

# Chemical Aspects of Relativity

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**ABSTRACT:** It has been stated that inside atoms and molecules the electrons with complex mass exist and more with the velocity  $v > c$ . So do complex energy levels exist. The ionization of atoms of sodium in the ammonia has been presented as the model of ionization of chemical molecules in an unempty vacuum. The examples of the molecules and the ions have been shown, in which the classic theories overlap on the quantum mechanics. The phenomena have been presented in which the relativistic effects interfere in the chemical structure.

1. The electrons with complex function of angular momentum are loopons. The electrons moving around the closed trajectories in the atoms and in the molecules are loopons, as well.

The molecules can move with the velocity  $v > c$ . There exist analogons of chemical molecules moving with the velocities  $v > c$ .

Electron can move along the polymer chain with the velocity  $v > c$ . It can be either the normal motion or the jump at the other end of the polymer chain.

The quantum states described by complex wave functions are characterized by the velocities  $v > c$  of the electrons existing in them and with the complex mass.

It is so, because the light is described by the complex solution of the Maxwell equations

$$E = E_0 e^{i\omega t} \quad B = B_0 e^{i\omega t}$$

and its absorption is connected with the transition onto the complex energy levels.

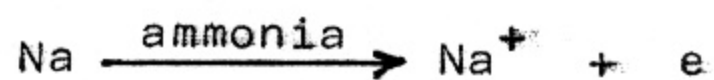
The energy:

$$\mathcal{E} = \mathcal{E}_{\text{real}} + \mathcal{E}_{\text{complex}}$$

$$\mathcal{E} = \int (\alpha E^2 + \beta B^2) dV$$

$dV$  - an element of the 8 - dimensional volume.

2. The ionization of the atoms of the sodium into the sodium ions and electrons:



which takes place in the solutions of ammonia manifests with the solvation of the electrons by the particles of ammonia. It is the model of the ionization of the atoms and the chemical molecules in unempty vacuum. They are the same phenomena, but on the different storeys of the composition.

3. The better dispersion of the positive charge means more stable carbocation. So the classical theory- electrodynamics - interferes with quantum mechanics. The direction of the elimination is determined in two - ring alicyclic compounds. The double bond doesn't arise at the bridge carbon atom, because of the tensions ( see figure 1 )

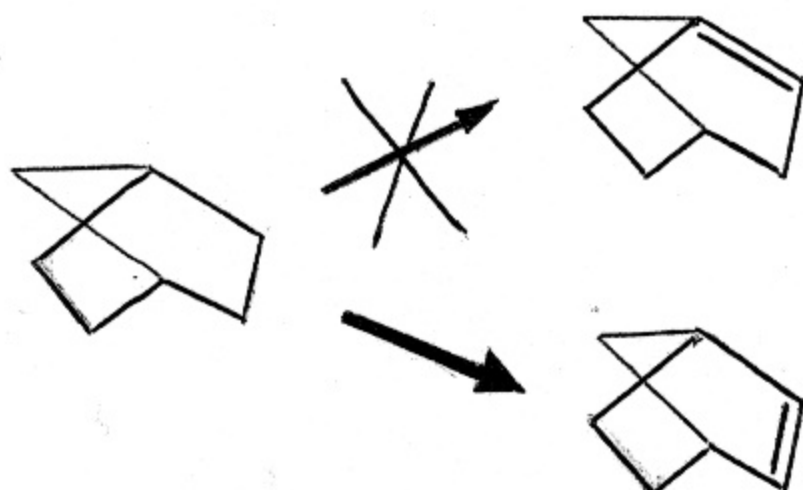


Figure 1

4. It is necessary to take under consideration the effects connected with the curvature of the space-time ( because of the strong interactions manifesting themselves at the small distances together with the gravitational ones ) in the more subtle chemical reactions, especially in the nuclear reactions.

The thermodynamic potential, which implicates the constant of chemical equilibrium and the propulsion force of the reaction, is one of the potentials surely connected with certain generalized potential of interactions.

The ejection of fatty acids with long chain from water can be presented as the attraction of these chains by the hydrophobic forces.

It is an analogy to the conception particle - antiparticle. This analogy proves the existence of one theory containing the thermodynamics ( breaking the hydrogen bonds between the particles of water ) and the theory of the fundamental interactions.

The quantum precession is an analogy of the motion of planets.

It manifests the unity of the classical and the quantum physics implicated by the Dirac-Einstein equation.