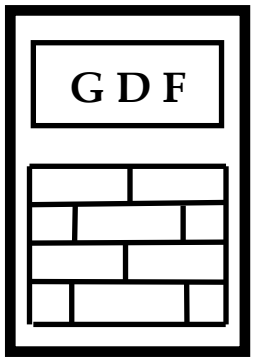
GDF DATA BANKS BULLETIN



VOL. 25 , No. 3

Bucharest, March 2021

ROMANIA

GDF DATABANKS BULLETIN, VOL. 25, NO. 3, 2021
ISSN 1453 - 1674

Content

ISSN 1453-1674

9 771453 167008

This Bulletin is registered at:
- Biblioteca Nationala a Romaniei, Bucharest and
- National Library of Australia, Canberra

www.gdfdatabanks.ro

GDF DATABANKS BULLETIN, VOL. 25, NO. 3, 2021
ISSN 1453 - 1674

Structural aspects of temperature phase transition in PTC-thermistors. III. Several features of hysteresis behavior

Structural transition in PTC thermistors (PTC-TH) intrigued because the suspicion of the existence of an inductive element as in a series of polymers [1], water and aqueous solutions [2].But, before to directly evidence the inductive interaction between two or more specimens, it is necessary to establish in more details composite structure associated to transition according to topoenergetic principles. In previous notes these transitions were evidenced at fixed temperatures [3] and in dynamic regime [4] by heating and cooling with constant rate and measuring electric and calorimetric (DTA – differential thermal analysis) behavior of one specimen.

The goal of the present note is to analyze in more detail hysteresis behavior arising between heating and cooling variations of Uout(T) at different Us values considered as the driving potential. Only one specimen, namely PTFL04BH471Q2N34B0 (Murata) with Tc around 60 ^{0}C [1] is analyzed in view to establish the exact experimental conditions for next experiments on a series of PTC-TH specimens.

Variation Uout(T) is perfectly fitted by Logistic sigmoidal function

$$Uout(T) = a/(1 + b*exp(-c*T)) \quad (1).$$

Calculated values of Uout(T) with #1^{0}C steps are considered to estimate the difference

$$dUout(T) = Uout(T, HEATING) – Uout(T, COOLING) \quad (2)$$

between heating and cooling thermograms and finally the maximum and the area = sum of dUout > 0 values both in mV.

Figure 1 shows the variation of dUout(T) for different Us values.

Figures 2 and 3 show the linear variation of area and maximum (peak height) values with Us, respectively, but revealing an exponential distance between points. As in the other calorimetric and/or other measurements revealing energy effects of transformation processes, it is important to take into consideration their form factor (FF) defined as

$$FF = area/peak\ height,\ (d\text{-}less) \quad (3).$$

Figure 4 shows the variation FF(Us) perfectly fitted by an exponential function revealing also exponential distance between points.

Figures 5 and 6 show that UNIVERSAL topoenergetic law is acting also on these experimental data, so by analyzing a series of PTC-TH specimens in the same experimental conditions it is possible to establish a data banks revealing the nature and amplitude of the evidenced phase transitions in direct connection with their structures.

References

[1] G. Dragan, Amorphous-crystalline coupling in polyethylene, Rev. Roumaine Chim., 26(9,10) , 1315-1326 (1981).

[2] G.Dragan, Mental field-water interaction as evidenced by Isothermal Convection Flow Calorimetry (ICFC)., GDF Databanks Bull., 18(2) 2014.

[3] G. Dragan, Structural aspects of temperature phase transition in PTC-thermistors.I. DC electric measurements, GDF Databanks Bull., 24(6) 2020.

[4] G. Dragan, Structural aspects of temperature phase transition in PTC-thermistors.II, Combined DTA and electric measurements, GDF Databanks Bull., 25(1) 2021.

