On the Selection of the Best Polymorph of Al_2O_3 Carrier for the Supported Cobalt Nano-spinel Catalyst for N_2O Abatement: an Interplay between Preferable Surface Spreading and Damaging Active Phase – Support Interaction

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Supplementary data

On the Selection of the Best Polymorph of Al_2O_3 Carrier for the Supported Cobalt Nano-spinel Catalyst for N_2O Abatement: an Interplay between Preferable Surface Spreading and Damaging Strong Active Phase – Support Interaction

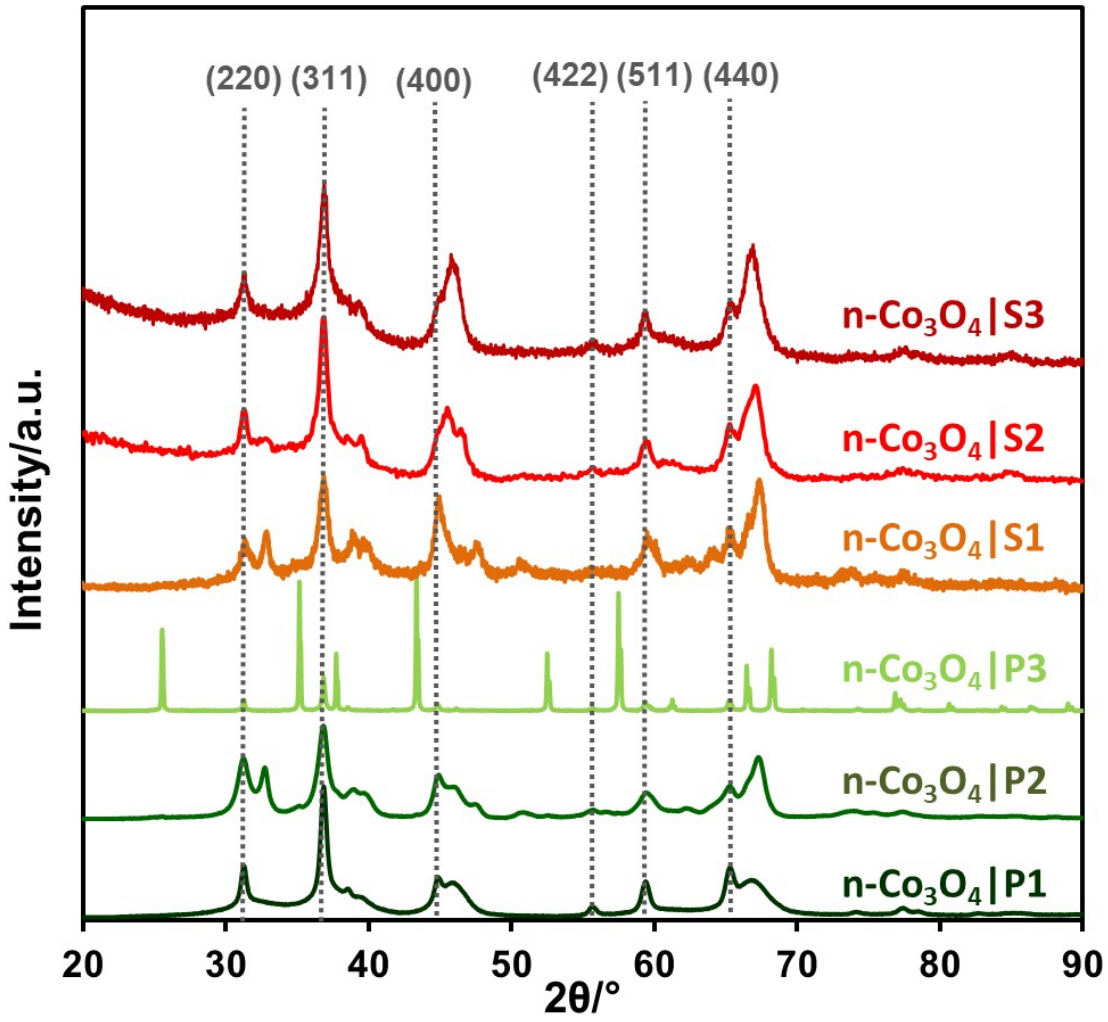

Fig. S1. The XDR patterns of the $Co_3O_4|Al_2O_3$ supported catalysts obtained using a series of alumina supports.

