

## Electronic Supplementary Information (ESI)

### **Tuning Metal-Support Interactions in MOF-derived CoNi@NC supported Pd Catalysts for Efficient Hydrogenation of Bicarbonate Using Glycerol as a Hydrogen Donor**

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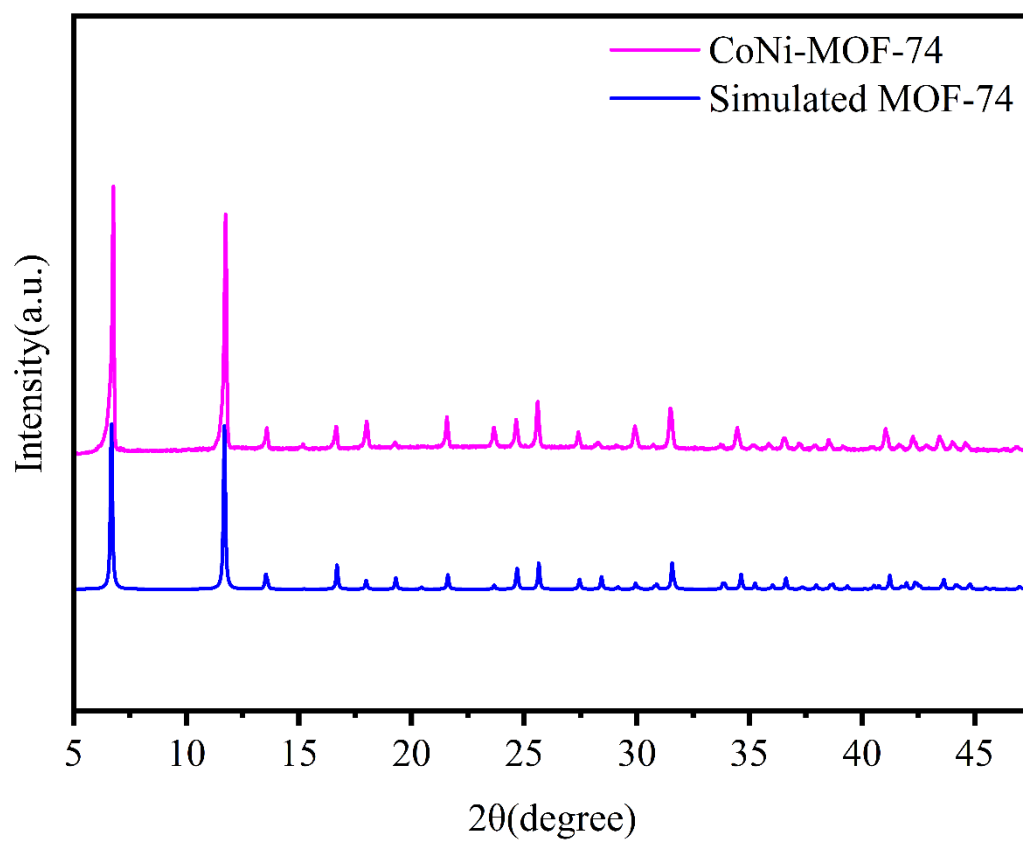
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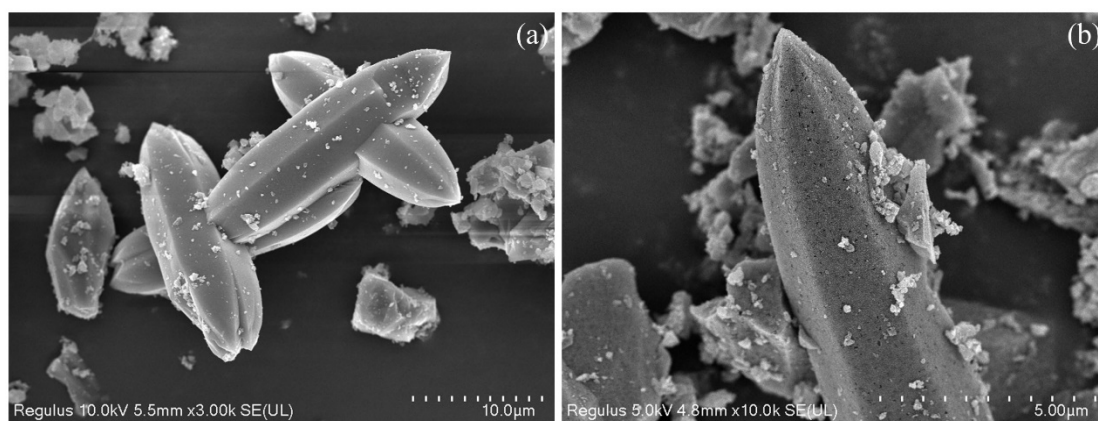
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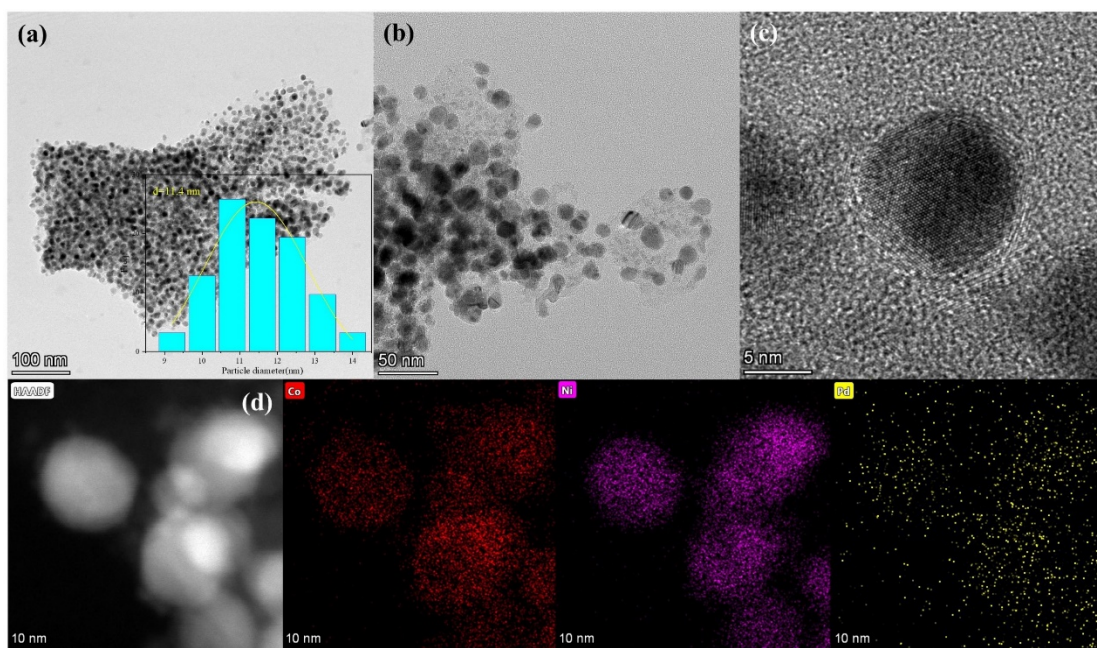
**KEYWORDS:** transfer hydrogenation; bicarbonate; glycerol; Pd-based catalysts;  
CoNi@NC