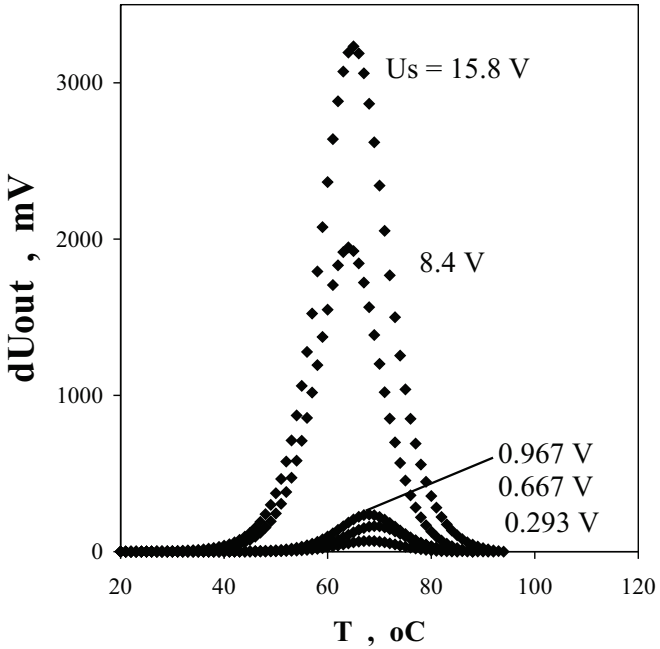


Figure 1.

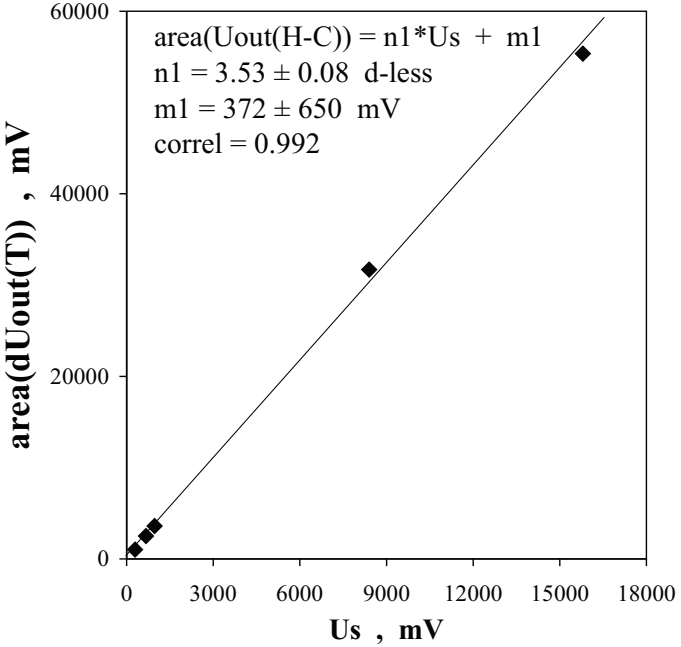


Figure 2.

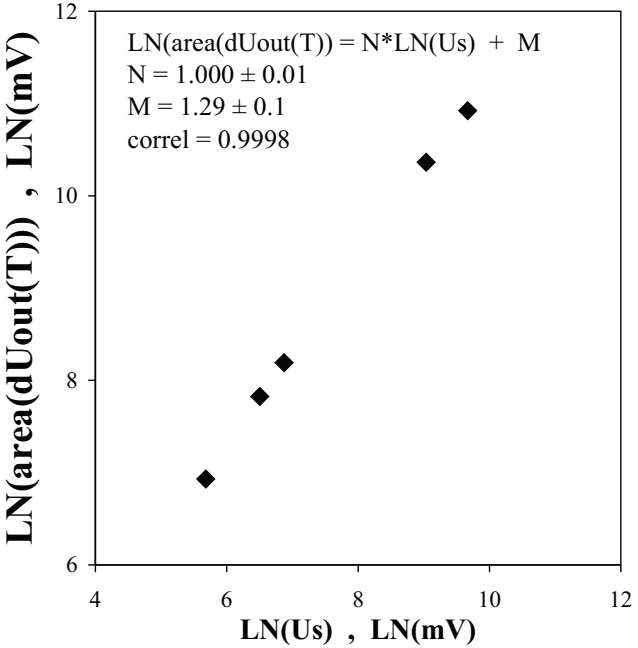


Figure 5.

