коэффициенты ОПС используется при выполнении процедур перевода непозиционного кода ПСКВ в позиционную систему счисления, то при проведении сравнительного анализа необходимо учитывать и схемные затраты необходимые для обратного преобразования на основе КТО. Тогда получаем, что для реализации процедуры поиска и локализации ошибки при переводе кода ПСКВ в ПСС на основе позиционной характеристики – нормированный след полинома потребуется:

- для поля $GF(2^3)$ - 49 нейронов;
- для поля $GF(2^4)$ – 137 нейронов;
- для поля $GF(2^5)$ – 400 нейронов.

Результаты решения задачи выбора алгоритма поиска, локализации и исправления ошибки для СП ПСКВ приведены в таблице 2.

Таблица 2. Результаты решения задачи выбора алгоритма поиска, локализации и исправления ошибки для СП ПСКВ

№ п/п	Разрядность СП ПСКВ, бит	Алгоритм реализации процедур
1	7	коэффициенты ОПС
2	15	коэффициенты ОПС
3	31	коэффициенты ОПС

Анализ таблицы показывает, что для СП класса вычетов с двумя контрольными основаниями алгоритм вычисления коэффициентов обобщенной полиадической системы является оптимальным [3]. При этом при дальнейшем увеличении разрядной сетки СП ПСКВ с параллельно-конвейерной организацией вычислений эффективность применения данного алгоритма возрастает.

Таким образом, благодаря отмеченному обстоятельству, применение нейросетевых устройств для локализации и коррекции ошибок, базирующихся на вычислении коэффициентов смешанной системы, является наиболее целесообразным.

СПИСОК ЛИТЕРАТУРЫ

1. Элементы применения компьютерной математики и нейроинформатики/Н.И. Червяков, И.А. Калмыков, В.А. Галкина, Ю.О. Щелкунова, А.А Шилов; Под редакцией Н.И. Червякова.-М.: ФИЗМАТЛИТ,2003.-216с.

2. Долгов А.М. Диагностика устройств, функционирующих в системе остаточных классов.-М.:Радио и связь,1982.-64с.

3. Калмыков И.А., Червяков Н.И., Щелкунова Ю.О., Бережной В.В. Архитектура отказоустойчивой нейронной сети для цифровой обработки сигналов/Нейрокомпьютеры: разработка и применение. №12, 2004, с.51-60.

Новые и возобнавляемые источники энергии

ELECTRONIC SPECTRA OF FREE RADICAL CN AND PROBLEM OF NEW KINDS OF ENERGY

Khalturin V.G.
The Perm state technical university, Perm branch of the Russian Centre of science «Applied Chemistry»

At the end of XX century and the beginning XXI there was a question on crisis in physics. Consequence of it was the energy crisis when contradictions of technological development have become aggravated. On the one hand the Mankind in the field of computer technologies has left on such boundaries and has achieved such successes which it did not expect. Here it is possible to add successes of biology which, in general, not so are significant for XXI century as it should be expected. However, discussion of biology is not included into our plans. On the other hand our aircraft flies on kerosene, our ground transport goes due to combustion of hydrocarbons. Atomic power stations are under construction and plans on their doubling are written. The first thermonuclear installation is under construction. Well it or is bad? Simply the Mankind has dared to appear in impasse in which it has tired out itself.

Before to speak about the further grandiose achievements of Mankind, it is necessary to remind something. The general situation on the Earth at all does not correspond to ambitions of many heads of the advanced countries. It is necessary to result, probably, only a few facts to understand, that means. 800 million person on the Earth live on the verge of starvation (800 million!), almost all Asia and the Arabian world test sharp shortage of potable water already today. In Africa war for wells with water - the usual phenomenon. And, at last, irreconcilable disagreements between the countries, and permanent wars for the most trifling reasons. Efficiency of the United Nations Organization is shown to position of king without kingdom. What to do? In what direction to move? Really we think seriously, what, flying on rockets « with kerosene » fuel, we shall subdue Solar system? Yes never! Already now because of destruction phytoplankton on the Earth there is a shortage of oxygen in 10 billion tons. So - to wait for the nearest collision with a comet that evolution started the way all over again?

