Discussion Column

Registration Code of Publication: 14-37-1-124

Thematic Section: Theoretical Research.

Subsection: Theory of the Structure of Matter. Editorial comment: The article to be published because of its debatable, namely classical approach to the description of the nature of the electronic structure of matter, in particular ionic crystals. Queerness of representations of a new theory of nature of the covalent and ionic bonding, based on the model of the electron ring on the axis of the molecule, is, at first sight, puzzling. Nevertheless, in-depth reading of the material leads to the conclusion that the interpretation may be, at least convenient approximation, which allows, oddly enough, the correct description of the properties, in particular, the dielectric permittivity of ionic crystals. Reviewers of the article believe that a new perspective on the seemingly unshakable foundations of academic theory of the structure of matter allows to initiate a scientific discussion on this topic, which can lead to unexpected results in the fundamental outlook.

Publication is available for discussion in the framework of the on-line Internet conference "Butlerov readings". http://butlerov.com/readings/

Contributed: March 12, 2014.

Molecular structure of ionic crystals

© Alexey A. Potapov

E-mail: aleksey.potapov.icc@gmail.com

Keywords: ionic crystals, dielectric polarization, molecular model.

Abstract

The problem of describing the so-called ionic crystals on the basis of new ideas about the nature of the covalent bond in accordance with the model of the ring on the molecular axis. The substantiation of the molecular structure of "ionic" crystals is presented. Equations are obtained of dielectric polarization, establishing a connection with the elastic the dielectric permittivity orientation and intramolecular ionic polarizabilities, which are actually responsible for the mechanism of polarization of crystals.