

## **STUDY OF SOME FACTORS THAT INFLUENCE ON THE SYNTHESIS OF THE Cu-Ni ALLOY, USING THE CITRATE GEL METHOD**

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**ABSTRACT:** The Cu-Ni alloys are widely used in many industries since their mechanical and special properties, which have led to the research and development of new methodologies to produce them. In this work, the synthesis by the citrate method of a 50% Cu-Ni alloy, at low temperature, has been studied. The solid decomposition, calcination and reduction experiments, at different synthesis stages of the solid solution, were carried out in a fixed-bed reactor and in a crucible. The characterization were done using several techniques, such as Thermogravimetry (TG), Temperature-Programmed Reduction (TPR), X-Ray Diffraction (DRX), Infrared Spectroscopy (IR), Scanning Electron Microscopy (SEM) and Microanalysis (EDS). The obtained results were similar for both reactor and they indicated that it is possible to obtain Cu-Ni alloys using the citrate gel method, followed by moderate thermal treatments, in controlled atmospheres (N<sub>2</sub>, O<sub>2</sub> and H<sub>2</sub> ) and in appropriate temperature ranges.