

## 镍-磷非晶合金超细微粒的制备和物性研究

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**摘要** 水溶液中用次亚磷酸钠还原氯化镍制得了纯净的镍-磷非晶合金超细微粒。考察了一些反应条件如反应时间、添加剂和反应系统的初始pH值等对目的产物收率和物性的影响。对产物的基本物性进行了表征。在反应系统初始pH值为11时,可以制得平均粒度约150nm,元素分布和拓扑结构相对均匀的镍-磷非晶合金超细微粒。

**关键词** [镍合金](#) [元素分布](#) [氯化镍](#) [磷合金](#) [非晶](#) [物理性质](#) [拓扑结构](#) [超细微粒](#) [亚磷酸钠](#)

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## A study on the preparation and properties of amorphous Ni-P ultrafine particles

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**Abstract** Amorphous Ni-P ultrafine particles with no Ni(OH)<sub>2</sub> as an impurity were prepared by using a chem. reduction method, i.e. by reduction of aqueous solns. of NiCl<sub>2</sub> and NaH<sub>2</sub>PO<sub>2</sub>. Among factors such as the initial pH value of the reaction system, additives, and reaction time, the initial pH is the most important factor in determining the yield and the properties of the products. The products were characterized by x-ray diffraction, XPS, SEM, TEM, and DSC. With an initial pH of 11, amorphous Ni-P ultrafine particles with the average diameter of ~150 nm and relatively homogeneous chem. and topol. distribution were obtained.

**Key words** [NICKEL ALLOYS](#) [DISTRIBUTION OF ELEMENT](#) [NICKEL CHLORIDE](#) [PHOSPHORUS ALLOYS](#) [AMORPHOUS](#) [PHYSICAL PROPERTIES](#)

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