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摘要：电爆炸方法是一种合成纳米材料的高效方法。合成的纳米材料具有高内能，部分材料的纳米晶呈现高温高压相等特点和微晶内部具有极高的缺陷密度（位错、空穴、孪晶等）。本文介绍两种不同的放电方法：采用金属丝放电合成纳米Al粉和纳米Cu粉，通过扫描电镜分析其形貌为球形。铝粉颗粒粒度分布在10-100 nm，平均尺寸在30nm；铜粉颗粒粒度分布在10-200 nm，平均尺寸为50nm。用液体中尖端放电方法，分别用二甲基硅油和六甲基二硅烷为前驱物合成SiC纳米半导体颗粒，其粒子直径分别为，所合成的纳米SiC具有优良的微波吸收性能。

关键词：电爆炸,微波吸收

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Synthesis of nanomaterials by electric explosion

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Abstract: Electric explosion is an effective technique to synthesize nanomaterials. The material that was synthesized has high inner-energy, high pressure and high temperature phase, and high density of defects (dislocations, cavity, twinned crystal). In this work, Al nanoparticles and Cu nanoparticles were synthesized by electric method. The size of Al nanoparticles is 10-100 nm and its average size is 30 nm. The size of Cu nanoparticles is 10-200 nm and its average size is 50 nm. And also, the SiC nanoparticles were synthesized using Dimethyl silicone oil (DOS) and Hexamethyldisilane (HMT) as precursor. The average size is 5-10nm and 4-7nm respectively. The synthesized SiC nanoparticles have a good property of microwave absorption.

Key words: β -SiC, Electric explosion, β -SiC, Microwave absorption【大 中 小】 [[关闭窗口](#)]