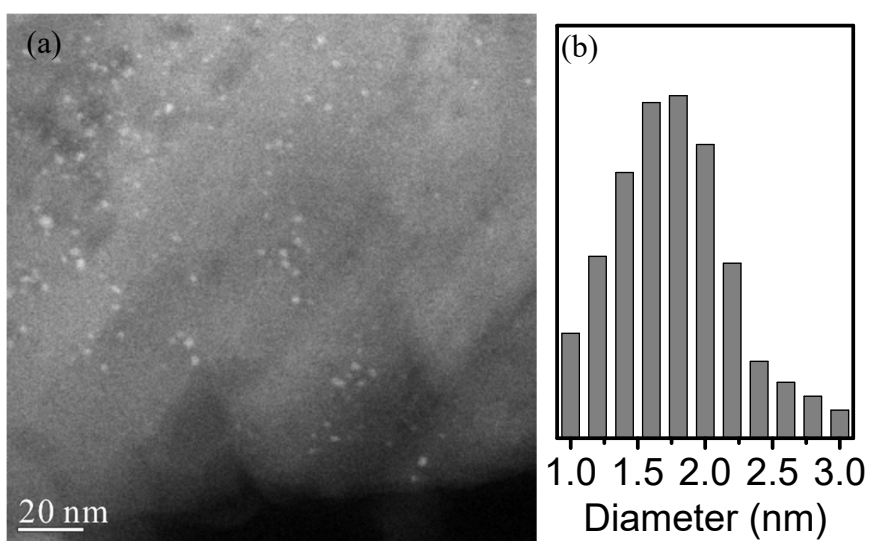


Fig. S8 (a) STEM tomographic image and (b) Rh nanoparticle size distribution of the Rh@CHA sample after used for 5 times.