Supplementary Information

Facile synthesis of uniform *h*-BN nanocrystals and their application as catalyst support towards the selective oxidation of benzyl alcohol

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Preparation of Au/BN

The Au/BN material was prepared according to previous reports[1-4]. Briefly BN NCs were firstly hydrothermally treated by H_2O_2 in 20-mL Teflon-lined stainless steel autoclave at 120 ºC. Then, the $HAuCl_4$ solution with appropriate amount as well as urea (100 times as much as $HAuCl_4$) was added into 60 mg BN NCs. After maintained at 80 ºC for 20 hours, the solid powder was separated by centrifugation and washed for several times with deionized water. Finally, it was dried at 80 °C overnight, and calcined at 350 °C for 3 h.

The XRD(a), FT-IR (b) and Raman spectra (c) of S_1

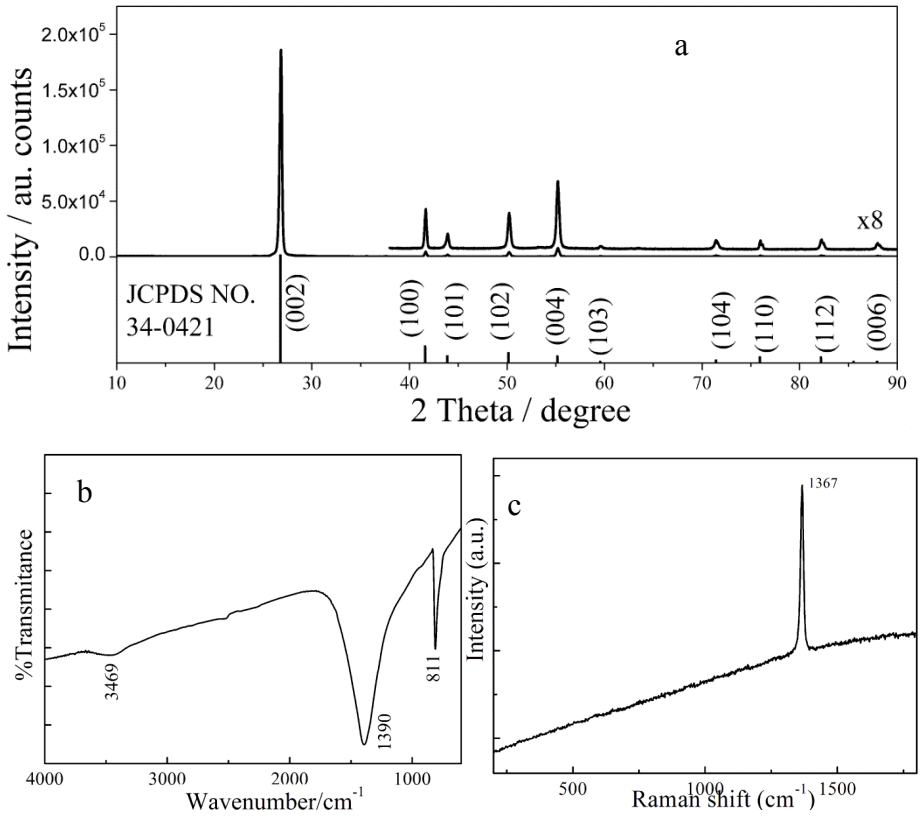

Fig. SI 1. The XRD pattern in the range of 10-90°(a), FT-IR (b) and Raman spectra (c) of S_1. The FTIR spectrum of S1 is shown in Fig. SI 1b. Two strong absorption bands locate at 1390 and 811 cm^{-1} can be assigned to the in plane B–N stretching vibrations and out-of-plane B–N–B bending vibrations of BN, respectively.[5]. The as-prepared S_1 was further examined by Raman spectrum. The single peak locates in 1365 cm^{-1} corresponds to an in-plane vibration *(E2g)*.

SEM images of BN NCs

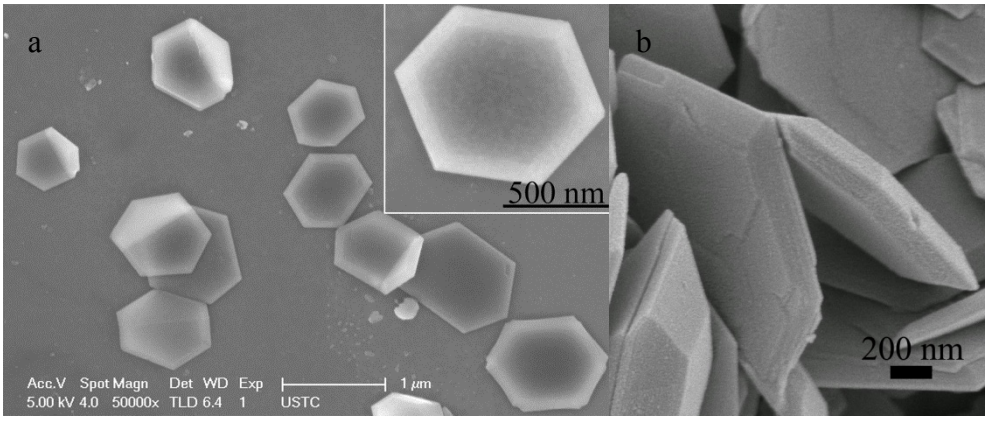

Fig. SI 2 SEM images of S_1, top view(a) and side view (b).

SEM images of the sample obtained at different temperatures.

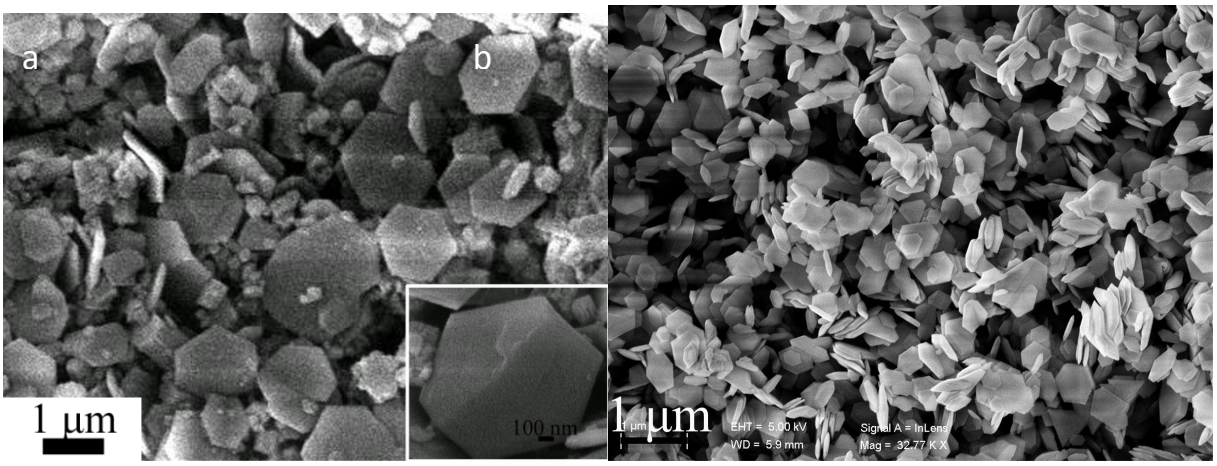

Fig. SI 3 SEM images of the sample obtained at 800 ºC (a) and 730 ºC (b).

References for SI

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