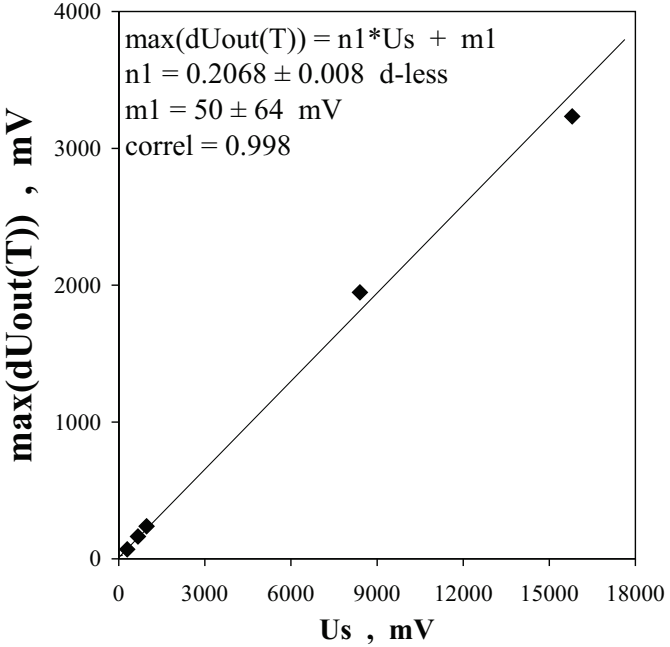


Figure 3.

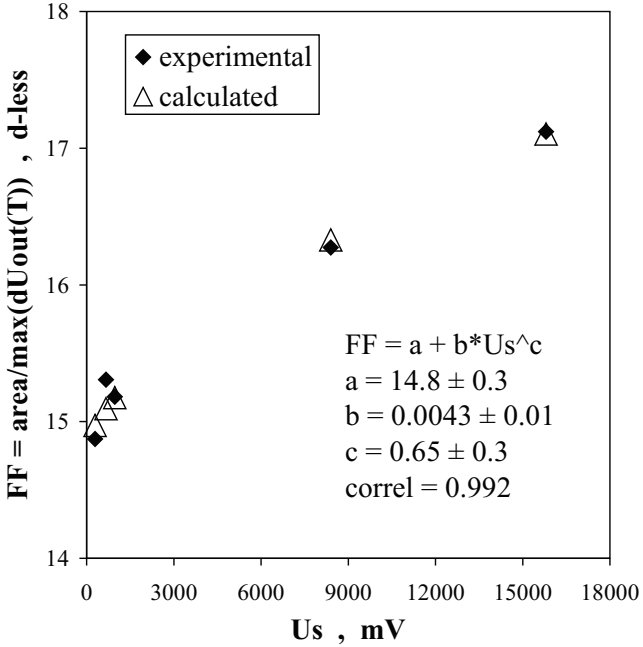


Figure 4.

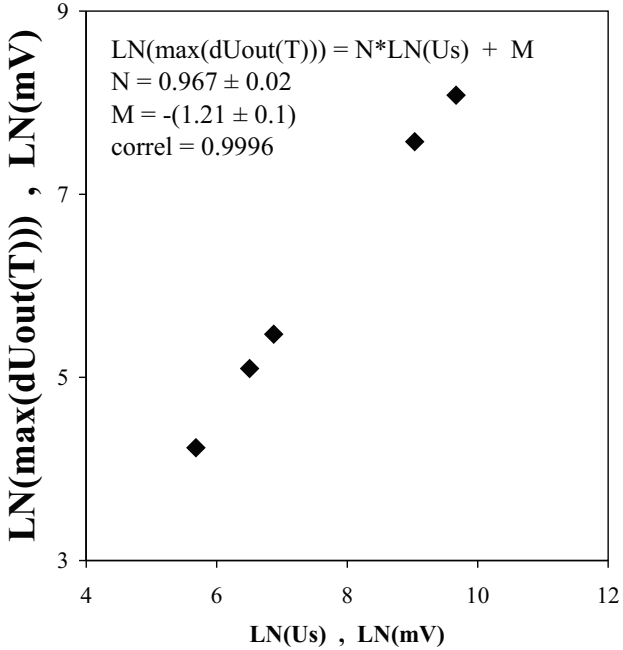


Figure 6.

