Advances in Diagnosis and Monitoring
of the human quantum informational field with GDV technique.

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Abstract

Recent applications of the GDV Technique – Evoked Bioelectrography Responses of biological subjects – is under consideration. Overview of the results in the following areas are presented: examination of the bronchial patients of various course of disease; estimation of readiness for the competitive activity among elite athletes; Frontier Science Study; study of water and liquids. The data presented demonstrate high sensitivity of the GDV technique for the evaluation of different states of consciousness, follow-up of individual person's reaction to different treatment modalities and influences, detection of small impurities in water. Description of the new GDV programs and devices are discussed as well.

Key words: Consciousness, Frontier Science, Sport, GDV, Kirlian effect, structured water.

1. Introduction

Complimentary, energy, vibration medicine, various forms of healing are inevitably becoming one of our life issues. Serious debates on the efficiency of the given "non-chemical" methods of the influence on the organism are gradually coming down due to the statistically valid clinical data, conceptual approaches and practical applications of acupuncture, homeopathy and low-energy treatments. It would be expedient to put forward a term, integrating all the above-mentioned methods of treatment: "***Informational Medicine***".

One of the principle factors of the Informational Medicine promotion is the development of simple holistic methods of the human state examination, cheap and easy in application, as well as the methods of monitoring of the individual reaction on the informational influences.

2. Methods

The principle of the Gas Discharge Visualisation (GDV) technique device construction is demonstrated on the figure 1. The object analyzed (a finger, a plant leaf and etc.) is positioned on the surface of the optical glass 3.5 mm thick. On the back side of the glass the electroconductive micro-grid is plotted by the method of vacuum photogalvanoplastics. The impulses of the generator voltage are applied to the grid. The glow turning up around the object is fixed by the CCD camera and the picture goes to a computer for the processing and analysis. Purposeful investigations allowed to find the parameters, optimal from the point of obtaining the information on the biological object state with the minimum of invasivity.

Fig.1. Principle of the GDV technique.

These findings are described in more than 50 research works by Dr. Korotkov in the Russian scientific literature, 12 patents, 4 books in Russian, English, Italian [1,2].

In general, the principle of obtaining the information, using the developed approach, can be presented as follows. Electric impulse stimulates the response of the subject in form of electron and photon emission. Simultaneously, at the expense of superficial and volume heterogeneity of the object, space-time modulation of the applied electromagnetic field (EMF)
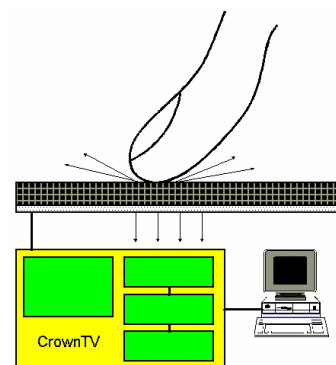
takes place. Weak emission and photon radiation of the object increases at the expense of the gas discharge, generating in EMF. The glow of this discharge is transformed by the optical and CCD system into a computer file. On the basis of the calculated parameters and diagnostic hypothesis a certain conclusion or diagnosis is made. The picture, formed after processing and transformations, reveals as a two-dimensional amplitude-modulated fractal image. To study this image the methods of fractal, matrix and probability analysis, realised in form of the original program complex on the basis of Windows are used. The technique is named as "Biological Emission and Optical Radiation Stimulated by Electromagnetic Field Amplified by Gaseous Discharge with Visualisation by Computer Processing". In short **BEO GDV Technique** and images after processing are named as **BEO-grams or GDV-grams.**

To analyse the human psycho-physiological condition two main analytical approaches are applied: parametric and sector. The parametric approach is based on the calculation of the BEO-grams parameters (today the GDV Software calculates more than 30 parameters), factor and correlation analysis on the basis of GDV parameters and data of the other measurements (psychological, physiological, bioelectrographic). The following main groups of parameters are considered: geometrical, brightness, density, fractal, probability, entropy.

The sector diagnosis is based on the diagnostic table, connecting the glow characteristics of separate zones of fingers with the functional state of the body zones. The diagnostic table is based on the concepts of traditional Chinese medicine, micro-acupuncture systems and empirical experience. The analysis suggests using the notion on Chakras and Ayurvedic medicine. Basing on the BEO-grams from 10 fingers and the diagnostic table in the GDV programs the model of the field distribution round the human body is built (fig.2). Independent clinical observations in different countries revealed the diagnostic validity of the GDV-technique and, in particular, the model of the field distribution – Aura. Special technique have been developed for the study of GDV characteristics of water, biological liquids and different subjects.