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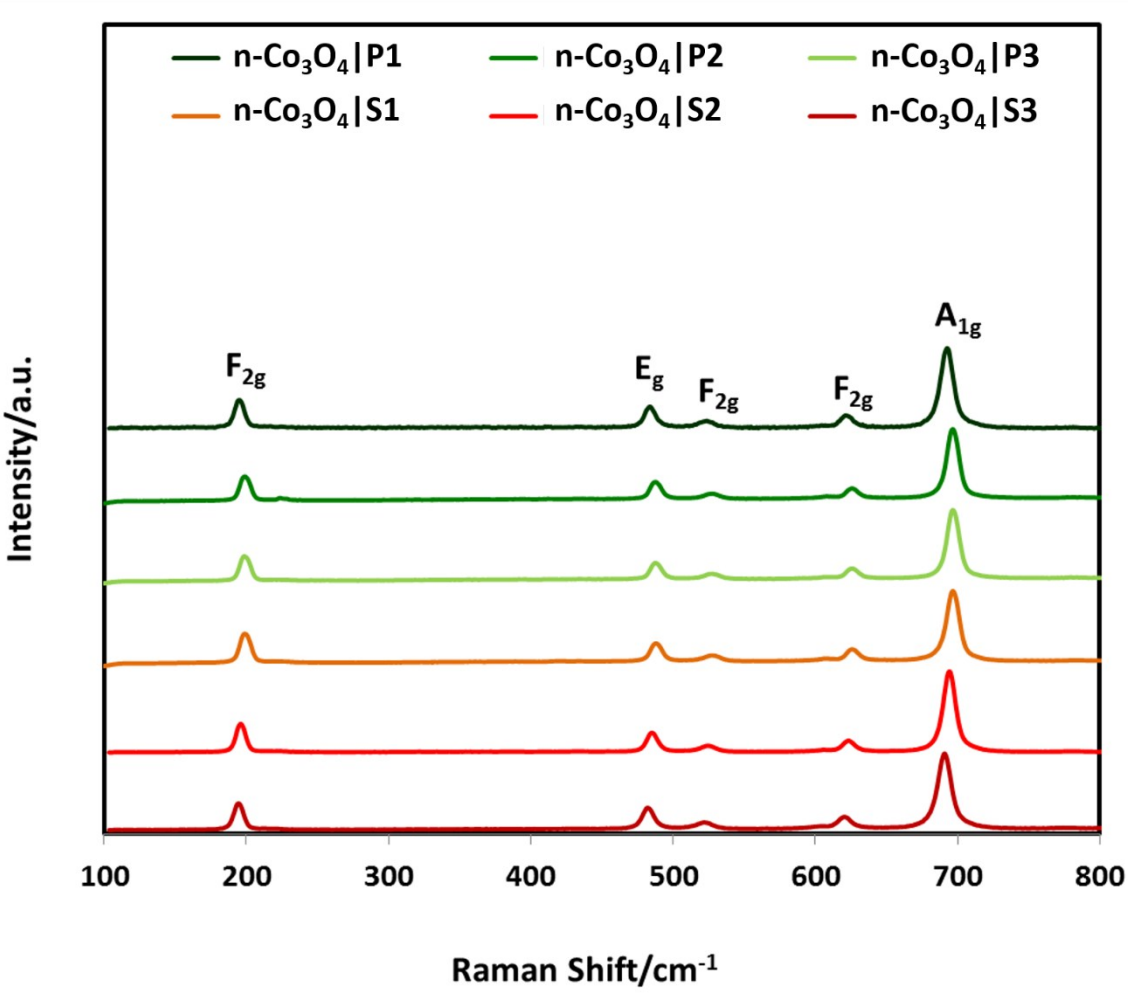

Fig. S2. Raman spectra of the $Co_3O_4|Al_2O_3$ supported catalysts registered with an excitation wavelength of 785 nm.