For the beginning it is necessary to read articles W. Heisenberg and [1], published in journal of « Successes of physical sciences » for 1976, and then it is necessary to think. There were in the newest history people, for example, academician Vitally Goldansky which tried to analyze a situation and to find of it a way out. In our opinion which we do not thrust to anybody, and we state by way

of the common discussion, development of power in a direction of nuclear physics and even thermonuclear synthesis will get Mankind in the even greater impasse. It is necessary to find that mistake about which spoke W. Heisenberg and to change a vector of an orientation of Human technological development. First, in our opinion, (we especially emphasize it), development of power aside creations of the increasing quantity(amount) of atomic power stations and in the near future, possible creation of thermonuclear installations is not technological break is a scientific failure in development of physics. Impressions from Chernobyl accident are still too fresh. This year validity of a sarcophagus above a reactor expires. But all of us pretend, that have overlooked about it.

The physics always played a role of the locomotive for other sciences - both in the theoretical plan, and in applied. Today in physics crisis. And it emphasize much physics. Means, simply new ideas, and ideas which should be on so much courageous that will shake all World are necessary not. And not only will shake all World, but, most likely, will very strongly affect our morals. As an example it is possible to result such points of an excess in development of a civilization, as, for example, opening of the wave nature of light A. J. Fresnel-ем, opening of nucleus E. Rutherford an ohm, etc.

Certainly, it is impossible to rush to extreme measures. Presence of thermal power stations on the European type should suit quite Mankind at the given stage while there will be a development, development and designing of the interstellar ships and development of new kinds of energy. On it will leave years of 20-30 years. In the Russian oil as it is not necessary to be afraid of impurity of sulfur. Primary results of the newest technologies radically can change a situation. We carry out only primary modelling of process cracking on our model. Results quite encouraging. Thus it is necessary to hasten, but it is extremely cautious. And the main thing, that we wanted to emphasize. The new kind of energy should not be transferred on pipelines or high-voltage electric mains. Simply this energy at us « under foots ». Anomalies in a spectrum of radical CN allow us to understand better the nature of the given phenomenon in the field of physics of electronic spectra of two-nuclear free radicals which, probably, directly are connected to new energy sources and can solve the problem on use of new kinds of energy. But it is necessary to mean, that the case with radical CN is a special case.

Studying of an issue spectrum of violet system of strips of radical CN was carried out by us after studying anomaly in rotary structure of strips Svan of free radical C2. Our task was to reveal absence or presence of similar anomalies in structure of issue spectra of other molecules. Radical CN possessed very big for molecules energy of connection. For radical C2 the temperature predissociation corresponded 6,2 эВ and in degrees it about 7300 K. Working condition to generation of hyperradiation 6900±150 K. (The question is rotary temperature). For free radical CN energy predissociation makes size - 7,75 эВ. In degrees it about 11000 K. In fluorine to carbon plasma at atmospheric pressure we could not come nearer to conditions of formation of extreme conditions for formation of anomalies in electronic spectra of the given radical. Simultaneously with us work with radical CN carried out Kozo Kuchitsu with co-authors [2]. We shall not result all of his work. On one only to radical CN he published not less than 5 works in one year. For creation of adjustable severe constraints of free radical CN it was necessary to develop installation, first of all. Of 10 person we were engaged in all group development of the circuit of installation. At an initial stage we have developed the circuit of bombardment of radical CN slow protons. In institute where we worked, there were fine workshops. Their products surpassed factory on quality. The case with glass blowers was in institute. They served not only us. When somewhere in city there was a problem from their area always addressed by all means to them. But when we have addressed to them with the given project, to their indignation there were no borders. We were left that we shall bombard radical CN and molecule N2 the focused beam of negatively charged atoms of carbon. The circuit of installation is resulted on fig. 2.