3. Results of the experiments

After three years of development GDV technique demonstrated its high sensitivity to human energy variations and practical importance in different fields of the study. Researchers and practitioners from different countries, working with people, studying the subtle energies and altered states of consciousness are referring to the GDV-technique more and more often [3,4,5]. Let us outline some of the results obtained.

Fig.2. GDV-grams of a patient before and after acupuncture treatment with calculated parameters.

3.1. The examination of the bronchial patients of various course of disease

The goal of the present work was to study the clinic informativity of the GDV-technique. Research started in 1998 at the Clinical Therapy department of the St. Petersburg State Medical University under supervision of Prof. G.Fedoseev and Prof. R.Alexandrova. By the beginning of 2000 there have been examined 137 virtually healthy people and 362 patients on a clinic treatment: 295 bronchial asthma **(BA)** patients, 20 pneumonia patients, 27 hypertonic and afflicted with the ischemik heart disease patients, 20 patients afflicted with chronicle pathology of the hepato-biliar system (hepatitis, holicistitis). The estimation of the GDV parameters consisted of the 3 main stages:
1. Calculation of the BEO-grams parameters;
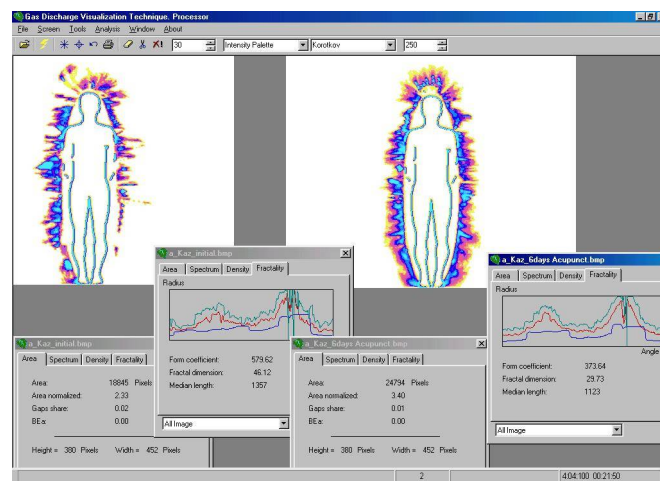2. Sector analysis of the deviated zones;

3. Analysis of the detected changes by means of the GDV Software.

Among the virtually healthy people a BEO-gram is characterized by the good reproducibility. The patients afflicted with the Chinese pathological syndromes of "emptiness" and "fullness" differ in the BEO-gram parameters. Among the pneumonia and bronchial asthma patients the changes in the lower sector of the 5th finger BEO-gram – channel projection of the respiratory system - were registered. Among the patients afflicted with the heart disease the outburst of glow in the upper sector of the 5th finger BEO-gram – projection of the coronary vessels – was observed. Among the BA patients the emission and form coefficients of the BEO-grams were considerably lower than those among the healthy. The increase in the severity of BA was followed by the decrease of these parameters and correlated with the dysfunction of the lung perfusion according to the scintigraphic data, prothrombin indices and thrombin time. These data give evidence for the considerable role of the micro-circulation dysfunction in the pathogenesis of the BEO-gram changes. With the dysfunction of perfusion of one of the lungs the decrease in the parameters of the 5th finger BEO-gram in the corresponding area was registered. Among the patients afflicted with chronicle pathology of the hepato-biliar system (hepatitis, holicistitis) the correlation of the BEO-gram parameters dynamics (emission and form coefficients) with biochemical markers of the liver functional state during the monotherapy with the galsten homeopathic preparation was found.

The sufficient part of the given work consisted in the study of the influence of various methods on the character of the bioenergy-informational interchange. The positive influence of a course of acupuncture among the BA patients was considerably stronger than after the beroteck inhalation, salbutamol taking and salbutamol and salmeterol inhalations. Nevertheless, according to the results of the estimation of the outer breathing function, the broncholitic effect of the medicines exceeded the acupuncture broncholitic effect. This data can be the basis for the complex application of acupuncture and broncholitic medicines.

