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## 张亚非教授课题组制备出“纳米圣诞树晶体” [图]

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日前,《晶体工程通讯》(CrystEngComm)报道了上海交大张亚非教授课题组的一项研究成果,课题组制备出一种形状像圣诞树一样的纳米晶体。该晶体是通过乙二醇溶液电解的方法制备的Ni树枝晶,主干长约10 μm,有序的分枝长约0.5-1.5 μm,厚度约为210nm。Ni树枝晶的结构和形貌能够通过调节实验参数(前躯体浓度、电解电压、反应温度)来控制。

### December Crystal Clear: A Christmas Crystal

21 Dec 2011

By Matthew Cude, Development Editor.



This month's very festive Crystal Clear looks surprisingly like a Christmas tree!

In fact this is a dendritic nickel nanocrystal synthesised by Zhang *et al.* using a simple electrolytic process in ethylene glycol solution. The microstructures have trunks of around 10 μm with ordered branches approximately 0.5-1.5 μm long and a thickness of 210 nm. The authors found they were able to control the morphology of the structures by adjusting the experimental conditions such as precursor concentration, voltage and the temperature of the reaction.

Designing nano-structures is an area of great interest as the size and shape can significantly affect the properties, in this instance it was found that compared with bulk Ni the Ni dendritic crystals exhibited a decreased saturation magnetism but an enhanced coercivity.

You can find out more about their work by reading the advance article in *CrystEngComm* which is free to access for 4 weeks.

Electrolytic approach towards the controllable synthesis of symmetric, hierarchical, and highly ordered nickel dendritic crystals

Jian Wang, Liangming Wei, Liying Zhang, Yafei Zhang and Chuanhai Jiang  
*CrystEngComm*, 2012, Advance Article  
DOI: 10.1039/C1CE06066J, Paper

英国皇家化学会Matthew Cude针对该成果撰写的评论 (<http://blogs.rsc.org/ce/>)

纳米晶研制中最重要的是尺寸和形状的控制,这次合成的Ni树枝晶与块体Ni金属的磁性相比矫顽力得到了很大提高。具体的论文见: Electrolytic approach towards the controllable synthesis of symmetric, hierarchical, and highly ordered nickel dendritic crystals, *CrystEngComm*, 2012, Advance Article, DOI: 10.1039/C1CE06066J。

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