The essence of work was, that was used hollow the cathode. Inside hollow the cathode it was inserted carbon glassful with internal diameter of 0,05 m. Taking into account, that carbon and products from it are strong sorbents, we originally filled in internal volume of installation hollow the cathode pure nitrogen (99,9 %), then pumped out air up to pressure 500 Па, included the first cylindrical anode (3 кВ) and in a floor the cathode there was a category. In figure, inside hollow the cathode, plasma is shown by blue color. Warming up hollow the cathode, to be exact carbon, was carried out 8 hours at stable pressure 500 Па. After that inside of a tube pure nitrogen up to atmospheric pressure moved. For other day, having pumped out nitrogen up to pressure 500 Па, and having warmed up the cathode within 1 hour with use of the first cathode, we included натекатель molecular nitrogen, increased откачку air from полого the cathode and submitted potential up to 15 кВ on the second anode. This anode had a water shirt and was we cool water, as well as the cathode. In a point where there should be a collision of the focused beam of atoms of carbon with molecules of nitrogen, there was a focus of a data-acquisition equipment. The point of collision in figure is shown by violet color.

In time, approximately, to equal 30 seconds a quartz window through which light left and got in a data-acquisition equipment, became lightproof because of covering it a thick layer of a cyanic film. We then did not think that is a way of reception thick cyanic films and on their basis it is possible to experiment reception of superfirm materials. (it was earlier supposed, that nitride of carbon will be firmer some diamond). Therefore we have attached to the second anode a petal, length approximately, 0,2 m, i.e. have changed symmetry of an electrostatic field after the second anode. After that we had not to clear a target window of pollution constantly.

For working on such installations it is necessary to take into account, that though the temperature of graphite walls of the cathode did not exceed 600 K, the temperature of electronic gas was about 30000 K and, hence, the cathode was a source of powerful ultra-violet radiation. Therefore in a premise the strong smell of ozone, despite of an intensive extract of air from a premise was always felt.

Further we have started studying spectra of radical CN. Schedules built under the standard formula [3] - the equation 3.6, page 41. First we have reproduced all results Kozo Kuchitsu. In the generalized kind they are resulted on fig. 1. The current is minimal and equal 0,1 And. Division of graphic dependence of the logarithm of intensity from product of quantum numbers (as shown in the schedule, but the name not exact) is well-known since times Geidon and was repeatedly published in the literature. However personally these explanations finally have not convinced me. That part of the schedule which has an abrupt inclination of a straight line has temperature about 600 К, and the flat part of the schedule has temperature 4000 К.

In work [4] the rule of theoretical calculation of factors of Honl-London is given. At spin doublet splitting (page 61) the formula for terms is function of size Y

$$T_{J-(1/2)}(J) = T(Y) \qquad (1)$$

Where Y=A/B. The size And carries the name of a constant of back - orbital interaction. The term is considered normal, if A> 0, and inverse, if And <0. The given formula is fair, as it is underlined in work, for intermediate types of connection Gund - from *a* case and up to *b* case. We shall pay attention to size And we shall consider probable ways of its behavior [5].

In all processes where the big density electronics observed, and these processes are realized as in conditions of an electric arch (low forward temperature electrons), and in the decaying category with hollow the cathode. (I.e. in the conditions described at statement of experiments in the given work), strong influence of electronic gas on a constant of back - orbital interaction will be observed. This influence will be shown from weak indignation before full break of connection of back - orbital interaction. In these conditions it is possible to bring an attention to the question on expediency of use of standard models for the description of distribution of intensity in rotary structure of a spectrum as it is natural, that in conditions of electronic impact the constant of back - orbital interaction cannot correctly describe process. For an explanation of the anomalies observable in a spectrum of radical CN and concerning various character of population of separate groups of levels, it is necessary to note three reasons.

