EVIDENCE OF THE FORMATION AND DECAY OF GIANT LONG-LIEVED NUCLEAR MOLECULES

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Several self-consistent observations have led to the conclusion that long-lived multi-core systems (nuclear molecules) exist. This conclusion is based on next results:
1. Some even and no add Bi isotopes were observed in the experiment;
2. The large-scale generation of elements in the clusters spontaneously emitted from the bismuth salt samples was found. There was no bismuth in these clusters, but only possible bismuth decay products (carbon, potassium)
3. Bismuth isotopes generation and clusters emission appeared with more that one year delay;
4 Bismuth isotopes generation and clusters emission might be initiated by flash light or alpha irradiation;
5. Emitted clusters had magnet properties;
6. The traces of the long linear structures (nuclear molecules) movement on the Si detector surface were found.
The phenomenological model of the nuclear molecules was suggested.

The aim of the research was to investigate the possibility of obtaining alpha-radioactive ^{210}Po isotope in the saturated water solution of Bi (NO3)3 during electrical field impact (2007 year). The probability of the reaction was reported in [1, 2].

The bismuth isotopes ^{210}Bi, ^{212}Bi, ^{214}Bi and ^{212m1}Bi generation was observed in the experiments with bismuth salts solution (Figure 1. [3-4]). It was detected in some samples of bismuth salts solutions forced by high tension electric field and then dried. Generation of the isotopes was revealed also in case of macroscopic clusters emitted from the sample and settled on the Si detectors gold surface. Run data with best energy resolution is shown in Figure 2. Such effects may be delayed for a year after the electric field impact. Odd isotopes ^{211}Bi and ^{213}Bi were not found that is in contradiction with the individual

neutron absorption by bismuth nucleus model and can be explained in case of the decay of long-lived multi-core systems (nuclear molecules) [4].

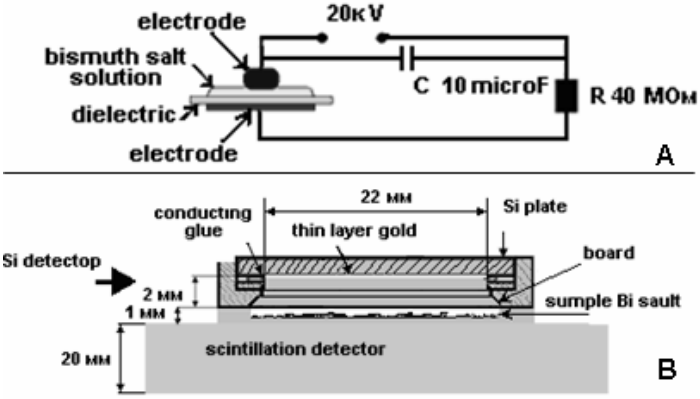

Figure 1. Bismuth salts solution experiment. Sample preparation (A), experimental set (B)

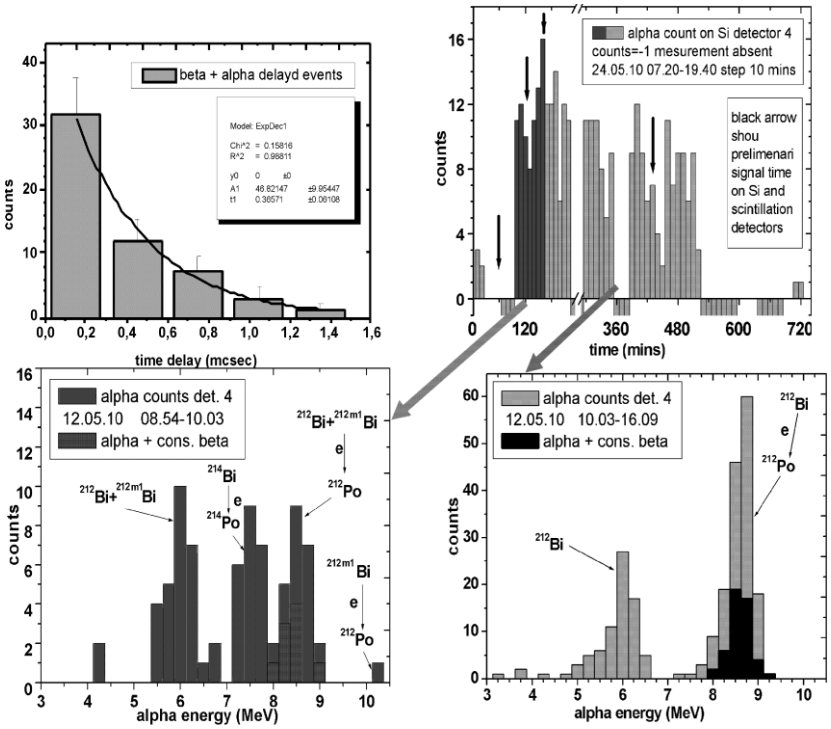

Figure 2. Bi isotopes generation for 7.5 hours exposition in a closed Si detector № 4 on the clusters from sample with nitrate of bismuth clusters brought to the detector due to cumulative emissions.