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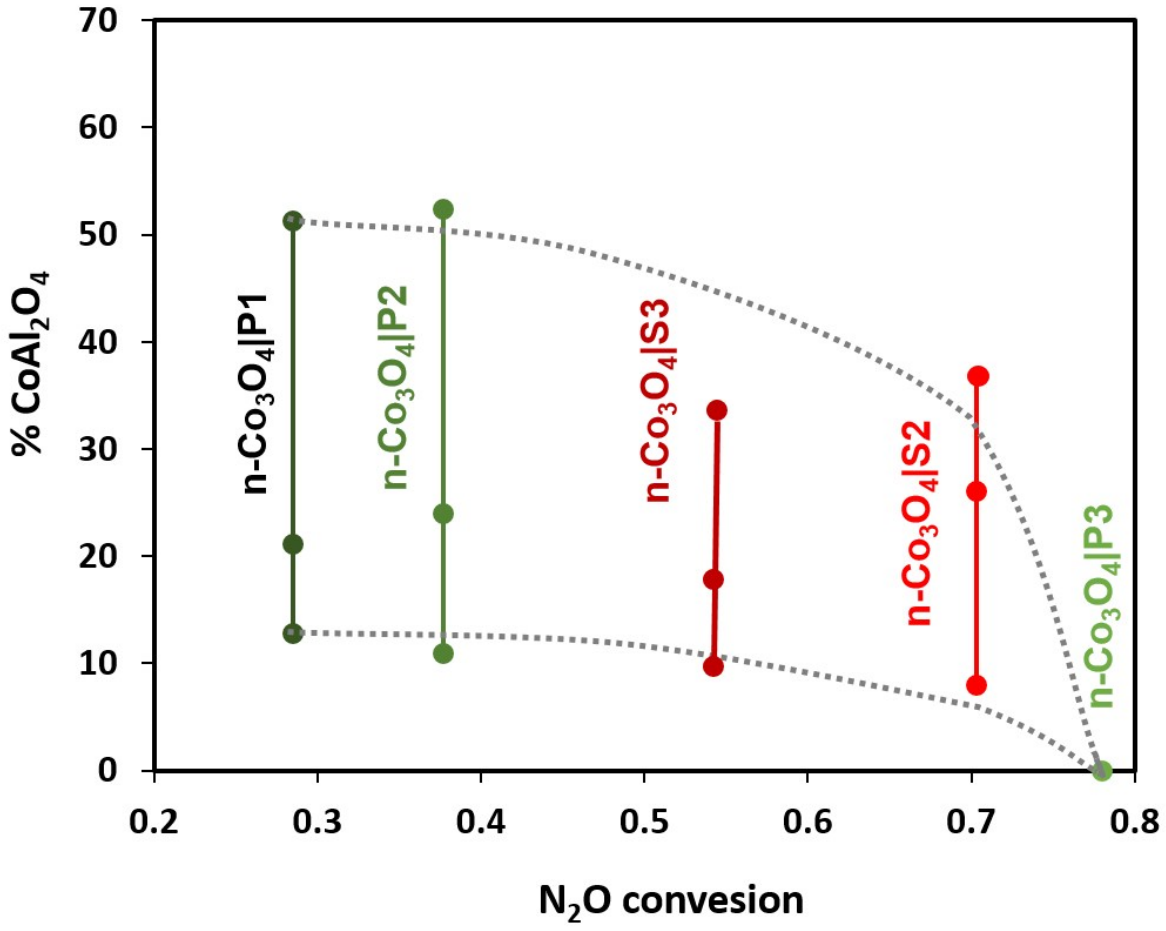

Fig. S3. Plot of the $CoAl_2O_4$ content determined from the deconvoluted Raman peaks areas (Fig. 3) versus N_2O conversion at 500°C (the bars colors for the indicated catalysts is the same as in the main text figures). The three points for each catalysts represent independent μRaman measurements taken at three different regions of inspection (probed spots) of the catalyst pellets. The dotted line illustrate a general apparent trend of the increase in N_2O conversion with lowering of the undesired $CoAl_2O_4$ phase content. Large variation of the mixed spinel content in the investigated samples prohibits any sensible quantification of the observed effect.

