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Elaboration and structural study of Ni/SiOCo/SiO2and Ni-Co/SiO2nanocomposites2

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Abstract : The present work examines the structural properties of Ni, Co and Ni-Co supported on silica. The samples areprepared by impregnation, followed by calcination and thermal H- treatment. Several techniques, such as SEM and XRD, are used forthe characterization of the samples at different steps of their elaboration. After impregnation, the X-rays diffraction reveals theformation of nickel and cobalt silicide (NiSi, Co2Si, NiCoSi and Ni20.56Co3.44Si). After calcination, the XRD pattern presents the featuresof nickel and cobalt oxides (NiO, Co3O4, NiCoO2, NiCo2O44and CoO)with an average size of 10-25 nm. After H- treatment, the metallicphases (Ni, Co and Ni0.75Co0.25) appear at T 350°C

Keywords : nanocomposites, Structural properties, Co 2 Si, NiCoSi, NiO, Co 3 O 4, NiCoO 2, NiCo 2 O 4, Metal/Support interaction.