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**STRUCTURAL AND MAGNETIC PROPERTIES Co<sub>3</sub>O<sub>4</sub> OBTAINED BY THE COPRECIPIATION**

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Study shows a study of the structural and magnetic properties of cobalt oxide Co<sub>3</sub>O<sub>4</sub> doped with Cr as a function of the parameters adopted during the synthesis by chemical co-precipitation were flowing neutralizing NaOH and calcination temperature to 800 °C and 1000 °C. First, a series of samples of this oxide in which the flow was changed neutralization of the NaOH solution was generated. Thermal treatments were carried out at 800 °C and 1000 °C in anticipation of changing voltages on the network, average crystal size, etc. XRD observed in this case that the major phase and Co<sub>3</sub>O<sub>4</sub> was found that the change of flow, the average crystallite size of network parameters and changes suffered distorted. In magnetic measurements MxT for samples to 800 °C and 1000 °C we observed behavioral evidence of a ferri / ferromagnetic-paramagnetic transition. On the other hand, the Curie-Weiss parameter was found negative for all samples associated with the major phase Co<sub>3</sub>O<sub>4</sub> antiferromagnetic. Thus, we could correlate these phenomena the possible presence of phase clusters / nanoclusters amorphous ferri / ferromagnetic with CoCr<sub>2</sub>O<sub>4</sub> / CrO<sub>2</sub> generated with the incorporation of Cr under different NaOH flows. These coupling steps leading to the observed behavior. Have the MXH measures to 1000 °C in 50K presented a characteristic hysteresis loop system ferri / ferromagnetic well pronounced and could associate this, beyond the coupling phase, the fact that higher temperatures increase the grain size decreasing the surface anisotropy and favoring phases ferri / ferromagnetic. We are convinced that the results of our research is an important contribution to the field.