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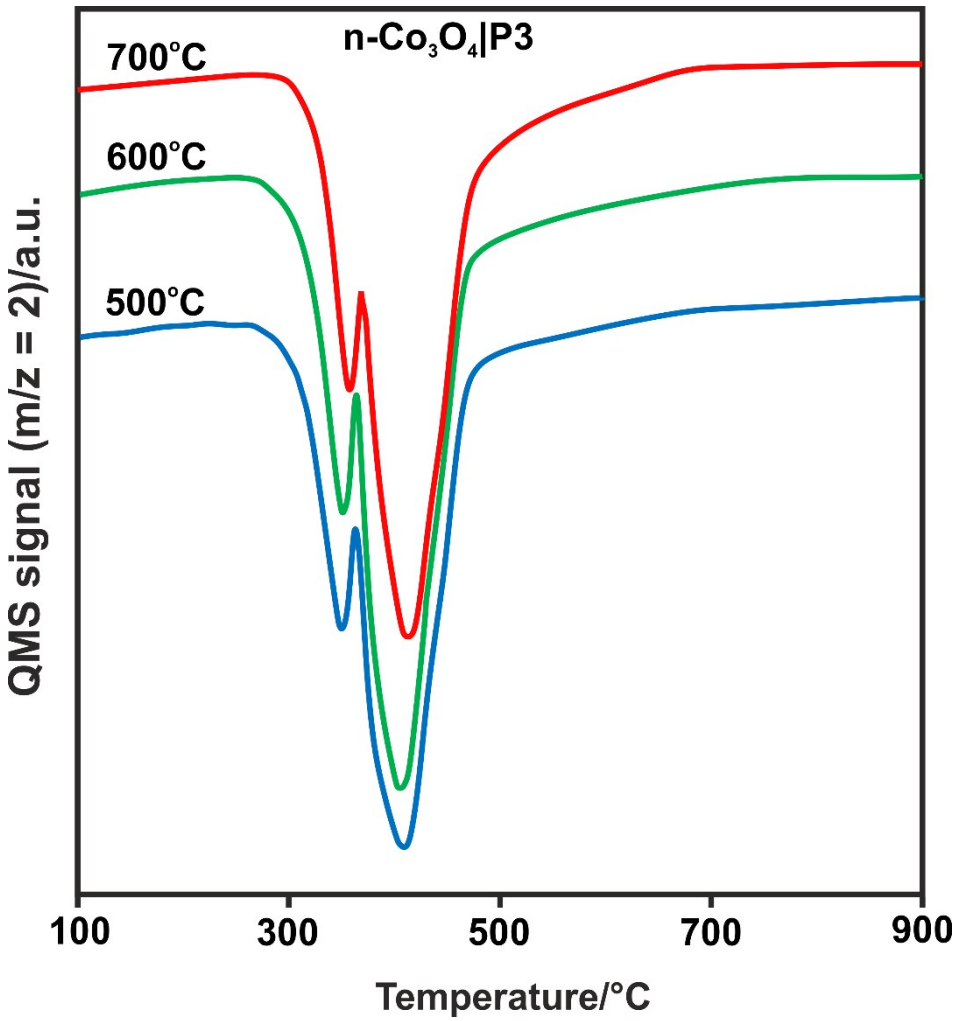

Fig. S4. The TPR curves for the $Co_3O_4|Al_2O_3$ supported catalysts based on P3 support.

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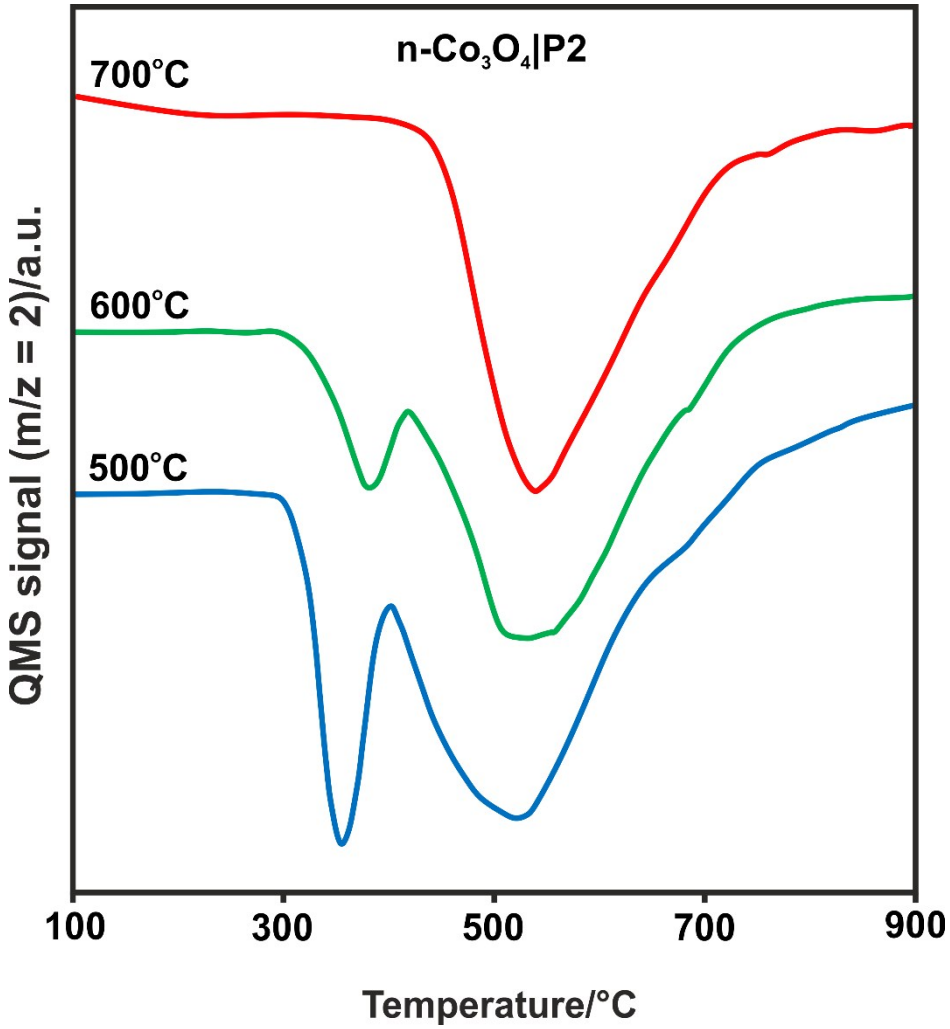

