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New sight at the nature of superconductivity phenomenon: Simple explanation

Vasily Yu Belashov¹ and Yury G Belashov²

¹Kazan Federal University, Russia

²The State Institute of Applied Optics, Kazan, Russia

All existing interpretations of superconductivity are based anyhow on the idea of the charge transfer by free carriers. The exotic conditions of the nondissipative transfer are sought in all cases. But it is possible to explain this phenomenon more simply: by collectivization of the bound valence electrons in a macrobody. So, we postulate the possibility of existence of such state of solid when the valence electrons being in the stationary energy state, get common for all ensemble of atomic remains of solid. In other words, we postulate the possibility of existence of the giant molecule (gimole) with unprobable localization of the bound valence electrons on all atomic remains (i.e. the wave function of each of these electrons is distributed quasiuniform in all space of gimole). That corresponds to the N-multiple exchange degeneracy of the energy levels where N is the atomic remains' number in gimole. So, we propose the explanation of nature of phenomenon which is based on the postulate of possibility of existence of the gimole with unprobable localization of the bound valence electrons on all atomic remains, without drawing of the idea of charge transfer by free carriers and without inventing of various exotic conditions for realization of the nondissipative transfer. Thus, the explanation of the nature of superconductivity phenomenon which is based on the postulate of possibility of existence of the gimole with unprobable localization of the bound valence electrons on all atomic remains is proposed. A way of the experimental testing of our model is shown.

Biography

Vasily Yu Belashov has DSc degree in Physics and Mathematics. His main fields are: theory and simulation of the dynamics of multidimensional nonlinear waves, solitons and vortex structures in plasmas and other dispersive media. Presently, he is Chief Scientist and Professor at the Kazan Federal University. He is author of 320 publications including seven fundamental monographs.

vybelashov@yahoo.com

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