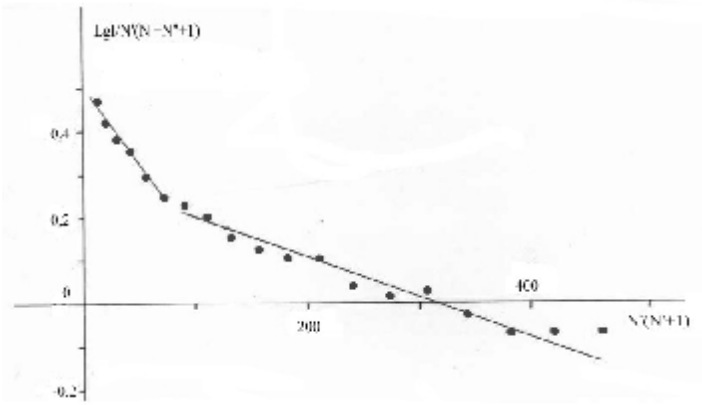

Fig. 1. Hollow the cathode. Radical CN.

First, it is strong dependence of a constant of back - orbital interaction on electronic impact.

Second, nonequilibrium distribution of molecules on rotary levels of the basic electronic condition. Such distribution becomes possible at intensive chemical reactions. In these conditions there is a birth of particles which distribution on power levels does not correspond by Bolzman.

Thirdly, direct settling of condition $B\ ^2\Sigma^+$ of basic condition $X\ ^2\Sigma^+$ by direct electronic impact.

In real conditions existence of anomalies will speak joint action of all three reasons.

However all told concerns only to fig. 1. In the following figures other interpretation is required. All the same it is not the article Kozo Kuchitsu with co-authors having received the schedule similar to a volume which is resulted on fig. 1., has decided to subject radical CN to bombardment by positrons. We had no such opportunity; yes the pulse at atoms of carbon will be more, than at positrons. Therefore, figuratively being expressed, we have gone in the way and have designed and have made unique installation on which it would be possible to receive a lot of rather interesting information on the nature of a matter. Therefore crash of institute and as investigation, laboratories for us, certainly, was tragedy. To make it again very big time both good experts designers and masters on manufacturing the precision equipment is required.

On fig. 2. installation with hollow the cathode, described is resulted earlier.

If in the first case we did not use the second anode with potential 15 кВ two following schedules have been received with use of this anode playing a double role: first it plays a role of a focusing electrostatic lens, and second, it plays a role of the accelerator of the charged particles. Thus irrespective of character of the charged particle, it gives to it for laboratory conditions very big kinetic energy and, hence, gives the big pulse.

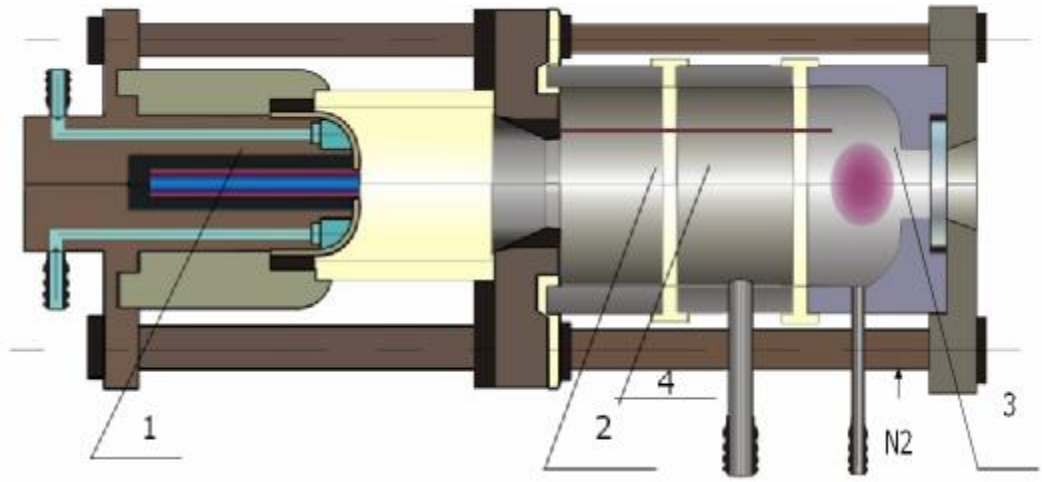

Fig. 2. The Category in a floor the cathode. 1 - hollow the cooled cathode from iron, with liner from graphite. Red color marks the heated up walls of the graphite cathode (600 K), dark blue color marks electronic gas 30000 K; 2 and further - two aluminium cathodes divided fluoroplastic by loose leaves; N2 - натекатель nitrogen in a tube; 3 - a point in which bombardment of molecules of nitrogen or radicals CN is carried out by negatively charged atoms of carbon. Yellow color marks the quartz loose leaf between the first anode and hollow the cathode. 4 - fluoroplastic isolators between anodes and hollow the cathode.

