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Organization, Current Status and Main Results of Russian Research in Cold Nuclear Fusion and Transmutation of Chemical Elements

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We can not help remembering that in the Soviet Union investigations of a number of abnormal phenomena which later were related to the problem of Cold Nuclear Fusion were carried out long before Fleischmann and Pons announced their experiments at the American University of Utah.

At present these kind of research works are widely carried on in Russia despite the absence of any state support and while part of the official scientific community remains skeptical.

In total there are more than 30 groups of scientists engaged in research in this field in Russia, three groups work in this field in Ukraine, and one group in Belarus Republic. About 120 scientists and associates work for those groups. Among those scientists engaged in this field there are 11 theoreticians are developing theoretical problems related to the field.

For the purpose of providing general coordination of those investigations there is Coordination Council on Cold nuclear Fusion that is acting under the leadership of Academician O. M. Nefjodov, Vice-President of the Russian academy of Science. At present the question is under consideration to have this body renamed, "Coordination Council on Abnormal Phenomena and Processes in physical/chemical mediums." Under the affiliation of this Council a permanent scientific Seminar holds sessions monthly. Reports and works about the results of current works of Russian scientists are regularly presented and discussed at the Seminars. The information about the works and events relating to the Council are regularly published in the Proceedings of the Russian Physical Society and the Nuclear Society of Russia.

Annually there are held Russian National Conferences on Cold Nuclear transmutations of Chemical Elements. As a rule some 35-40 participants attend those Conferences who give presentations. So far 9 such conferences have taken place. In October 2002 the 10th Annual Conference of nuclear Transmutation and Ball Lightning will be held. Scientists from abroad also take part in these Conferences, in particular scientists from USA, Japan, Italy, Great Britain, the Republic of Korea, Ukraine, Belarus and Moldova participated. The reports presented to the Conferences are regularly published in Proceedings. The articles by Russian scientists are being published in the Proceedings of International Conferences on Cold Fusion, in foreign scientific journals, in the Preprints of Russian Scientific Centers a Research Institutes. Totally during last 10 years more than 330 books, articles and reports by Russian scientists were published. Twelve Russian patents relating to the problems of Cold Fusion problems have been registered or are being pended.

Analysis of the research results of Russian scientists allows to conclude that Russian scientists engaged! Cold Fusion Problem embrace actually all known approaches to the problem and in a number of cases implement unique methods that result in obtaining pretty valuable scientific information which open favorable perspectives of commercial implementations.

The Report to the Conference further will contain the list of Russian scientific groups engaged in cold fusion investigations. The List will contain the names of the Group Leaders, the number of scientists involved, the number of publications made and patents received by each group, the methods of experimentation implemented by the group and the main results obtained so far. The information included in the Presentation will give a full understanding of the current status of Russian Research in this field.

1. Leader of the group: Yu. N. Bazhutov, PhD in Technical Sciences

Number of associates involved: 5

Name of the firm or place of work (affiliation): Moscow Technical University (MADI), city Moscow

Number of publications related: 40 including 7 reports at the International Conferences

Methods of research: Experimental - plasma electrolysis, ultrasound cavitation, hydrodynamic cavitation erzion catalysis

Main results registered: 100% reproducibility has been demonstrated for the effect of transmutation nuclei accompanied with registration of neutrons, gamma-quanta and Tritium. Technical proposals for designing a source of thermal energy and an installation for processing radio waste have been developed.

An Erzion Model of initiating and catalysis of cold nuclear fusion phenomenon has been developed and proved a reality.

2. Leader of the group: A. B. Karabut, PhD in Technical Sciences

Number of associates involved: 5

Name of the firm or place of work (affiliation): Scientific and Industrial Association "LUCH", town of Podolsk (Moscow Region); Moscow Engineering Physical Institute, city of Moscow

Number of publications related: 10 including 7 reports at the International Conferences

Methods of research: Experimental - calorimetry and nuclear physical diagnostics of the systems with high current glow discharge

Main results registered: generation of excess heat has been determined, x-rays disclosed, heavy charged particles detected. Generation of stable and radioactive isotopes has been observed.