There were registered different time periods of the energy-informational and clinic-pharmacological effects of broncholitic and anti-tonsillitis medicines among the patients with the combined pathology: BA and heart disease. The most positive energy-informational effects of the acupuncture treatment were observed among the patients with the syndromes of "emptiness" and a small area of the BEO-gram. Fig.2 demonstrates example of patient's Aura Beo-grams with calculated parameters before and after 6-days course of acupuncture.

The comparative analysis of the BEO-gram changes in vivo and in vitro (blood serum in the solutions 1:1, 1:10 and 1:100) among the patients afflicted with nettle-rash, ulcer, chronicle gastritis and pneumonia revealed a high correlation of changes of the BEO-gram area in vivo and in vitro.

The data obtained confirm that the BEO-gram can be used as the express-method for the syndrome estimation of the patients and for the control of the energy-informational influences of the preparations and methods of treatment. We have come to the conclusion, that in the phase of the BA acute condition the principle role in the treatment belongs to the medicamentous therapy. With the decrease of the acute condition and BA remission, when the syndrome of the energy insufficiency of the organism functional systems reveals, the role of non-aggressive, slight influences – acupuncture and homeopathy, medical effect of which is followed by the BEO-grams harmonization, according to the synergetic laws of the natural sanogenisis, becomes more important. Thus, the holistic estimation of the energy homeokinesis by means of the GDV-grams offers a new look at the patient state, deeper understanding of the mechanisms of the medicamentous and non-medicametous methods of treatment and optimized therapeutic courses, i.e. improve the patients life quality.

3.2. Estimation of readiness for the competitive activity among elite athletes

The definition of skilled athletes' readiness for competitive activity is one of the actual problems of sport psychophysiology and psychology. In respect that the athletes' psycho-

physical readiness for competition is defined by two basic factors, namely the specific character of their mental state, as well as the level of development and ability for the mobilisation of organism's psycho-physiological reserves, there have been elaborated and approved the technology of complex psychological and psychoenergy evaluation for the purpose of prognosis of the success of competitive activity including the following techniques:

1. Subjective and objective assessment of psycho-emotional state and prognosis of the success of competitive activity; expert evaluation of personified conclusions by the coaches
2. Subjective assessment of psycho-energy state using POMS questionnaire.
3. Testing of physical work-capacity (VO$_2$ $_{max}$; oxygen pulse; time of PWC keeping).
4. BEO GDV Technique.
5. Evaluation of acupoints' functional state by registration of quasi-DC ς-potential.
6. Statistical processing of the experimental data by means of the correlative and factor analysis.

Subjects of the study were 102 skilled athletes specialised in the following sports: swimming, Nordic combination, skiing and basketball. The subjects were between the ages of 17 – 22, 68 males and 34 females.

Results of the study

The use of battery of tests including 23 parameters for determination the psycho-emotional state and the prognosis of the success of competitive activity enabled us to give the primary rating of athletes' psychophysical readiness (**PPR**). All investigated athletes were divided to three groups:

1st group – athletes with high PPR;
2nd group – athletes with medium PPR;
3rd group – athletes with low PPR.

The comparison of athletes' readiness rating being structured with their subjective assessment by POMS method revealed a statistically significant difference of the 1st and the 3rd groups of athletes by PPR assessment.

As a result of analysis of BEO-grams of fingers it was revealed statistically reliable differences of the basic parameters of BEO-grams among the 1st and the 3rd groups of athletes. This difference was demonstrated for the following parameters of BEO-grams:

1. The area of BEO-gram of every finger of the left and right hand.
2. The areas of different sectors of BEO-grams of the ring (4th) finger of both hands.
3. Fractal parameters of BEO-grams.
4. Types of BEO-grams after K. Korotkov [1]: K-, R-, L-, N-, S- in accordance with the level of their destructurisation, or increase of fractality.

It was demonstrated that at rest the BEO-grams of the athletes of the 3rd group with low PPR is typical for the healthy subjects of the same age and mainly belong to R-type. For the athletes with high PPR (1st group) the BEO-gram at rest is much less structured belonging mainly to L-type with significant percentage of N-type. After physical loading for all the athletes it was found transition to the "worse" type of BEO-gram: L- for the 3rd group and N- for the 1st group with some percentage of N- and S- types respectively. For athletes with medium PPR it was combination of R- and L-types at rest with dominance of L-N types after physical loading. Examples of fingers' BEO-grams are given at fig.3.

