

НАУЧНЫЙ ЖУРНАЛ
РУССКОГО ФИЗИЧЕСКОГО ОБЩЕСТВА

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Русское Физическое Общество
SCIENTIFIC JOURNAL
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Dm.I. Mendeleev

**Memorandum on scientific studies Honorary member of the
Russian Physical Society Shpenkov George Petrovich,
approved by Congress XV Russian Physical Society,
Moscow, April 16, 2016**

Our esteemed author G.P. Shpenkov proposed a fundamentally new conceptual basis of physical theories, which do not use postulates, taking only into account the material-ideal essence of the Universe and that it continuously is in a state of the oscillatory-wave motion. Based on this, a new theoretical model, as an alternative to the modern Standard Model (SM), has been developed, and called by the author the Wave Model (WM). The WM is fundamentally different from the SM; it uses dialectical logic and is based on the axiom about the wave nature of all phenomena and objects in Nature. The WM includes (for now, at the initial stage of its development) two main theories concerning the structure and properties of elementary particles and atoms, they are: (1) the Dynamic Model of elementary particles and (2) the Shell-Nodal model of the atomic structure.

The WM brought us closer to solving the age-old fundamental problem of humanity on the structure of matter at the atomic and subatomic levels, revealing previously unknown its key features. Listed below are the *major discoveries* made within the WM by G.P. Shpenkov in this direction.

Discovery of the associated wave nature of the mass of elementary particles (the rest mass does not exist); *discovery* of the wave nature of the electric, magnetic and gravitational charges as the quanta of mass exchange intensity in the corresponding wave fields (stationary fields do not exist in Nature); *discovery* of the nature of electrons, their true value and dimensionality, which, as it turned out, are elementary quanta of the rate of mass exchange; *discovery* of the fundamental frequency of the atomic and subatomic levels and the fundamental wave radius corresponding to this frequency; *discovery* of the wave nature of gravitational field, its fundamental frequency and the fundamental wave gravitational radius corresponding to this frequency; *discovery* of the

size of wave shells of the electron and proton (i.e., their true dimensions); *discovery* of the background spectrum of the hydrogen atom; *discovery* of the physical meaning of availability of the parameter the speed of light in the formula that binds the energy of an elementary particle with its mass; *discovery* of the shell-nodal (nuclear-free, molecule-like) structure of the atoms; *discovery* of the nature of origin (the structure and relative mass) of a complete set of all atomic isotopes (both naturally occurring and also artificially created on accelerators); *discovery* of the original cause of the observed periodicity in properties of chemical elements that for the first time were generalized and formulated by Mendeleev in his Periodic Law; *discovery* of the physical meaning of the fundamental physical constant known as the “fine structure constant”; *discovery* of the Universal Law of Exchange that allowed the description from the one standpoint the nature of three fundamental interactions conventionally accepted in physics □ electromagnetic, gravitational, and strong; *discovery* of the fundamental period-quantum of the Decimal Code of the Universe; *discovery* of anisotropy of two-dimensional hexagonal crystal lattice of graphene.

Discovery of the nature of electric charges allowed to calculate with high precision, for the first time in physics, magnetic moments of the neutron and proton, establish the true dimensionalities of all physical quantities of electromagnetism and other physical quantities related to the dimensionality of the charge; etc.

Russian Physical Society, International (2016)

