
氮化硼的结构和性能

摘 要

随着科技的发展，电子设备越来越细小化、集成化和智能化。电子设备在工作时，由于电子元件的高度集成和散热能力有限，产生的大量热量无法及时散发出去。这对电子设备的正常工作和寿命产生极大影响。国内外科研人员对散热材料进行大量的探索和试验。电子设备在现代社会中有重大作用，解决电子设备散热问题有利于社会进步。本文将六方氮化硼（h-BN）分散在 N，N-二甲基甲酰胺（DMF）中，通过超声处理，离心等一系列处理得到 h-BN/DMF 混合物；再将硝酸银（AgNO₃）加到 h-BN/DMF 混合物中搅拌并静置；最后过滤洗涤制备出氮化硼-银（h-BN/Ag）功能杂化粒子。将高分子材料和氮化硼-银混杂粒子采用直接共混的方式进行复合，获得复合材料，分析测试复合材料的结构与性能。

关键词：氮化硼；银；混杂粒子；复合材料

Abstract

With the development of science and technology, electronic equipment is becoming more and more small, integrated and intelligent. When electronic equipment is working, due to the high integration of electronic components and limited heat dissipation capacity, a lot of heat generated cannot be emitted in time. This has a great impact on the normal operation and life of electronic equipment. Researchers at home and abroad have done a lot of exploration and experiments on heat dissipation materials. Electronic equipment plays an important role in modern society. Solving the problem of heat dissipation of electronic equipment is conducive to social progress. In this paper, the hexagonal boron nitride (h-BN) was dispersed in N, N-dimethylformamide (DMF), and the mixture of h-BN / DMF was obtained by ultrasonic treatment and centrifugation. Then silver nitrate (AgNO_3) was added to the mixture of h-BN / DMF for stirring and standing. Finally, the functional hybrid particles of boron nitride silver (h-BN/Ag) were prepared by filtration washing. The polymer material and boron nitride silver hybrid particles were directly blended to obtain the composite, and the structure and properties of the composite were analyzed and tested.

Key Words; BN; Ag; Hybrid particles; Composite materials

目 录

第 1 章 绪论	3
1.1 研究背景及意义	3
1.2 氮化硼的结构和性能	3
1.2.1 氮化硼的结构	3
1.2.2 氮化硼的性能	5
1.3 氮化硼纳米片制备方法	7
1.3.1 机械法	8
1.3.2 液相剥离法	8
1.3.3 化学剥离法	9
1.3.4 化学气相沉积法	10
1.4 氮化硼/聚合物导热复合材料	10
1.4.1 导热原理	10
1.4.2 提高高分子材料导热性能的研究方法	11
1.4.3 氮化硼形态对复合材料导热性能的作用	12
1.4.4 氮化硼表面改性对复合材料导热性能的影响	12
1.4.5 氮化硼表面涂覆对复合材料导热性能的影响	13
1.4.6 氮化硼杂化对复合材料导热性能的影响	14
1.5 研究内容	14
1.5.1 氮化硼-银混杂粒子的构筑	14
1.5.2 BN-Ag/环氧树脂复合材料的制备与特性研究	14
第 2 章 实验部分	16
2.1 实验材料和仪器	16
2.2 制备流程	17
2.2.1 氮化硼-银杂化粒子的制备	17
2.2.2 BN-Ag/环氧树脂导热复合材料的制备	18
2.3 BN-Ag/环氧树脂复合材料的性能测试	18
2.3.1 BN-Ag/环氧树脂复合材料导热性能的测试	18
2.3.2 BN-Ag/环氧树脂复合材料介电性能的测试	18

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