3. Leader of the group: S. A. Tsvetkov, PhD in Technical Sciences

Number of associates involved: 1

Name of the firm or place of work (affiliation): City Administration, town of Zarechny, Sverdlovsk Region, the Urals Area

Number of publications related: 20 including 7 reports at the International Conferences and 1 patent registered

Methods of research: Experimental - saturation of Ti with Deuterium from gas phase at thermal influence accompanied

Main results registered: Neutrons and gammas have been registered. The amount of excess heat generated has been registered at the level of 28 kJ/g

4. Leader of the group: V. Yu. Velikhodny, PhD in Technical Sciences

Number of associates involved: 2

Name of the firm or place of work (affiliation): Research institute of High Temperatures, Russian Academy of Sciences, city of Moscow;

Research Institute of Applied Mechanics, Russian Academy of Sciences, Moscow city

Number of publications related: 8

Methods of research: Experimental - investigations of the processes of interactions of clusters of molecules of heavy water with deuterated solid matter.

Investigations of the processes of generating excess heat in vortex heaters

Main results registered: There has been disclosed the effect of cluster fusion of the light nuclei of deuterium resulting in high output of the products of d-d reaction, provided the size of the cluster is increased up to 1000 molecules.

There has been developed theoretical explanation for the phenomenon.

There has been proposed a method for realization of the process of fusion of light nuclei with a rate close to the maximum possible. It has been shown that in the vortex heaters the output of the excess heat generated depends upon the direction of flow rotation.

5. Leader of the group: K. A. Kaliev, DSc in Chemistry

Number of associates involved: 5

Name of the firm or place of work (affiliation): Research Institute of Electrochemistry, city of Ekaterinburg; "RESONANCE" Co., city of Ekaterinburg

Number of publications related: 5 (2 - at the international Conferences)

Methods of research: Experimental - superelectrolysis with metastable materials as electrodes (oxide sodium vanadium bronzes)

Main results registered: there has been determined generation of significant excess heat; neutron radiation detected with 100% reproducibility.

6. Leader of the group: R. N. Kuzmin, DSc in physics and mathematics

Number of associates involved: 2

Name of the firm or place of work (affiliation): Moscow state university, Division of Physics

Number of publications related: 10 (one report at international Conference)

Methods of research: Experimental - Saturation of Titanium with hydrogen in gas phase and in electrolysis. Registration of nuclear radiations and products of fusion.

Main results registered: Generation of Tritium and availability of neutron radiation have been disclosed.

7. Leader of the group: V. A. Tsarev, DSc in Physics and Mathematics

Number of associates involved: 1

Name of the firm or place of work (affiliation): Institute of Physics of Russian Academy of Sciences, Department of Space Research, Laboratory of Elementary Particles, city of Moscow

Methods of research: Theoretical - investigation of the mechanisms of initiating nuclear reactions of cold fusion

Main results registered: there has been composed a model of initiating nuclear reactions of cold fusion on appearance of microcracks in matter

8. Leader of the group: L. G. Sapogin, DSc in Technical sciences

Number of associates involved: 1

Name of the firm or place of work (affiliation): Moscow State Technical University (MADI), Department of Physics

Number of publications related: 5 (international Conferences)

Methods of research: Theoretical - further development of the Quantum Mechanics

Main results registered: explanation of the phenomenon of cold nuclear fusion has been proposed based upon the newly developed Unitary Quantum Mechanics

9. Leader of the group: V. A. Romadanov

Number of associates involved: 3

Name of the firm or place of work (affiliation): Scientific and Industrial Association "LUCH", town of Podolsk; Scientific Research Center "TENEX" Co., city of Moscow

Number of publications related: 6 (international and Russian National Conferences)

Methods of research: Experimental - investigations with metal-hydrogen systems at glow discharge and thermal excitation

Main results registered: generation of Tritium has been determined depending on the pressure of Hydrogen isotopic mixture. A number of technical designs has been proposed for generation of excess heat.

10. Leader of the group: Ya. B. Scuratnik, PhD in Technical Sciences

Number of associates involved: 3

Name of the firm or place of work (affiliation): Scientific Research center "TENEX" Co., city of Moscow

Number of publications related: 6 (four at the international Conferences)

Methods of research: Experimental - calorimetry at electrolysis of water

Main results registered: excess heat at the level of 10 - 15% has been registered

11. Leader of the group: I. P. Chernov, PhD in Technical Sciences

Number of associates involved: 4

Name of the firm or place of work (affiliation): Tomsk Polytechnic University, city of Tomsk

Number of publications related: 8

Methods of research: Experimental - electrolysis of water with porous cathodes of Titanium and stainless steel in heavy water and Lithium water electrolytes stimulated with vortex and cavitation of the electrolyte at the surface of the cathodes

Main results registered: generation of excess heat at the level of 20% for Titanium and 10% for stainless steel has been disclosed

12. Leader of the group: V. D. Kuznetsov, PhD in Physics and Mathematics

Number of associates involved: 8

Name of the firm or place of work (affiliation): Joint Institute of Nuclear Physics, Group METAX, town of Dubna

Number of publications related: 2

Methods of research: Experimental - investigations of the changes of isotopic composition of metal foils after having them exploited in dielectric liquids. Development of so called Transmutation Physics and designing energy generated devices based upon it.