These results confirm conclusions of our long-term studies of BEO-grams of top-level athletes: their dominant type of BEO-grams at rest is quite different

a)   b)   c)
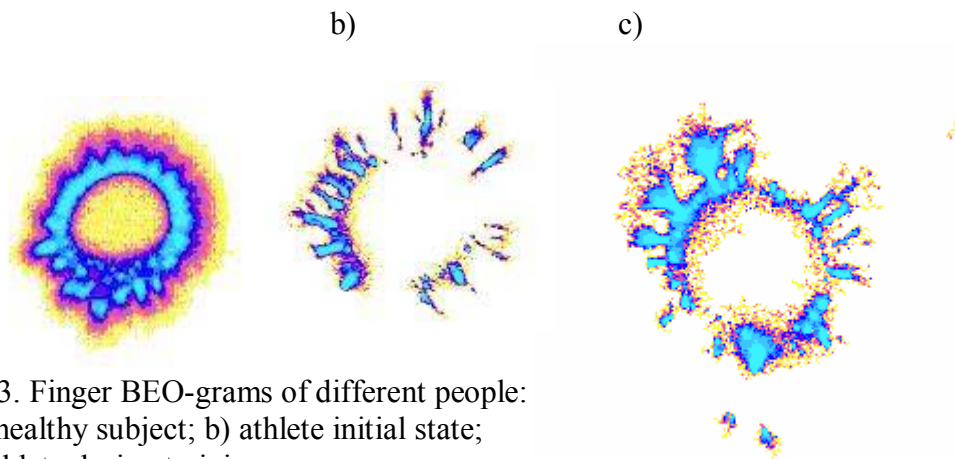

Fig.3. Finger BEO-grams of different people:
a)   healthy subject; b) athlete initial state;
c) athlete during training.

from the types of BEO-grams of relatively healthy people and "worsens" after training and mostly in the process of sport competition. In correlation with other data this may be interpreted as a preliminary evidence for transition of top-level athletes to the state of **Altered State of Consciousness** [6] during competition. Of course, this hypothesis needs further development. It is also significant that the groups of athletes differing by PPR have essential difference in GDV patterns. Together with it the athletes having high and low PPR are also notable for various reactivity of acupoints (AP) of Yin meridians (TR, IG). For these meridians the reactivity of AP is essentially higher in the athletes with low PPR.

The correlation and factor analysis of the results of the investigation carried out by the totality of studied indices (N = 28 and N = 44) allowed to mark out four basic factors whose dispersion makes up correspondingly 72% and 61%. The dominant weight for the first factor occupies the complex parameter of PPR rating (0.87). In this case the statistically reliable components of the first factor are: all the parameters of POMS including the indices of activity – anxiety; the GDV parameters of BEO-grams of eight fingers of both hands; the parameters of AP reactivity bilateral asymmetry of the fourth fingers and the parameter of maximal PWC holding in minutes. Thus, it is rightful to interpret functionally the given factor as a factor of athletes' psycho-physical activity.

The second factor reliably ($p < 0.01$) marks out the parameters of the asymmetry of AP functional state, the parameter of AP reactivity TR and the area of BEO-grams of all fingers of both hands. In accordance with the combination of the parameters the given factor can be interpreted as a factor reflecting some peculiarities of organism's systemic bioenergy homeostasis.

The third and fourth factors reflect the correlation of POMS parameters with the AP functional state and with the capacity of central nervous system, which is determined according to the velocity and accuracy of psychomotor reactions.

As a whole, the results of statistical analysis testify to the fact that the complex of the parameters selected for PPR evaluation appear to be complement; it confirms the adequacy of using the methods of PPR with emphasis on GDV parameters and ς - potential in sport psychodiagnostics. At the same time it is evident that the GDV parameters reflect mainly psycho-emotional state of the athlete, but they are not adequate for the evaluation of the physical state of a sportsman.

The study of the influence of special functional efforts (mental modelling of competitive situation and dosage physical exercises [6]) on the BEO-grams patterns revealed their directed changes during the exercise. This creates hope of developing the technique of obtaining information about the mobilisation of psychoenergy potential by the athlete in purposeful situations. The significance of working out the technology of an objective assessment of the given parameter while diagnosing PPR and forecasting the reliability of skilled athletes' activity is beyond any doubts.

