



Journal of Macromolecular Science, Part B >

Physics

Volume 48, 2009 - Issue 6

94 | 7

Views | CrossRef citations to date | Altmetric

Original Articles

The Construction of Sandbag Microstructure in Polyamide 6/Ethylene-Propylene-Diene Terpolymer/Nanometer Calcium Carbonate Ternary Composite

Xu Wang, Xiao-Dong Wang & Xiang-Bin Xu

Pages 1212-1221 | Received 01 Nov 2008, Accepted 05 Apr 2009, Published online: 03 Nov 2009

Cite this article <https://doi.org/10.1080/00222340903276881>

Sample our
Physical Sciences
Journals



>> [Sign in here](#) to start your access
to the latest two volumes for 14 days

Full Article

Figures & data

References

Citations

Metrics

Reprints & Permissions

Read this article

Share

Abstract

A sandbag microstructure was constructed in Polyamide 6(PA6)/ethylene-propylene-diene terpolymer (EPDM)/nanometer calcium carbonate (nano-CaCO₃) ternary composites by the addition of maleinated EPDM (EPDM-g-MA) to reduce the interfacial tension between EPDM and PA6 and EPDM and nano-CaCO₃. Scanning electron microscopy (SEM) observation and differential scanning calorimetry (DSC) analysis revealed that the microstructure of the ternary composites evolved from the initial separated EPDM and nano-CaCO₃ dispersion structure to the sandbag structure and finally to the separated dispersion structure again with the increase of EPDM-g-MA

content in the elastomer phase. The mechanical results showed the composites with the sandbag microstructure exhibited excellent toughness and stiffness.

Keywords:

EPDM-g-MA

interface tension

nanoparticle

PA6

sandbag microstructure

ternary composite

Acknowledgments

The authors gratefully acknowledge the financial support of this work by the Nature Science Foundation of China (Contract Number: 50573067).



Related research i

People also read

Recommended articles

Cited by
7

Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources
by email

 Sign me up

  

  

Copyright © 2026 Informa UK Limited Privacy policy Cookies Terms & conditions

Accessibility



Registered in England & Wales No. 01072954
5 Howick Place | London | SW1P 1WG