Main results registered: There has been confirmed the effect of cold transmutation of chemical elements in foil blasted experiments. There has been proposed new explanation of the nature of transmutation radiation. New possibilities of transmuting radioactive isotopes into stable ones have been proposed.

13. Leader of the group: M. I. Solin

Number of associates involved: 2

Name of the firm or place of work (affiliation): JVA Corporation, city of Ekayerinburg

Number of publications related: 3

Methods of research: Experimental - investigation of the structural changes and the processes of energy release in melted Zirconium under bombardment with electrons.

Main results registered: There has been discovered release of excess heat. There has been determined availability of the products of nuclear synthesis in ingots of Zirconium after melting the initial metal. There has been proposed to use the process of electron melting for generating thermal and electrical energy. The method has been patented in Russia. The project has been supported by the Russian Foundation of Fundamental Research.

14. Leader of the group: F. M. Kanarev, DSc in Technical Sciences

Number of associates involved: 3

Name of the firm or place of work (affiliation): Cuban State Agrarian University, joint stock company "Neoenergy", city of Krasnodar

Number of publications related: 30 books and articles, 6 patents

Methods of research: Experimental - investigations of plasma processes in electrolysis of water, implementation of instrumental methods for registering the products of electrolysis.

Theoretical - development of new principles of formatting structure of nuclei of chemical elements.

Main results registered: Excess heat generation has been registered at the efficiency of 200%. There has been established decreasing 10 fold energy consumption for generating hydrogen out of water as compared to regular electrolysis. The total efficiency of the system (including the energy released with hydrogen) constitutes 1000%.

Theoretical - there has been developed a new principle of formatting the structure of nuclei of chemical elements and proposed explanation of the phenomena discovered.

15. Leader of the group: F. M. Kanarev, DSc in Technical Sciences

Number of associates involved: 6

Name of the firm or place of work (affiliation): Automobile Works, city of Toljatti

Number of publications related: 1

Methods of research: Experimental - investigations of the processes of generating hydrogen at plasma electrical dissociation of water and the likely implementation of the technology in car designing and manufacturing.

Main results registered: There has been designed an experimental generator of hydrogen to be used in cars.

16. Leader of the group: I. V. Gorvachev, DSc in Technical Sciences

Number of associates involved: 3

Name of the firm or place of work (affiliation): Russian Research Center “Kurchatov Institute”, State Scientific Enterprise “CONTRTEC”, city of Moscow; State Research Center “Physical Energy Institute”, town of Obninsk

Number of publications related: 7 (including 3 - at the international conferences)

Methods of research: Experimental - investigations of the processes of interactions of radiation with matter at the conditions of transition of the matter into excited state by irradiating it with high energy electrons.

Main results registered: There have been discovered abnormal features of excited media at interactions with gamma-radiation. There have been registered events of transmutation of chemical elements.

17. Leader of the group: A. I. Koldamasov, academician of the International academy of Inventors

Number of associates involved: 2

Name of the firm or place of work (affiliation): Volgodonsk branch of the Russian National Research Institute of Atomic Engineering, Plant “Atomash”, town of Volgodonsk

Number of publications related: 4 articles, two patents

Methods of research: Experimental - investigations of the conditions of sustaining nuclear reactions of fusion in deuterated water under the influence of cavitation

Main results registered: There has been determined a fact of generating excess heat at the level of 2000% as compared to the inlet hydraulic energy. Emission of neutrons has been registered.

18. Leader of the group: D. S. Baranov, PhD in Physics and Mathematics

Number of associates involved: 3

Name of the firm or place of work (affiliation): Research Institute of High Temperatures, Russian Academy of Sciences, city of Moscow

Number of publications related: 10

Methods of research: Experimental - investigations of the methods of initiating nuclear reactions in deuterated dielectric liquid under the conditions of cavitation

Main results registered: There has been determined the fact of generating excess heat and emission of energetic x-radiation.

19. Leader of the group: I. B. Savvatimova, PhD in Technical Sciences

Number of associates involved: 3

Name of the firm or place of work (affiliation): State Scientific and Industrial Association “LUCH”, town of Podolsk

Number of publications related: 30 (6 - at the international conferences)

Methods of research: Experimental - saturation of electrodes (made of Pd, U, V, Ti and alloys) with hydrogen at low current glow discharge. Implementation of mass-spectrometry, alpha-, beta-, and gamma-spectrometry for determination of the products

Main results registered: There have been registered changes in elemental and isotopic composition of the I metals while 100% identity of the measurements is not available. There has been registered the presence of “strange” radiation because of the tracks on x-ray films. There is not any reasonable explanation of the phenomenon.