GDF DATABANKS BULLETIN, VOL. 25, NO. 3, 2021
ISSN 1453 - 1674

https://www.lap-publishing.com

https://www.morebooks.de/store/gb/book/composite-structure-of-human-mind/isbn/978-613-9-45072-5

Table of Contents

Chapter 1

Foreword

Miguel de Cervantes Saavedras:
„*Experience is the mother of all sciences”*

My deep concern is that the present book will not affect in any way human society, although I tried to point out arguments about the next imminent nuclear conflict mainly caused by continuous and accelerated degradation of human mind in direct correlation with uncontrolled growth of population. Survivors will be only ones with properly prepared minds. These two facts are striking evidences for any one, no matter education and place on the planet Earth. The solution I propose is to permanently testing and improving our mind. Its name is HuPoTest I experienced and developed continuously for more than 50 years. Human mind is our “crazy horse” which no individual succeed to completely master during entire life. The main problem is not that there are bad guys and good guys, but it is practically impossible to know them. The only solution is to take care of our own mind. After a long and intense experience face-to-face on a large variety of individuals with HuPoTest, I established that there are 4 main categories: (i) dominating; (ii) dominated; (iii) independent and (iv) not able to perform HuPoTest. The results are not available for ever, because they can transform instantly between them (flip-flop character). The first two are dependent each other, permanently involved in conflicts up to crime and suicide. The independent ones avoid any conflict and live in honest conditions. People not able to perform HuPoTest have their minds dominated by destructive emotions. Human mind is in permanent activity, so that conscious activity is perturbed by emotions. This is the main point of the present book: to reveal the composite structure of human mind by the existence of the active component involved in coherent thinking and an inert one perturbing the conscious activity.

I invite any one who will decide to try HuPoTest to contact me for help without any obligation.

Bucharest, February 2019

About the author:

First name	Gheorghe
Last name	DRAGAN
Born	1 September 1945, Ploiesti, Prahova (Romania)
ORCID	0000-0002-5787-9779
Studies	Faculty of Physics, University of Bucharest, Romania (1963-1968) Ph.D.in Physics, University of Bucharest, Romania (1980)
experience	● Head of material testing laboratory, ICECHIM, Polymer Department, Bucharest (1969-1979); ● Initiator and leader of the research project on new forms and sources of energy; ICECHIM, Center of Physical Chemistry (1979-1988); ● Head of laboratory of analytical devices and measuring instruments, AMCO-SA, Bucharest (1988-1993); ● Technical manager of GDF-DATA BANKS, Bucharest (1993-2008); ● Expert metrologist, Romanian Bureau of Legal Metrology, Bucharest, Romania (1997-2000).
publications	● >100 scientific papers ● >70 scientific communications ● 17 patents ● 6 books
Address:	all correspondence by e-mail: gdf.dragan@gmail.com

