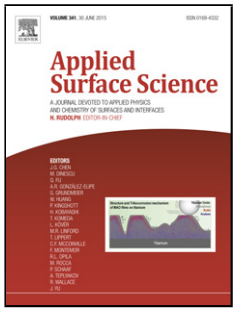


Title: Sn-loss effect in a Sn-implanted a-SiO_2 host-matrix after thermal annealing: A combined XPS, PL, and DFT study

Author: D.A. Zatsepin A.F. Zatsepin D.W. Boukhvalov E.Z. Kurmaev N.V. Gavrilov

PII: S0169-4332(16)00163-X
DOI: http://dx.doi.org/doi:10.1016/j.apsusc.2016.01.126
Reference: APSUSC 32358

To appear in: *APSUSC*

Received date: 23-11-2015
Revised date: 11-1-2016
Accepted date: 14-1-2016

Please cite this article as: D.A. Zatsepin, A.F. Zatsepin, D.W. Boukhvalov, E.Z. Kurmaev, N.V. Gavrilov, Sn-loss effect in a Sn-implanted a-SiO_2 host-matrix after thermal annealing: A combined XPS, PL, and DFT study, *Applied Surface Science* (2016), http://dx.doi.org/10.1016/j.apsusc.2016.01.126

Sn-loss effect in a Sn-implanted *a*-SiO_2 host-matrix after thermal annealing: A combined XPS, PL, and DFT study

D.A. Zatsepin[1,2], A.F. Zatsepin[2], D.W. Boukhvalov[3,4], E.Z. Kurmaev[1,2], N.V. Gavrilov[5]

[1] *M.N. Miheev Institute of Metal Physics, Russian Academy of Sciences, Ural Branch, 620990 Yekaterinburg, Russia*

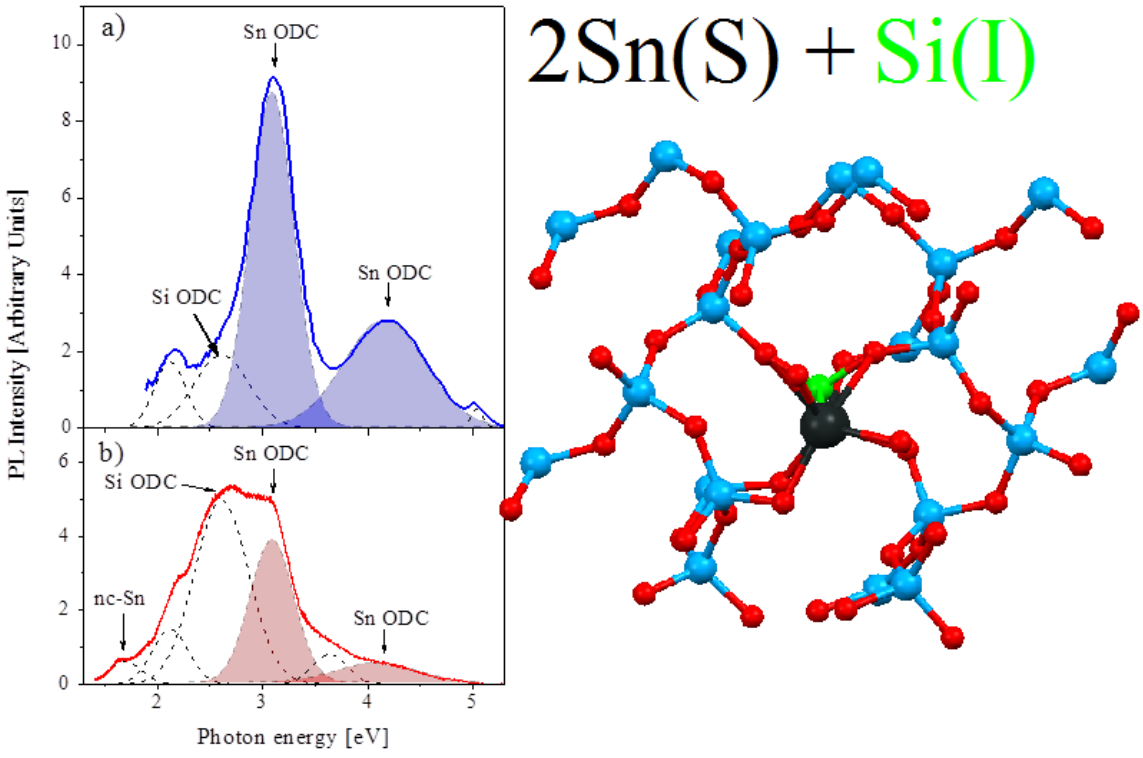
[2] *Institute of Physics and Technology, Ural Federal University, 620002 Yekaterinburg, Russia*

[3] *Department of Chemistry, Hanyang University, 17 Haengdang-dong, Seongdong-gu, Seoul 133-791, Korea*

[4] *Theoretical Physics and Applied Mathematics Department, Ural Federal University, Mira Street 19, 620002 Yekaterinburg, Russia*

[5] *Institute of Electrophysics, Russian Academy of Sciences, Ural Branch, 62990 Yekaterinburg, Russia*

Graphical abstract



Highlight

- Fabrication and annealing of Sn-doped amorphous SiO_2 were studied experimentally and theoretically
- We demonstrate that ions of impurities push ions of host materials in nearest interstitial void
- Annealing provide return of Si-ions in stoichiometric position and segregation of impurities in secondary phase