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Preparation of nickel phthalocyanine crystals using solvothermal synthesis. (English)

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Summary: A novel synthesis method for direct preparing β-form crystals of nickel phthalocyanine (NiPc) is presented in this article. Using quinoline as a solvent, crystals are obtained after cooling the reaction mixture to room temperature in autoclave. These high quality crystals are suitable for characterization measurements. The molecular formula of NiPc is $NiN_8C_{32}H_{16}$ belonging to monoclinic system, space group is P 2(1)/n unit cell parameters: $a = 14.668(3), b = 4.8109(10), c = 19.515(7), \alpha = 90, \beta = 121.04(2), \gamma = 90$. cell volume is $1179.91(Å)^3$ Needle-like single crystals of NiPc up to 10.3 mm in length are obtained. The influences of the different temperatures, times and solvent volumes on the crystal yields are also discussed. This method is called solvothermal synthesis method.

MSC:

74-05 Experimental work for problems pertaining to mechanics of deformable solids
74F25 Chemical and reactive effects in solid mechanics
74E15 Crystalline structure

Keywords:

solvothermal synthesis; single crystal; nipc; quinoline

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