

Doppler broadening of the annihilation line study of organic-inorganic hybrid ureasil-based composites

Kavetsky T., Šauša O., Petkova T., Boev V., Petkov P., Kukhta A., Stepanov A.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© Springer Science+Business Media Dordrecht 2015. The organic-inorganic hybrid ureasil-based composites, containing polyether chains covalently linked to a silica framework through urea bridges, referred as ureasilicates or ureasils, and semiconducting As₂S₃ clusters, are investigated using Doppler broadening of annihilation line technique. It is established that the Doppler S and W parameters show significant structural difference between the pure ureasil and the As₂S₃-ureasil composites, the effect is more essential as the loading fraction of As₂S₃ increases. The new Doppler broadening results obtained in this work are found to be in consistent with the earlier reported results of positron annihilation lifetime measurements of the same materials.

http://dx.doi.org/10.1007/978-94-017-9697-2_9

Keywords

Annihilation line study, Organic-inorganic composites