Fig. S5. The TPR curves for the $Co_3O_4|Al_2O_3$ supported catalysts based on P2 support.

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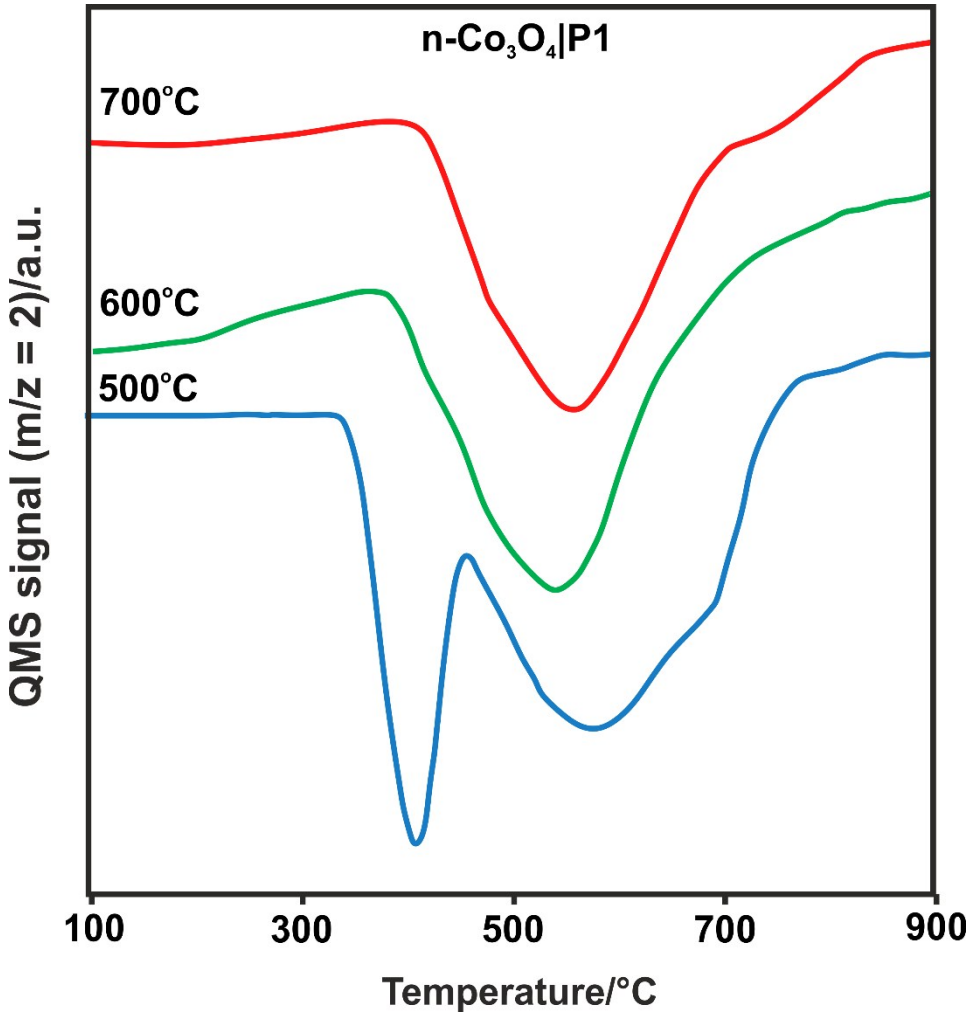

Fig. S6. The TPR curves for the $Co_3O_4|Al_2O_3$ supported catalysts based on P1 support.