It is necessary to note, that Kozo Kuchitsu with co-authors have not received those results which were received by us. Though I am declined to count, that they have not published them for the reasons which we can guess only.

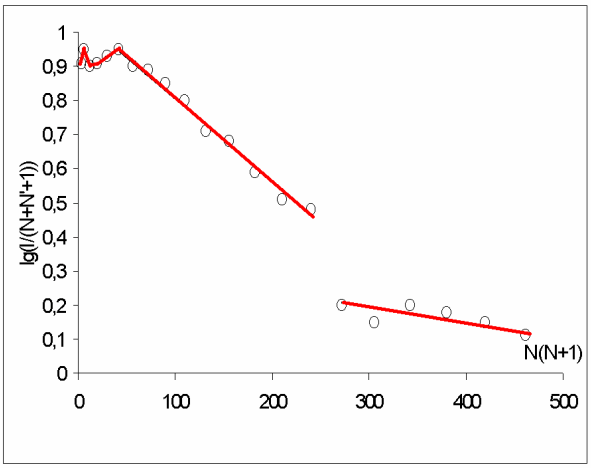

Fig. 3. Break of 2-nd sort in dependence of radical CN

Earlier I wrote, that we have created trial installation for generation of a hyperfield by the common capacity of 120 kw and have tested it in operation and though the result which we expected, has not been received since we have not provided intensive cooling some units of installation and it чрез 20 seconds has turned pile the fused parts making it. But, nevertheless, the put experiment has shown, that installation is efficient.

At increase in the current proceeding open second anode, the picture of schedules varied also. On fig. 3. the schedule when a current of the category open the second anode has come nearer to 0,5 is shown And, character of the schedule has sharply changed.

Division of a curve into a hot and cold zone for a long time is known and is in detail described in the literature. In particular, in works PyIAS (ФИАН) USSR. However, the schedule resulted on rice 3 is published for the first time. If to designate size of break of the schedule on an axis of ordinates on rice 3 for size p it in accuracy will coincide with size p rice 3 of page 19 of work [6]. We have taken molecule CN for research of its molecular structure in extreme conditions. That have received desirable Result. And though completely different, it is necessary to remind results of experiment, as the molecular environment of free radicals C2 and CN also strongly differs. In the first case we dealed triplet with structure of a spectrum, and in the second case with doublet structure when the free radical had only 1 optical electron.

However some parallels can be lead (be carried out). First, this constancy of parameter p - in that and other case size of parameter is identical, that cannot be casual. In our opinion, it is the world constant connected to the nature of space - time. The same constant, as constant Bolcman, Planck, etc. Naturally there is a question: and that it means and why we with it did not collide earlier. The answer is simple, we with it did not collide, because did not aspire to create to this molecule underlying the LIFE, just as hydrogen, oxygen and carbon, extreme conditions. Second, it is the characteristic of other World, which construction we shall try to make on the basis of

works of professor N.A.Kozyreva [7], own experiments, the analysis and generalization of available results.

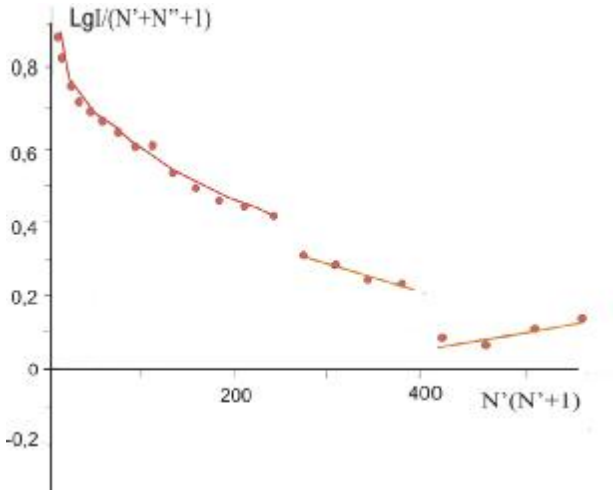

Fig. 4. Hollow the cathode. Radical CN. Current 1A.

