

## 2016 – 20 Years Scientific Research Center of Medical Biophysics

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### Abstract

**The Scientific Research Center of Medical Biophysics (SRCMB) carries out studies in the following directions** – structure of water, origination of life and living matter, mountain water and longevity, high frequency color coronal discharge, nanotechnologies, astrobiology, biological effects in heavy water, entropy and time in living matter, visual analyzer, biophysical fields, biotechnologies, shungite. **Scientific Board of SRCMB** – Prof. Dr. Ignat Ignatov (Director), Dipl. Eng. Christos Drossinakis (Honorable Director), Ass. Prof. Oleg Mosin PhD, Dr. Georgy Tyminskiy MD, Dr. Igor Akszjonovics MD, Prof. Fritz-Albert Popp DPhSc, Prof. Stanislav Zenin DPhSc, Dipl. Eng. Enrico Bauer, Dr. Pascal Boesinger, Dipl. Eng. Chavdar (Charlie) Stoyanov, Dipl. Eng. Asnat Masandilova, Lieselotte Eder (editor), Tanja Will (Turm Hotel), Marita Schirra-Saar, Roland Saar, Paul N. Kleindienst, Harald Seidler, Alexander Kundos, Don Krastev, Walter Luebeck, Heide Trautwein, Pablo Bianchini, Nektarios Tsatalmpassis.

**Keywords:** longevity, mountain water, origination of life and living matter, high frequency color coronal discharge, nanotechnologies

### 1. Introduction

In Scientific Research Center of Medical Biophysics (SRCMB)

### 2. Materials and Methods

The author methods are: NES and DNES Spectral Analysis (Antonov, 1990; Antonov, Ignatov. 1998) and Color coronal gas discharge spectral analysis (Ignatov, 2007)

#### 2.1. NES and DNES Spectral Analysis

The device for DNES spectral analysis was made by A. Antonov on an optical principle. For this was used a hermetic camera for evaporation of water drops under stable temperature (+22–24 °C) conditions. The water drops were placed on a water-proof transparent pad, which consists of thin maylar folio and a glass plate. The light was monochromatic with filter for yellow color with wavelength at  $\lambda = 580 \pm 7$  nm. The device measures the angle of evaporation of water drops from  $72.3^\circ$  to  $0^\circ$ . The DNES-spectrum was measured in the range of -0.08 – -0.1387 eV or  $\lambda = 8.9$ –13.8  $\mu\text{m}$  using a specially designed computer program. The main estimation criterion in these studies was the average energy ( $\Delta E_{H...O}$ ) of hydrogen O...H-bonds between H<sub>2</sub>O molecules in water samples and human blood serum.

#### 2.2. Color coronal gas discharge spectral analysis

Experiments were carried out by using selective high-frequency electric discharge (SHFED) on a device with the electrode made of polyethylene terephthalate (PET, hostafan) with an electric voltage on the electrode 15 kV, electric impulse duration 10  $\mu\text{s}$ , and electric current frequency 15 kHz. The electrode of the device was made of hostafan, and was filled up with electro-conductive fluid. The spectral range of the emission was in the range 380–495 nm and 570–750 $\pm$ 5 nm. The measurements were measured in electron-volts (eV). Detection of gas discharge glowing was conducted in a dark room equipped with a red filter. On the electrode put a photosensitive paper or color film. The object under study (human thumb) was placed on top of a sheet of photo paper or color film. Between the object and the electrode were generated impulses of the electric voltage 15 kV and electric current frequency – 15–24 kHz; on the reverse side of the electrode was applied the transparent electrically conductive thin copper coating. Under these conditions in the thin contact gas space between the studied object and electrode was generated gas electric discharge in the form of characteristic glow around the object – a corona gas electric discharge in the range of 280–760 nm, illuminates a color photo or a photographic film on which was judged about the bioelectric properties of the studied object. Along with the visible range, for this method were obtained color spectra in UV and IR range. Evaluation of the characteristic parameters of snapshots was based on the analysis of images treated by standard software package. Statistical processing of the experimental data was performed using the statistical package STATISTISA 6 using Student's *t*-criterion (at  $p < 0.05$ ).

### 3. Results and Discussions

Scientific research projects executed by Prof. Ignat Ignatov and the team of the Scientific Research Center of Medical Biophysics

#### 2009

Spectral analysis of various types of water.

Funding: Natural persons from Switzerland, Germany, Austria and Bulgaria.

#### 2010

Research of the spectrum and composition (Eurotest control) of four mountain springs in Teteven. The springs are “Dolna Cheshma”, “Gorna Cheshma”, “Klindiovo” and “Sonda”.

Funding: Self-financing and Teteven Municipality

Information boards at the springs placed by Teteven Municipality.

Research related to the model for the origin of life and living matter in hot mineral water.

Funding: Teteven Municipality, natural persons from Switzerland, Germany and Bulgaria.

#### 2011

Study of “Devin” mineral and spring water and “Divna” table water.

Funding: Devin AD.

#### 2012

Pilot study of longevity factors in the municipalities of Teteven, Yablanitza and Ugarchin, Lovech district.

Funding: Aquachim JSK (Assoc. Prof. Borislav Velikov); Natural persons from Switzerland, Germany, Austria, Russia and Bulgaria.

#### 2013

Pilot study of longevity factors in the municipalities of Teteven, Yablanitza and Ugarchin, Lovech district.

Funding: Aquachim JSK (Assoc. Prof. Borislav Velikov); Natural persons from Switzerland, Germany, Austria, Russia and Bulgaria.

#### 2014

Study of longevity factors in Dolni Dubnik municipality, Pleven district.

Funding: Aquachim JSK (Assoc. Prof. Borislav Velikov), Bulgarian Society for Activated Water (Eng. Atanas Atanasov); Natural persons from Switzerland, Germany, Austria, Russia and Bulgaria.

#### 2015

Study of factors of longevity in Lukovit, Lovech district

Funding: Aquachim JSK (Assoc. Prof. Borislav Velikov)

Study of factors of longevity in Kuklen and Rodopi municipalities, district Plovdiv

Funding: Eco Hotel Zdravec (eng. Todor Burdzhiev)

Research of mountain and melt water from Glacier Rosenloui, Swiss Alps

Funding: Vortex Power AG (Alexander Class, Matthias Mend, Peter Zuecker)

Scientific Research projects that are being implemented at present by Prof. Ignat Ignatov and the team of the Scientific Research Center of Medical Biophysics

#### 2015

Forums where the project results are presented

##### 22 March

World Water Day

Scientific Research Center of Medical Biophysics

Teteven municipality

##### 11 June

Days of Mountain Water and Healing Tourism

Scientific Research Center of Medical Biophysics

Teteven

International Conference “Physics, Chemistry, Biology of Water”

USA, 2012

Euromedica

Hanover, Germany

World Demographic and Aging Forum

St. Gallen, Switzerland

### 4. Conclusion

The results and projects are object of more than 300 publications.

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