GDF DATABANKS BULLETIN, VOL. 25, NO. 3, 2021
ISSN 1453 - 1674

Previous issues of GDF DATABANKS BULLETIN

Year	VOL	NO	Content (titles)	$*)
1997	1	1	Editorial: Databanks – the compulsory language. LOGKOW – a Databank of evaluated octanol-water partition coefficients (James Sangster). Solubility behavior introducing topoenergetic working principles. Comments on 1-octanol-water partition of several n-alkane related series.	F
1997	1	2	Guide of good practice in metrology (Romanian)	AFI
1998	2	1	Editorial: socio-psychological implications in creation and utilization of a databank (Ioan-Bradu Iamandescu); Behavior in vapor-liquid equilibria (VLE): I. Structural aspects; Behavior in vapor-liquid equilibria: II. Several structures in databanks; Symposium on VDC-4 held on 30 October 1997 at Lubrifin-SA, Brasov (Romania).	F
1998	2	2	Practical course of metrology (Romanian)	AFI
1998	2	3	DIFFUTOR-01: Thermally driven diffusion in pure metals	AFI
1998	2	4	VAPORSAT-01: Databanks of thermally driven VLE. The first 100 simple molecules	AFI
1999	3	1	Editorial: New trends in material science: nanostructures (Dan Donescu) DIFFUTOR: Databanks of diffusion kinetics. VAPORSAT: Databanks of vapor-liquid separation kinetics.	F
1999	3	2	Discussions on Applied Metrology	AFI
2000	4	1	Editorial: Laboratory accreditation and inter-laboratory comparisons (Virgil Badescu) Doctoral Theses – important data banks. GDF intends to open new series of experiments on thermo-physical properties. Some comments on uncertainty: global budget and DFT analysis. Events: The 9th International Metrology Congress, Bordeaux, France, 18-21 October 1999.	F
2000	4	2	Measurement and Calibration.	AFI
2001	5	1	Editorial: Metrology ensures moral and technological progress. Topoenergetic aspects of amorphous-crystalline coupling. I. Composite behavior of water and aqueous solutions (paper presented at nanotubes and Nanostructures 2001, LNF, Frascati, Rome Italy, 17-27 October 2001). Events: Nanotubes and nanostructures 2000.School and workshop, 24 September – 4 October 2000, Cagliari, Italy.	F
2001	5	2	Editorial: Viscosity – a symptomatic problem of actual metrology. Visco-Dens Calorimeter: general features on density and viscosity measurements. New vision on the calibration of thermometers: ISOCALT® MOSATOR: Topoenergetic databanks on molten salts properties driven by temperature and composition.	F
2002	6	1	MOSATOR-01: Topoenergetic databanks for one component molten salts; thermally driven viscosity and electrical conductance.	AFI
2002	6	2	Editorial: HuPoTest - Operator calibration or temporal scale psychic test. MOSATOR: topoenergetic databanks of one component molten salts; thermally driven viscosity and electrical conductance.	F
2002	6	3	Editorial: Quo vadis Earth experiment? ISOCALT® : Report on metrological tests	F
2003	7	1	Editorial: Time – an instrument of the selfish thinking. 1st NOTE: Homoeopathy: upon some efficient physical tests revealing structural modifications of water and aqueous solutions. I. Mixing experiments.	F
2004	8	1	Metrological verification and calibration of thermometers using thermostats type ISOCALT® 21/70/2. Metrological verification and calibration of thermometers using thermostats type ISOCALT® 2.2R.	F
2004	8	2	Aspects of correct measurements of temperature. I. measurement of a fixed point according to ITS-90. Physics and Homoeopathy: some physical requirements for homoeopathic	F