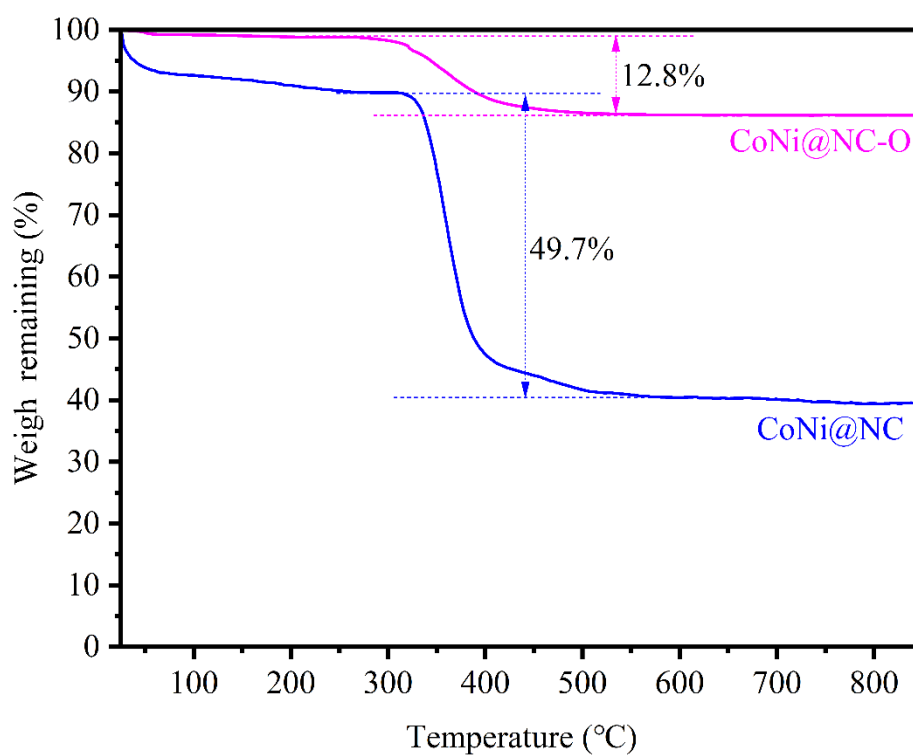
**Figure S1** XRD patterns of CoNi-MOF-74 and Simulated CoNi-MOF-74.