3.3. Frontier Science Study with the GDV technique

The creation of a new paradigm in science starts from the detection of experimental factors, unexplainable in the framework of the acting paradigm. Nowadays these factors are the experiments, demonstrating the influence of the consciousness on the state of a person, psycho-physiological parameters of other people, processes of the material world. Though these experiments are hard to run, they have to submit the laws of the scientific practice: reproduction, independence from a researcher, statistical validity [7]. High sensitivity of the GDV technique provided the growing popularity of the method among the researchers in the field of Frontier Science. Let us give some examples.

When registering the influence of meditation, concentration or some other influences on the human state BEO-grams from the 4th left hand finger of a patient are taken successively with the interval of 15 seconds. The curve of time relation of the GDV parameters are built. In

the normal state the variation of the parameters don't exceed 10-15% while during meditation the BEO-gram area changes in 2-3 times together with distortion of BEO-gram type. Quite often we register anomalous types of emission for people in deep trans-like state: separated dots, twin rings, super-long branches [8]. The trained tested human subjects are able to vary GDV signal increasing and decreasing it [1]. GDV-technology allows to demonstrate the statistically meaningful influence of the energy exercises on the human state. The results of the experiments performed in long-term study in London City University [5] are represented in the table 1. Such results are of great importance from the point of inculcation of the concepts of Mind/Body Connections to the Collective Consciousness. They also demonstrate the perspectives of the GDV-technique application for the evaluation and development of skills and capabilities.

Table 1. Case by case analysis of the GDV finger images compared before and after the intervention subjected to a paired-sample t-test after long period of study [5].

Exercise type	% Cases with statistically* significant increase in GDV finger images	% Cases with no change in GDV finger images	% Cases with statistically* significant decrease in GDV finger images
Meditation	66%	17%	17%
T'ai Chi	60%	30%	10%
Unwinding	57%	43%	0%
Muscle Relaxation	56%	44%	0%
Acupuncture	56%	33%	11%
Stress Workshop	50%	30%	20%
T'ai Chi (HIV)	40%	60%	0%
Tibetan Healing	33%	56%	11%
Kundalini Yoga	20%	53%	27%
Control Group	25%	62.5%	12.5%

*probability of the change occurring by chance is less than 5/100.

The alteration of Consciousness under the influence of meditation or energy training is available to any person, while a long-term influence on the material processes is the destiny of the solitary geniuses. We have constructed a sensor [1] which excites the multiphase discharge in the system pin–dielectric. With the stabilised parameters of the experimental device a number of the discharge impulses per a time unit ranges within 3-4%. The sensor was placed into the grounded metal box, registration of impulses frequency were carried out automatically 16 hours a day in the closed room. The task of the person-inductor was to establish a mental contact with the sensor and to change its parameters remotely by means of mental concentration. Long-term statistical blind experiments demonstrated that after training some people can deliberately change the readings of a sensor remotely for 50-300%. Similar system was developed under the conduct of W. Tiller [9].

Numerous results, demonstrating the BEO-grams to be a complex indicator of the human state, provoked the idea of measuring GDV parameters after death. The details of the experiment are described in [10]. Most important it was found that time behaviour of the GDV parameters after death depends on a type of death.

3.4. Study of water and liquids with the GDV technology

High sensitivity of BEO-grams' parameters to the structural features of different liquids was demonstrated at the early stage of the GDV technique development [1]. In recent experiments the main emphasis was on testing the statistical features of the technique. Statistical processing of more than 3500 BEO-grams of distilled water with added controlled impurities concluded as follows.

The results indicate that in all cases the GDV-grams parameters are most likely to be extracted from the population of normal distribution. The average value almost coincides with the median; the median lies approximately in the middle between the 25th and 75th percentile. Furthermore, the main values (from 95% to 98%) are within the range of two standard abmodalities, and from 66% to 73% of the values – within the range of one standard abmodality.

