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Low temperature synthesis of amorphous nickel silicide colloids and their use as precursors for the preparation of highly dispersed sup-ported nickel nanoparticles.

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The preparation of Ni nanoparticles smaller than 2-3 nm still remains a challenge today. Yet, using a colloidal approach for the synthesis of Nickel-Silane based nanoparticles, [NixSi-C8H17], we successively prepared silica supported nickel NPs having a size of 1.3 ± 0.2 nm, corresponding to a dispersion of 71 ± 5 %. XAS and in situ liquid NMR indicated that the initial colloidal nanoparticles were Nix(Si-C8H17)_y aggregates, the nickel environment being close to amorphous nickel silicide (Ni₃Si₂).

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