

Nanomodified organic-inorganic polymeric binders for polymer building materials

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2018 Trans Tech Publications, Switzerland. Advances in the creation of new polymeric composites based on polyvinyl (PVC) with a specified range of technological and operational properties contribute to their expansion in the form of Viniplastov, Plasticates, Plasticsols in the construction industry. At present, PVC provides about 70% of the construction-oriented plastics market. It occupies third place after polyethylene and polypropylene the volume of consumption among industrial polymers, but with the ability to modify properties and the large number of compositions and articles of various functional (from... rubbery to tough shockproof) exceed all thermoplastic large polymers.

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Keywords

Bituminous mineral powder, Ground glauconitic sand, Nanomodification PVC, Organo-inorganic fillers, Polymeric composites

References

- [1] Nizamov R. Multifunctional fillers for the chloride of the building/construction tracks. *Materials*, 7 (2006), 68-70
- [2] R. Galeev, Abdrakhmanova L. Architectural control of construction materials with application of made wastes/AIP Conference Proceedings, 1698 (2016), 070021. 1-070021. 8
- [3] Galeev R., Abdrakhmanova L. A., Nizamov R. Expanded perlite Sand: Features of modification of chloride compositions/News Kgaus, 3 (2016), 166-171
- [4] Abdrakhmanova, L. A. Nanomodifikatory for building materials based on linear and netted polymers//Construction materials, 7 (2011), 61-63
- [5] Galeev R. R., Abdrachmanova L. A. PVCL polyfunctional Disperse Fillers Based on technogenic Ram materials/high-tech in chemical engineering-2014/Zwenigorod (2014), 256
- [6] Ashrapov A. H., Abdrakhmanova Los, Nizamov R., Hozin V. G. Study of PVC compositions with carbon nanotubes/Scientific Internet Journal of Nanotechnology in Construction, 3 (2011), 13-24
- [7] Vladimir Masjurov, S. Attorney, P. G. E. D. Yegorov Lebedev Study of the effects of the fill on the properties of PVC compositions/Plastic masses, 2 (2005), 44-45
- [8] Hess, W. M. Product performance and Carbon Black Dispersion/W. M. Hess, J. Wiedenhaefer//Rubber World, 6 (1982), 15-27
- [9] Blake, R. Reinforcement of poly (vinyl chloride) and polystyrene using chlorinated polypropylene grafted carbon nanotubes/R. Blake, J. N. Coleman, Ph. Byrne, J. E. McCarthy, T. S. Perova, W. J. Blau, A. Fonseca, J. B. Nagy, Y. K. Gun'ko//Journal of Materials Chemistry, 16 (2006), 4206-4213
- [10] Guojian, W. Study of SMA Graft modified MWNT/PVC composite materials/W. Guojian, Q. Zehua, L. Lin, S. Quan, G. Jianlong/Materials Science and Engineering, 472 (2008), 136-139

- [11] Mamunya, Y. Electrical and thermophysical behaviour of PVC-mwcnt nanocomposites/, A. Boudenne, N. Lebovka, L. IBOs, Y. Candau, M. Lisunova//Composites Science and Technology, 9 (2008), 1981-1988
- [12] Bai, C. Nanoscience and Technology/C. Bai, S. Xie, X. Zhu. Solid State Phenomena, 121-123 (2007), 1459-1462
- [13] Benderly, D. PVC nanocomposites-nanoclay chemistry and performance/D. Benderly, F. Osorio, L. Wouter//Journal of Vinyl and Additive Technology, 14 (2008), 155-162
- [14] PVC-Clay nanocomposites: Preparation, thermal and mechanical properties/D. Wang, D. Parlow, Q. Yao, C. A. Wilkie//Journal Vinyl & Additive Technology, 7 (2001), 203-213
- [15] Whose, C. B. Preparation and characterization of poly (vinyl chloride) calcium carbonate nanocomposites via melt intercalation/C. B. Whose, U. R. Kapadi, D. G. Hundiwale, P. P. Mahulikar//Journal of material science, 44 (2009), 3118-3124
- [16] Zeng, X. F Influence of the diameter of CaCO particles on the mechanical and rheological properties of PVC composites/X. F. Zeng, W. Y. Wang, G. Q. Wang, J. F. Chen//Journal of material science, 43 (2008), 3505-3509
- [17] Guzeev, B. To the structure of PVC-based composition and dimensional calcium carbonate/Vladimir Guzeev, L. A. Schulatkina, ETC., L. I. Batueva///Plastic mass, 8 (2007), 14-17
- [18] Zhang, L. Mechanical Properties of PVC/nano-CaCO composites/L. Zhang, X. Chen, C. Mahulikar//Journal of material science, 44 (2009), 3118-3124
- [19] Bakar, A. A. Effects of nano-precipitated calcium carbonate about mechanical properties of PVC-U and PVC-uacrylic blend/A. A. Bakar, N. M. Rosli//Journal Teknologi, 34 (2006), 83-93
- [20] Afashagova, Z. H. Fractal model for improving plasticity nanocomposites chloride/calcium carbonate/Z. H. Afashagova, G. W. A. H. Goats Malamатов//International Journal of Applied and Fundamental studies, 3 (2009), 38-42