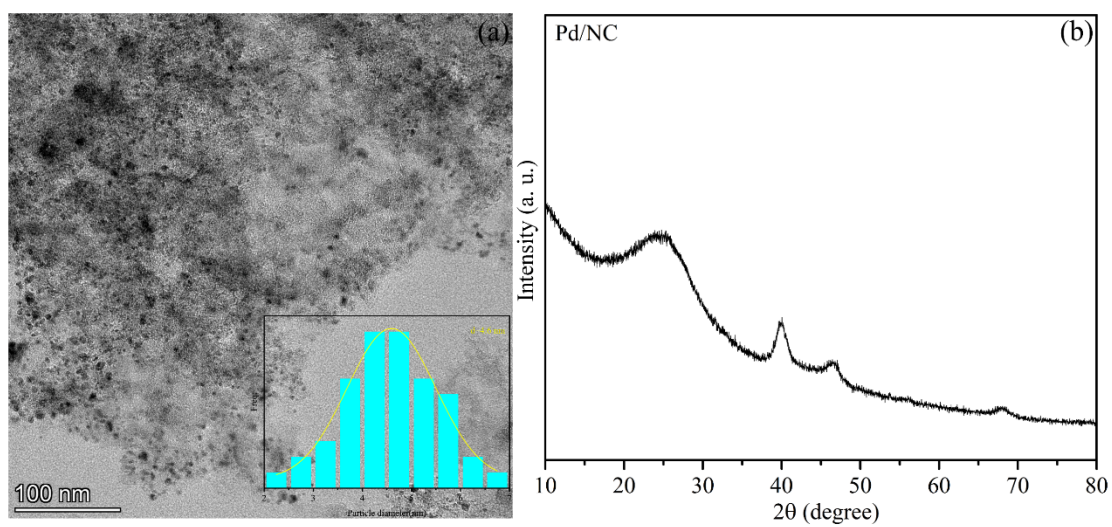
**Figure S2** SEM images of CoNi-MOF-74 (a) and CoNi@NC-O (b)



**Figure S3** (a) TEM images of CoNi@NC-O; (b) TEM images of Pd/CoNi@NC-O; (c) HRTEM images of Pd/CoNi@NC-O; (d) HAADF-STEM diagram of Pd/CoNi@NC-O and corresponding EDS element distribution diagram.



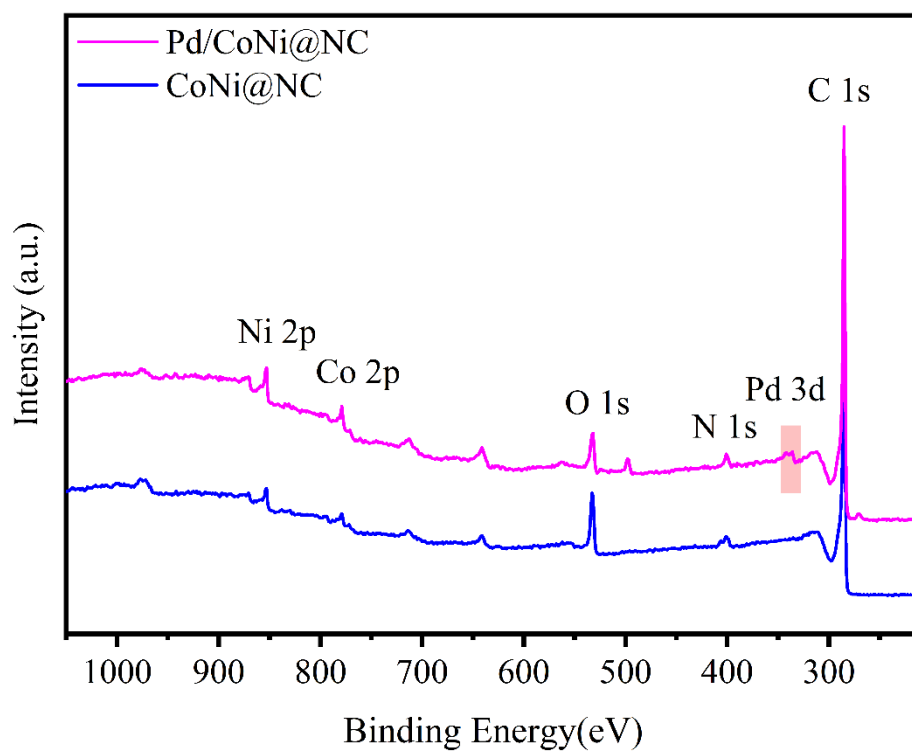
**Figure S4** TGA curves of CoNi@NC-O and CoNi@NC under oxygen atmosphere



**Figure S5** (a) TEM images and (b) XRD patterns of Pd/NC.

**Table S1** Pore parameters of CoNi-MOF-74, CoNi@NC and Pd/CoNi@NC

| Sample      | $S_{\text{BET}}$ ( $\text{m}^2 \cdot \text{g}^{-1}$ ) | Pore volume ( $\text{cm}^3 \cdot \text{g}^{-1}$ ) | Average pore size (nm) |
|-------------|-------------------------------------------------------|---------------------------------------------------|------------------------|
| CoNi-MOF-74 | 563.9                                                 | 0.053                                             | 1.8                    |
| CoNi@NC     | 455.5                                                 | 0.536                                             | 6.0                    |
| Pd/CoNi@NC  | 396.1                                                 | 0.491                                             | 5.7                    |



**Figure S6** XPS survey spectra of CoNi@NC and Pd/CoNi@NC