Nobel Result in Physics has been Obtained by the Trial and Error Method

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We congratulate the Russian-born scientists, the new Nobel Prize winners in physics, for the important scientific result, which they have obtained by the trial and error method. The graphenes, the carbon films, consist of the carbon atoms only. The Nobel Prize being awarded for the production of carbon films, which are taken from graphite with the help of the Scotch tapes, has kindled interest to these formations. The readers are interested in the theory of microworld, which makes it possible to see the structure of the graphemes by eight orders ($10^{-8}$) of magnitude greater than the most modern microscopes do.

1. Introduction

As it has been announced by TV, the essence of the result is a formation of one-atom-thick carbon films by the method of Scotch tape attachment to graphite and further separation of the graphite films, which have stuck to Scotch tape, with the help of water. High strength and electrical conductivity are the main properties of the carbon films. The new theory of microworld makes it possible to describe this process theoretically.

Let us begin an analysis of the graphenes, which are represented to a man in the form given in Fig. 1, a. Fig. 1, b, is the photo of the graphene, in which the carbon atoms are given in the form of the misty white points with the bonds between them, which form the hexahedrons. What links these white points of the carbon atoms with each other? The electron orbits? How do they form a hexahedron structure of a graphene cell if it is so? The answers to these and many other questions (more than 1500) appear from the new theory of microworld, which was born in Russia [2]. Let us give a small part of these answers.

\[ R_i = \frac{e^2}{4\pi \varepsilon_0 E_i} = \frac{(1.602 \times 10^{-19})^2}{4 \cdot 3.142 \cdot 8.854 \times 10^{-12} \cdot 13.598 \cdot 1.602 \times 10^{-19}} = 1.059 \times 10^{-10} \text{m} \]

Fig. 2. The hydrogen atom: \( e \) is the electron, \( P \) is the proton

If we assume that a size of the proton is 1mm, a size of the electron will be 1 m, and the distance between the proton and the electron in a non-excited hydrogen atom is 100 m. But when the electron of the hydrogen atom establishes a bond with another atom, it retreats from the proton at a greater distance (Table 1).

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<td>9.54</td>
<td>16.94</td>
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Table 1. The hydrogen atom spectrum, the energy bonds \( E_i \) between the proton and the electron and the distances \( R_i \) between them.

The distance between the proton and the electron in the hydrogen atom depends on temperature. An analysis shows that at
the usual temperature the electron establishes the bond with another atom and happens to be between the second and the third energy levels of the atomic state (Table 1). It means that in the molecules the distance between the protons and the electron in the hydrogen atom is increased approximately by an order of magnitude and the factor $10^{-10} m$ adopts a value of $10^{-9} m$.

A formation of any atom begins from a formation of its nucleus. The structures of the graphenes (Fig. 1) form the carbon atoms. Two natural mineral formations, which consist of the carbon atoms and have radically different properties, are known. One writes on paper with the help of graphite and cuts glass with the help of diamond. Why? The new theory of microworld gives a simple answer to this question.

Carbon is the sixth element in Mendeleyev's table. Its nucleus has 6 protons, and the number of the neutrons can be various. 98.90% of the nuclei of the carbon atoms have 6 neutrons, and 1.10% has 7 neutrons. The graphite atoms have flat nuclei (Fig. 3), and the diamond nuclei have spatial nuclei (Fig. 4).

![Fig. 3. Nucleus of the graphite atom](image)

![Fig. 5. The graphite atom](image)

![Fig. 4. Nucleus of the diamond atom](image)

![Fig. 6. The diamond atom](image)

Figs. 3-6. Graphite and diamond atoms

It appears from the new theory of microworld that the protons of the atomic nuclei are arranged on the surface of the nuclei, and the atomic electrons interact with the protons of the nuclei linearly, not orbitally (Figs 5 and 6). As a result, the graphite atom is a flat formation (Fig. 5), and the diamond atom is the limitedly symmetrical spatial formation (Fig. 6).

A flat atom of carbon is responsible for graphite stratified layers. The flat atoms of carbon join together and form flat clusters; an assembly of clusters forms a film. The European experimenters have managed to take photos of $C_6H_6$ cluster, which consists of the flat atoms of carbon and the atoms of hydrogen (Fig. 7).

![Fig. 7. Benzole clusters](image)

Now let us correct the Nobel Prize winners and their experts. Let us pay attention to nebulosity of ray-path projections on the external contour of the photo of the benzole cluster (Fig. 7). These ray-path projections are the hydrogen atoms. Their dimensions are close to a nanodimension ($10^{-9} m$), and the most modern microscope fails to see them. The hydrogen atom consists of the proton and the electron. The theoretical radius of the electron $r_e(\text{theor}) = 2.4263016 \times 10^{-10} m$ differs from the experimental one $r_e(\text{exper}) = 2.4263089 \times 10^{-12} m$ in the sixth sign after the comma. This dimension is 3 orders of magnitude less than the nanodimension ($10^{-9} m$).

Then, the dimension of $0.14 \times 10^{-9} m$ is given in the photo of graphene (Fig. 1, b.). This dimension belongs to the theoretical benzole molecule (Fig. 7), which consists of six flat atoms of carbon. The dimension of each atom is approximately $10^{-8} m$. The dimension of each benzole molecule, which consists of six atoms of carbon, is approximately $10^{-7} m$. Then, the actual size of a distance between two atoms of carbon, which is shown in the photo of graphene $1.4 \times 10^{-10} m$, is approximately $10^{-8} m$. It means that the resolution of the microscope, which took photos of graphene, is by two or three order so magnitude less than the nanodimen-
sion. If the new Nobel Prize winners obtained a carbon one-atom-thick film, there would be no space for a motion of the free electrons, which provide its high electrical conductivity. It appears from this that the Nobel Prize winners separated the carbon films, which were much thicker than one atom, from graphite with the help of Scotch tape. It is natural, because the free electrons, which move between the atomic layers, provide high electrical conductivity of these films. It means that a statement concerning the one-atom-thick carbon film is erroneous.

Fig. 8. Theoretical graphene

Limited symmetry of carbon atoms provides strength of electron bonds between them and, consequently, of the whole graphene film, which fancied structure is given in Fig. 1, and the theoretical structure is given in Fig. 8. Its strength is stipulated by symmetry of bonds between the electrons of the carbon atoms, which are hexahedral contour closed.

2. Conclusion

The above-mentions facts show the certain experimental achievements of the new Nobel Prize winners, which have been obtained by them by the trial and error method, as well as their insufficient understanding of physical essence of their achievements. But they are young, and they have a chance to strengthen their theoretical knowledge by means of mastering the new Russian Theory of Microworld [1, 2].

The above-mentions facts show erroneousness of the orbital motion of the electron in the atom, and the Nobel Committee has an opportunity to apologize before many generations of schoolchildren, students, postgraduate, engineers and scientists for a damage caused by awarding of a series of Nobel prizes in physics, chemistry and astrophysics by mistake, which crippled their scientific potential. The erroneous authority of those prizes did not accelerate scientific progress, but arrested it.

References
