

Investigation of the influence of reaction conditions on the process of dinuclear nickel(II) complexing

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Abstract

The influence of the reaction conditions on the formation of binuclear nickel complexes of the type $[\text{Ni}_2(\mu\text{-O}_2\text{P}(\text{H})\text{Ar})_2(\text{bpy})_4]\text{Br}_2$, where Ar = Ph (**1**), 2,4,6-trimethylphenyl (Mes, **2**), 2,4,6-triisopropylphenyl (Tipp, **3**), 9-antryl (Ant, **4**), bpy = 2,2'-bipyridine, by interaction of $[\text{NiBr}_2(\text{bpy})_2]$ with arylphosphonic acids $\text{ArP}(\text{O})(\text{OH})\text{H}$, where Ar = Ph (**1a**), Mes (**2a**), Tipp (**3a**), Ant (**4a**), was investigated. It was established that crystallization of complexes **2** and **4** proceeds at room temperature in solution, while the formation of the crystal samples of complexes **1** and **3** requires the conditions of solvothermal synthesis at high temperature.