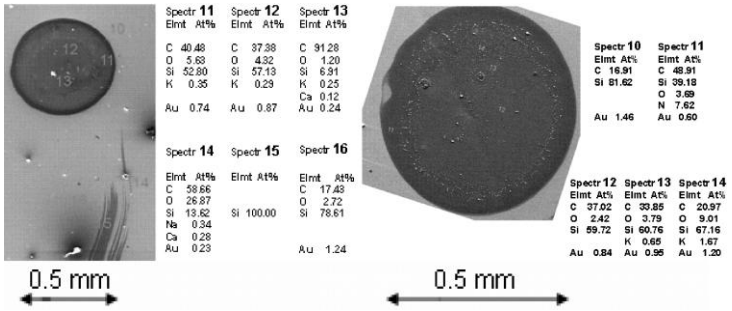

Figure 3. The elemental composition of substances emitted from the sample measured at different points (point size 10 micron).

In the experiment with bismuth nitrate some non-linear topological structures of nuclear molecules (rings, polyhedrons, and balls) were found. The possible structure of the nuclear molecules that was observed in this experiment can be explained with the magnetic beads model. This model is in agreement with model where nuclear molecules are formed from Vigier atoms [5-6] coupled by magnetic moments in a linear thread-like structures. It is assumed that in nuclear molecule some nucleon transfers are possible.

The elemental composition of substances emitted from the sample was radically different from that of the initial bismuth salts. There were found some different elements: carbon (up to 90%), zinc (up to 6%), potassium (up to 2%), calcium (up to 2%), aluminum (up to 5.5%), tin, titanium, and so. Bismuth was completely absent in some craters (the kind of cluster traces) (Figure 3). The magnitude of the nuclear transformations corresponded to the size of the nuclear molecules. Possible formula for bismuth decay in the nuclear molecule system is presented: $83Bi \rightarrow 19K+2(8O) + 8(6C) + 42\,n + 24.7$ MeV.

After the decay neutrons stay in the not decayed parts of the nuclear molecule and bismuth isotopes (^{210}Bi, ^{212}Bi, ^{212m1}Bi, ^{214}Bi) may be generated in case every part consists of only one bismuth nucleus.

Linear structures (no trite explanations) were detected in the experiment

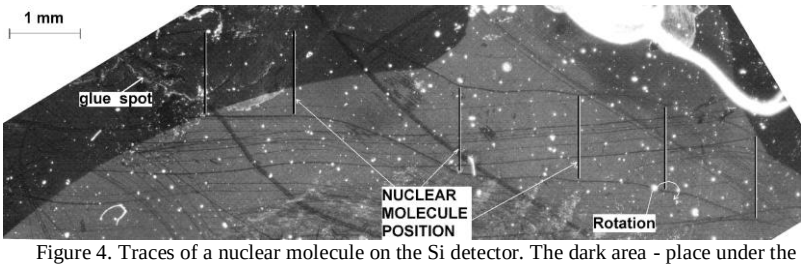

Figure 4. Traces of a nuclear molecule on the Si detector. The dark area - place under the body (a gap of ~ 15 microns).

with bismuth sulfate. Being ejected from the sample they settled on the detector gold surface and sometimes moved along the surface. The structures (nuclear molecules) length was up to 1.5 cm (~ 10^{11} nuclei). They drug the macroscopic clusters from the sample and they scratched the detector surface. The traces on the surface can lead to conclusion that there is nuclear molecule fast rotation about its axis lying along the line (Figure 4). Some nuclear molecules penetrated without resistance into the gap (~ 15 microns) on the edge of the silicon plate that is sometimes filled with dried glue. They went out from the slot after hitting the wall without changing the axis of rotation but the substance deposited on them usually was lost (Figure 5).

A variety of nuclear molecules seems to be comparable with the variety of chemical molecules.

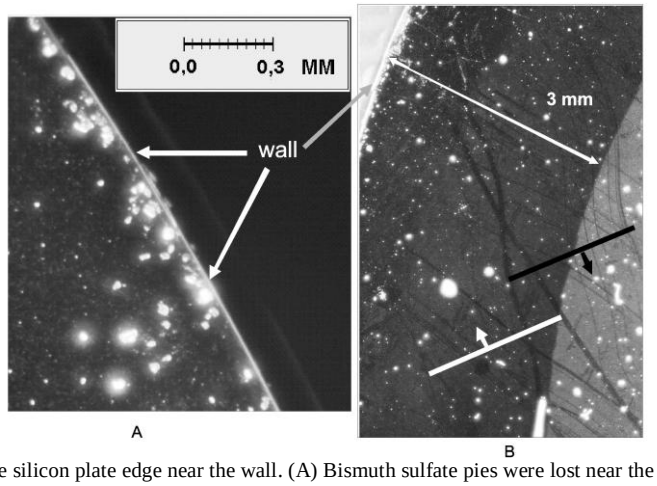

Figure 5. The silicon plate edge near the wall. (A) Bismuth sulfate pies were lost near the wall. (B) The nnuclear molecule has not lost pies of substance after the wall collision (a rear event). The white line – the nuclear molecule passing to the wall. The black line - the nuclear molecule passing from the wall.

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