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Patent Search

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Abstract:

FREE STANDING POLYMER COMPOSITE FILM FOR ELECTROMAGNETIC INTERFERENCE SHIELDING AND PROCESS FOR PREPARATION THEREOF The present invention is directed to an electromagnetic interference shielding composite and a free standing electromagnetic interference shielding film produced thereof. More particularly, the present invention relates to a process for the preparation of an electromagnetic interference shielding composite film by solvent casting method. The present invention advantageously provides an electromagnetic interference shielding composite being lightweight, flexible, economic, and ease in processing than metal based composites. Further, the present invention provides an electromagnetic interference shielding composite film with high electrical conductivity and high shielding effectiveness.

Complete Specification

, Description:FIELD OF THE INVENTION

The present invention is directed to an electromagnetic interference shielding composite and a free standing electromagnetic interference shielding film produced thereof. More particularly, the present invention relates to a process for the preparation of an electromagnetic interference shielding composite by solvent casting method. The present invention advantageously provides an electromagnetic interference shielding composite film being lightweight, flexible, economic, and ease in processing than metal based composite film. Further, the present invention provides an electromagnetic interference shielding film with high electrical conductivity and high shielding effectiveness. BACKGROUND OF THE INVENTION

Electromagnetic interference (EMI) shielding materials are very important to avoid unwanted electromagnetic radiations from different electronic devices which are working under high frequency range of 8-12 GHz (X-band). EMI is defined as the disturbance produced from the electronic devices when it is in the vicinity of electromagnetic field in RF spectrum (300 GHz to as low as 9 KHz) caused by nature or other electronic devices. EMI has become a serious issue in modern society due to the development of electronic and electrical industries and considered as a novel kind of pollution. EMI is not only harmful to the sensitive electronic devices but also harmful to human health and causes many diseases such as leukemia, miscarriages, and breast cancer with continuous exposure to electromagnetic radiations. An effective shielding is required to save society from these harmful radiations. An example of the effect of EMI from everyday life is the noise distortion induced in a conference room wireless microphone due to the signal from a mobile phone. Due to the EMI problems, mobile phone usage is prohibited inside the hospitals. These problems necessitate the development of good high performance EMI shield which is considered as a barrier for transmission of EMI radiations.

In the past years, metal shrouds are used for EMI shielding applications due to their high electrical conductivity. The electromagnetic waves are reflected from these types of

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