The 63,8 % sensitivity of test is quite enough to point to the fact that the differences are statistically significant with a high reliability. Statistically significant differences between distilled water and salts solutions are evident even in small samples with the sensitivity equal to one. At the level of second dilution fractality coefficient decreases relatively to its normal value, and then, at the level of the fourth, goes up. Further, having some small differences, it falls to the level of 256th dilution. At the level of 512th dilution it grows again, and starting from the level of 1024th dilution goes down stably till the 16384th dilution, at which level the statistically significant differences between so-lutions and water disappear. At present the physicho-chemical interpretation of this phenomenon is well underway. The data show that the 16000th dilution (about 10^{-6}(gram*mole)/litre) has statistically significant differences from water by all the three parameters – illumination area, entropy, and autocorrelation angle. Fig.4 demonstrate the curve of conductivity - concentrational dependence of GDV parameter.
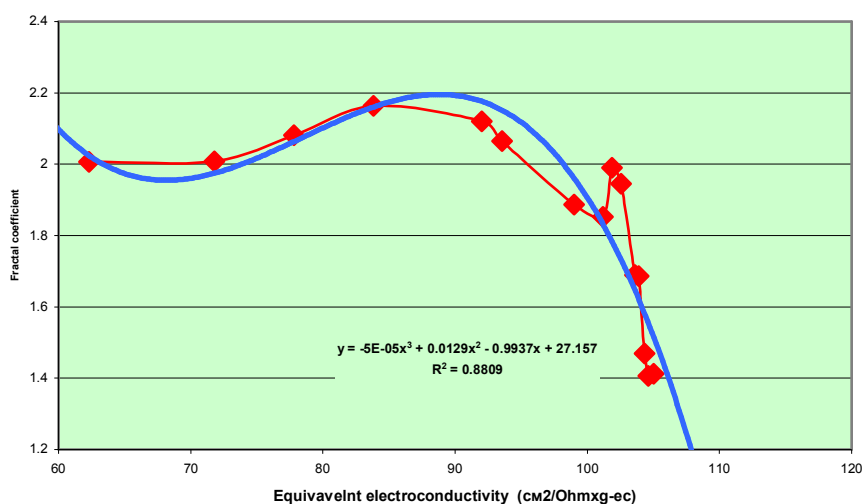

$$y = -5E-05x^3 + 0.0129x^2 - 0.9937x + 27.157$$
$$R^2 = 0.8809$$

Fig.4. Fractal coefficient dependence on electro-conductivity of NaNO$_3$ solution in distilled water.
Solid line – calculation, rhombuses – experimental data.

In spite of a certain conformity of general behaviour of electrolytes and some statistically indistinguishable points, on the whole, the difference of each concentration line from all the others is statistically significant. The general sensitivity was planned at about 60%.

Based on the results obtained it was developed a set of devices for GDV study of liquids and different substances like plants, seeds, stones: "GDV Material Testing Kit" (fig.5), and special program for processing and comparing the data (fig.6).

Developed approaches were successfully applied for study of homeopathy solutions.

4. Conclusion

Experimental data of different researches using GDV support the concept that GDV technology allows to get quantitative evaluation of the energy-and-informational processes of the biological subject. For the description of mechanisms involved we are using approaches as follows:

1. Physical approach.
2. Bio-physiological approach.
3. Psycho-physiological approach.
4. Oriental philosophy and medicine approach.

5. Energy-informational approach.
6. Entropy-synergetic approach.
7. Field approach.
8. Metaphysical approach.

This hierarchy allows going from the bottom up in understanding the GDV characteristics of more and more complex systems, from inanimate subjects to plants, animals up to the human being. This approach creates conceptual basis for the experimental investigation of Subtle World using western scientific paradigm. Important step would be creating of automatic diagnostic systems, based on principles of statistical classification of GDV parameters together with data of other study [11].

Fig.5. "GDV Material Testing Kit"

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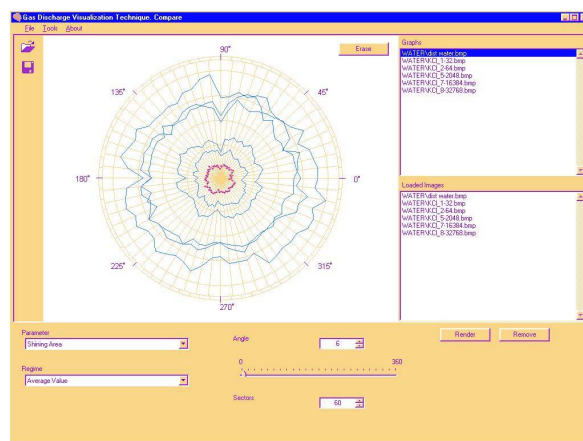
Fig.6. GDV program for processing data of material testing.

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