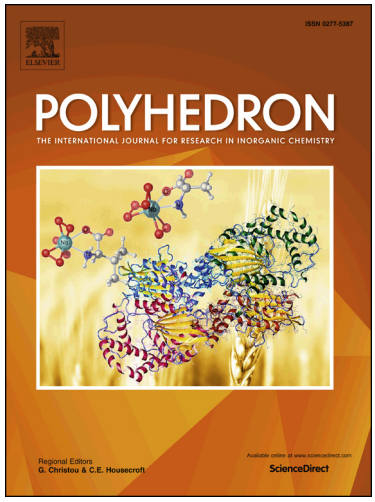

Different Roles of Hydrazine as a Complexant, Alkali Resource and Reductant on Reacting with Metal Ions for Material Synthesis

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Different Roles of Hydrazine as a Complexant, Alkali Resource and Reductant on Reacting with Metal Ions for Material Synthesis

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Abstract: Hydrazine (N_2H_4) reduction is one of the simplest and most widely used method for the synthesis of various metal element-based micro-/nano- materials. However, the roles of N_2H_4 during the chemical reaction are often diversified and subjected to further analysis. Here, Ni in turn produced its coordination compounds, hydroxide and pure metal with an increase in N_2H_4 content, where N_2H_4 plays diversified roles as a complexant, alkali resource and reductant, respectively. The elements Pr, Nd, Sm and Y exhibited high hydroxylation ability and formed their respective hydroxides. Their formation mechanisms are discussed and summarized. This study is useful for N_2H_4 to be employed for material synthesis.

Keywords: Ni^{2+}, N_2H_4, the rare earth ions

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