20. Leader of the group: E. D. Zykov, PhD in Chemical Sciences

Number of associates involved: 14

Name of the firm or place of work (affiliation): Scientific Industrial Enterprise “Ecoservice”, city of Krasnodar

Number of publications related: 11

Methods of research: Experimental - implementation of methods of plasmotronics and film plasma

Main results registered: There has been discovered a new state of matter - “superwater” as a representative of so far unknown “gautodimensional” world.

21. Leader of the group: A. G. Lipson, PhD in Physics and Mathematics

Number of associates involved: 5

Name of the firm or place of work (affiliation): Research Institute of Physical chemistry, Russian Academy of Sciences, city of Moscow.

Number of publications related: 20 including 7 reports at the international conferences

Methods of research: Experimental - electrolysis in heavy water with variations of the structure of Pd as the cathode.

Main results registered: Emission of nuclear radiations has been registered: alpha-particles, protons, x-ray.

22. Leader of the group: V. I. Vysotski, DSc in Physics and Mathematics, A. A. Kornilova, PhD in Physics and Mathematics, I. I. Samoilenko, PhD in Medical and biological sciences

Number of associates involved: 13

Name of the firm or place of work (affiliation): Kiev State university, city of Kiev (Ukraine); Moscow State University, city of Moscow; Research institute of Microbiology, Russian Academy of Medical Sciences, city of Moscow.

Number of publications related: 30 including 4 - at the international conferences.

Methods of research: Experimental and theoretical - investigations of low temperature transmutation of isotopes in growing microbiological media.

Main results registered: There have been discovered optimal conditions of synthesis of light, medium and heavy isotopes in various microbiological environment. 100% reproducibility has been confirmed in synthesis of light and medium isotopes. There has been forecasted and realized for the first time the method of synthesis of rare stable isotope of Ba-134 in a media with light water. For the first time there has been discovered and investigated the effect of catalytic influence of some chemical elements on the process of transmuting isotopes. There has been created a data base for any possible schemes of transmuting elements. Technological schemes of processing and separation of radioactive isotopes in biological systems. There has been developed a theory of no-threshold nuclear synthesis in cold partly ionized gases.

23. Leader of the group: L. I. Urutskoev, PhD in Physics and Mathematics

Number of associates involved: 8

Name of the firm or place of work (affiliation): Russian Research Center “Kurchatov Institute”, State Scientific Unitary Enterprise “RECOM”, city of Moscow.

Number of publications related: 4, two patents

Methods of research: experimental - investigations of radiation effects and transmutation of chemical elements at destroying metal foils in dielectric liquids by electrical blasting the foils. Implementation of the methods of calorimetry, mass-spectrometry, roentgen fluorescent analysis, roentgen-structural analysis, electronic microscopy, nuclear physical methods.

Main results registered: There has been discovered appearance of chemical elements which are not contained in initial materials. Changes in isotopic composition of the metal foils have been registered. There has been detected appearance of corpuscular radiation which is especially sensitive toward magnetic field.

24. Leader of the group: L. I. Kholodov

Number of associates involved: 1

Name of the firm or place of work (affiliation): Barmin Design Bureau of General engineering, city of Moscow

Number of publications related: 4

Methods of research: Theoretical - developing theory of the structure of matter using both electric symmetry of matter and mass and magnetic symmetry in vacuum.

Main results registered: There has been found explanation of the mechanisms of all kinds of interactions. The author managed to unite magnetic and gravitation interactions. Based upon his model of interactions there has been proposed explanation of the phenomena of Cold Nuclear fusion.

25. Leader of the group: N. V. Samsonenko, PhD in Physics and Mathematics

Number of associates involved: 1

Name of the firm or place of work (affiliation): Russian Peoples Friendship University named after P. Lumumba, city of Moscow

Number of publications related: 8 including two - at the international conferences

Methods of research: Theoretical - based upon further development of the Quanta-Mechanical ("electromagnetic") model of Barrat-Vejier for the structure of atoms. Quantum approach towards investigation of the problem of interaction between two and more bodies. Theory of mass neutrinos.

Main results registered: Based upon the model there has been found explanation of the effects of Cold nuclear Fusion. New effects have been predicted with a view to their experimental verification. There have been forecasted the features of neutrino atoms and neutrino matter. The conditions of initiating reactions of cold nuclear fusion by means of neutrinos have been determined.

