

# Magnetic Nanowires (Ni) via Chemical Reduction Method

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## **Abstract:**

This study discusses about synthesis of magnetic nickel nanowires (NiNWs) via onestep chemical reduction method is reported. This technique is very straight forward and easy to be conducted by chemical reduction of NiSO<sub>4</sub> solution with hydrazine in basic solution. The objective of this research is to understand the influence of reaction time on the physical properties of synthesized NiNWs. In this study, the time reaction was varied from 10 minutes, 30 minutes and 60 minutes. X-ray diffraction (XRD) showed the NiNWs synthesized was polycrystalline in nature with orientation of crystals with (1 1 1) plane and subsequently with (2 0 0) and (2 2 0) planes. The effect of reaction time on nanostructure of crystals produced was studied for surface morphology, crystal size and orientation using Scanning electron microscopy (SEM) analysis. Formation of different morphologies were discussed in detail.