

Search for positron trapping at quantum-dot like Cu nano particles on the surface of Fe using positron annihilation induced auger electron spectroscopy (PAES)

Nadesalingam M., Kim S., Fazleev N., Fry J., Nagai Y., Hasegawa M., Weiss A.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© (2004) Trans Tech Publications, Switzerland. This paper presents preliminary results of a search for evidence of trapping of positrons at quantum-dot like particles of Cu at the surface of Fe using positron annihilation induced Auger electron spectroscopy. In PAES energetic electron emission results from Auger transitions initiated by annihilation of core electrons with positrons trapped in an image-potential well at the surface. The further localization of positrons at Cu aggregates at the Fe surface should be signaled by a sharp enhancement of the Cu PAES intensities. Preliminary studies of PAES intensities as a function of the surface concentration of Cu at an Fe alloy surface provide evidence for such an enhancement.

<http://dx.doi.org/10.4028/www.scientific.net/MSF.445-446.156>

Keywords

Alloy, Annihilation, Positrons, Surface