By analogy to a molecule C2 we have lead experiences with a film, is similar to that are published in work [8,9]. At the included generator почернение from a radioactive element on a film differed from photographic density at the switched off generator on 17 %. Before to speak, that this measurement is within the limits of a mistake of measurement, it is necessary to take into account two factors. First, pressure in low-temperature to plasma made 500 Па, that in 200 times it is less, than in experiences with radical C2 and, second, it is the personal factor. I so much time accepted its results which later some years became the real fact for a mistake of experiment. Naturally accuracy of measurements demands acknowledgement. But, having decided, that the effect on the second molecule is received, we further have concentrated on designing and experiments of trial installation, capacity in radiation of a hyperfield in 20000 times more laboratory. We hurried up to have time, so it there was a winter started 1991.

At the final stage of the given work it is necessary to discuss one more schedule. It is resulted on fig. 4.

At increase in a current in 2 times, i.e. up to 1 A, one more break of the second sort but already for high quantum numbers was observed. It is necessary to remind, that all schedules in different experiments were well reproduced also points of break of the second sort occurred at the same values of quantum numbers.

The attention last part of the schedule pays to itself. (As schedules were well reproduced we did not resort to extrapolation). In last part of the schedule the corner of an inclination has sharply changed also a tangent of a corner of an inclination of last piece has positive value, and the logarithm of intensity negative. Given the circumstance can be interpreted as follows. Before, at a negative tangent of a corner of an inclination, the system absorbed energy of our World, and at change of a sign, it began to radiate it. On this question there is while only a hypothetical answer [6,8]. About it it will be told in following article. It is necessary to note only, that all data will well be coordinated with each other. Strictly speaking, these assumptions in any case demand experimental check for at their acknowledgement they mean an opportunity of reception of a planet of energy cheap and accessible in anyone point in any volumes. Absence of an interdiction on size of received energy demands the big care at statement of experiments.

THE LITERATURE

1. W. Heisenberg.
2. Andrew J. Yencha and Yasushi Ozaki, Tomotsu Kondow and Kozo Kuchitsu //Analysis of Anomalous Vibrational and Rotational Distribution in the CN (B^2 Σ +) State Produced in the Reactions of Ar ($^3P_0$,2) Metastables with BrCN //J. Chem. Phys.-1980-v.51.-p.343-352.
3. Khalturin V.G. Spectroscopic research of chemically active environments at recycling супертоксикантов, Perm: УрО the Russian Academy of Science, 84 with.
4. Istwan Kovas. Rotational Structure in the Spectra of Diatomic Molecules/-BUDAPEST: ACADEMIAI KIADO, 1969, 320 p.
5. Khalturin V.G. Anomaly in rotary structure of spectra of radicals C2 and CN //Optics and спектроскопия.-Л.: Гл. Publishing house ф.-¼ literatures, 1990.-with 1291-1294.
6. Khalturin V.G Structure of giperplazmon. //Modern high technology technologies. - M.: Academy of Natural sciences, 2005. - № 7.-13-20.
7. Kozirev N.A. Elect works. Leningrad: Publishing house of the Leningrad university, 328 with.
8. Khalturin V.G. Whether probably to change a half-life period of radioactive elements? //« Modern high technology technologies », M.: Academy of Natural sciences, 2005.-№ 5.-P. 84-87 (English and Russian).
9. Khalturin. V.G. Whether Probably to change a half-life period of radioactive elements? //" Successes of modern natural sciences ", M: Academy of natural sciences, 2005.-№ 2, P.-69-70. (English and Russian).