26. Leader of the group: V. N. Shadrin, PhD in Physics and Mathematics

Number of associates involved: 3

Name of the firm or place of work (affiliation): Siberian Chemical Plant, town of Seversk; Siberian Physical and technical Institute, city of Tomsk.

Number of publications related: 6

Methods of research: Theoretical - based upon auto-oscillating quantum mechanics.

Main results registered: There has been solved the problem about quantum interactions in an ensemble of free particles taking into consideration the understanding about the existence of oscillating forces which is determined by the gradient of de-Boil wave. The author has demonstrated that a quantum system is capable to self arranging thanks to which the particles of the system get into the state of synchronic and synphase motion and the system becomes a source of external coherent quantum field the intensity of which can become sufficient for formation of quasi-bound systems with other quantum atoms while the system itself can be introduced into the zone of resonance.

27. Leader of the group: B. U. Rodionov, DSc in Physics and Mathematics

Number of associates involved: 1

Name of the firm or place of work (affiliation): Moscow Institute of Physical Engineering, city of Moscow

Number of publications related: 12

Methods of research: Theoretical - developing a model of nuclear active threadlike dark matter consisting of fluxes - quark vortex solenoids.

Main results registered: Based upon the proposed model there has been found an explanation of the phenomena of cold nuclear transmutations of nuclei. The author also explained the features of some hypothetical particles such as magnetic monopoles, trassers, torsions, erzions, macroleptons.

28. Leader of the group: V. I. Karjaka, DSc in Physics and Mathematics

Number of associates involved: 5

Name of the firm or place of work (affiliation): Russian Peoples Friendship University, city of Moscow

Number of publications related: 10

Methods of research: Experimental - thermo-cycling of solid samples followed with registration of gamma- and alpha-radiation and neutrons. Re-magnetizing solid samples. Variations in external magnetic field in amplitude, frequency and polarity.

Main results registered: For the first time there have been determined optimal conditions to provide maximum generation of neutrons at changing the polarity of deuterated segnetoelectrics, at thermo-cycling samples of deuterated Pd, and at re-magnetizing deuterated samples of ferromagnetics.

29. Leader of the group: A. S. Rusetski, PhD in Physics and Mathematics

Number of associates involved: 2

Name of the firm or place of work (affiliation): Lebedev Physical Research Institute of Russian Academy of Sciences, city of Moscow.

Number of publications related: 10, 5 reports at the international conferences

Methods of research: Experimental - electrolysis of deuterated heterostructures of Pd/PdO with registration of nuclear radiation. Glow discharge in deuterium with Ti and Pd cathodes. Implementation of preliminary stressed solid samples.

Main results registered: There has been measured the outlet of the products - protons and neutrons from dd-reactions in electrolysis; protons and alpha-particles from Ti and Pd in glow discharge. There has been disclosed emission of long range alpha-particles from the stressed solid samples.

30. Leader of the group: V. F. Zelenski, DSc in Physics and Mathematics, Academician of the Ukrainian Academy of Sciences.

Number of associates involved: 4

Name of the firm or place of work (affiliation): Research Institute of Physics and Techniques, city of Kharkov (Ukraine)

Number of publications related: 15

Methods of research: Experimental - investigations of the processes of interactions of hydrogen isotopes ions with the surface of solids (Pd, Ti) and in the process of saturation with deuterium and releasing the gas out of metals and alloys. Pulse saturation of Pd in deuterated electrolytes.

Main results registered: There has been disclosed and investigated the influence of thermal oscillating upon appearance of abnormal effects at implanting of ions of deuterium into the samples of Pd and Ti. There has been registered presence of excess heat and emission of gamma- and neutron radiation, He-4 and He-3 as the likely products of nuclear reactions.

31. Leader of the group: S. M. Godin, PhD, V. V. Roschin, PhD.

Number of associates involved: 2

Name of the firm or place of work (affiliation): Research Institute of High Temperatures, Russian Academy of Sciences, city of Moscow

Number of publications related: 5

Methods of research: Experimental - investigations of the processes of energy generation in vortex systems with heavy water. Investigations of energy generation in magnetic systems.

Main results registered: Prototypes of energy generating installations have been designed and tested.

To conclude it should be noted once again that a number of the research works carried out by Russian scientific groups can be referred to as original and outstanding discoveries. They open the perspectives of creating commercially usable installations and technologies which promises to open new page in the science of XXI century. Russia is becoming the leader of new physics and energetics.