			practice.(Plenary lecture at the 19th SRH National Congress, 21-22 September 2004, Bucharest, Romania)	
2005	9	1	AWARD for ISOCALT® at the International Fair TIB-2004, October 2004, Bucharest. ISOCALT® 3/70/21 was awarded in a selection of 20 products by a commission of experts from the Polytechnic University of Bucharest. Upon some aspects of temperature measurements. (12th International Metrology Congress, 20-23 June 2005, Lyon, France)	F
2005	9	2	A new technique for temperature measurement and calibration. National Society of Measurements (NSM). Important warning for T-calibrator users: MSA has chose metrology well calibrators from Fluke (Hart Scientific).	F
2005	9	3	Universal representation of Cancer Diseases. 1. First sight on NSW-2003 report. Universal representation of Cancer Diseases. 2. UK cancer registrations on 1999-2002. Vital Potential can estimate our predisposition for cancer diseases.	F
2006	10	1	NTC – thermistors -1	AFI
2007	11	1	HuPoTest - 40 years of continuous research Basic rules for preventing and vanishing cancer diseases Climate change = change of mentality Hot nuclear fusion – a project of actual mentality	F
2007	11	2	MT – Introduction to Mental Technology HuPoTest – general procedure, assignments of results, specimen of complete test, order and obtain your complete HuPoTest report	F
2007	11	3	TRESISTOR© - data banks of materials with thermally driven electric and magnetic properties TRESISTOR© - NTC -1 - data bank of NTC thermistors	AFI
2008	12	1	Australian population: life, death and cancer	F
2008	12	2	Pattern of Cancer Diseases	F
2008	12	3	Adiabatic calorimetry – summary description of the demo prototype	F
2008	12	4	Flight QF 30 and even more… Temperature calibration of NTC-thermistors. 1.Preliminary results.	F
2009	13	1	Proposal for interlaboratory comparisons. Calibration of NTC-thermistors (The 14th International Metrology Congress, Paris, France, 22-25 June 2009).	F
2009	13	2	Sudoku – un algoritm de rezolvare. (Sudoku – an algorithm for solution).	AFI
2009	13	3	Cancer and Diabetes – as social diseases. (Open letter to all whom it may concern).	F
2010	14	1	Studies on cement hydration by High Resolution Mixing Calorimetry (HRMC).	F
2010	14	2	Measuring tools for subtle potentials; pas-LED: an efficient measuring tool for subtle potentials.	F
2010	14	3	Upon some features of cancer in Australia: 1982 – 2006.	F
2010	14	4	Cancer as an erosion process in human society.	F
2010	14	5	Cancer erosion in Australian human society: 1982 – 2006.	F
2010	14	6	Cancer erosion in German human society:1980-2008.	F
2011	15	1	Procedures and devices for energy and water saving. (I) (in Romanian).	F
2011	15	2	Structural and relativistic aspects in transforming systems. I. Arrhenius and Universal representations of thermally driven processes.	F
2011	15	3	Topoenergetic aspects of water structuring as revealed by ac electric conductivity.	F
2011	15	4	Topoenergetic aspects of human body	F
2011	15	5	HuPoTest: four month study of a case	F
2012	16	1	DTA study of water freezing. I. Upon some aspects of repeatability.	F
2012	16	2	DTA study of water freezing. II. Statistical features on one week of experiments.	F
2012	16	3	DTA study of water freezing. III. New facts on daily mental field.	F
2012	16	4	Mental field and state of health. Câmpul mental și starea de sănătate.	F

2013	17	1	DTA study of water freezing. IV. New facts on energy circuits.	F
2013	17	2	DTA study of water freezing. V. Effect of a mental antenna	F
2013	17	3	AC electric conductivity of untreated and mentally treated electrolyte aqueous solutions.	F
2013	17	4	DTA study of water freezing. VI. Mental field in a working day.	F
2013	17	5	DTA study of water freezing. VII. More statistical features on one week of experiments.	F
2013	17	6	HuPoTest: New measurements and results	F
2013	17	7	Time as unique base quantity. (Proceedings of the 16th International Congress of Metrology, 7-10 October 2013, Paris, France).	F
2013	17	8	Eurovision song contest. 1.Basic social aspects	F
2013	17	9	Mental field-water interaction as evidenced by Isothermal Convection Flow Calorimetry (ICFC). I. ICFC description and preliminary results.	F
2013	17	10	1. Procedure for defining standard liquids for viscosity based on topoenergetic principles. 2. Topological aspects of flow and deformation in polymer composites, The VIII-th International Congress on Rheology, 1-5 September 1980, Naples, Italy, pp. 375-376. 3. Universal representation of flow behavior based on topoenergetic principles, The IX-th International Congress on Rheology, 8-13 October 1984, Accapulco, Gro. Mexico, pp.369-376. 4. Comments on "Universal representation of flow behavior based on topoenergetic principles", The IX-th International Congress on Rheology, 8-13 October 1984, Accapulco, Gro. Mexico, pp. 369-376. 5. Open letter to BRML and INM.	F
2014	18	1	Adiabatic calorimeter as high accuracy T-calibrator	F
2014	18	2	Mental field-water interaction as evidenced by Isothermal Convection Flow Calorimetry (ICFC). II. Effect of convection flow power.	F
2014	18	3	Eurovision song contest. II. Copenhagen, Denmark 2014 and some more features on social mentality.	F
2014	18	4	The 38th Congress of American-Romanian Academy (ARA) of Arts and Sciences, 23-27 July 2014, Pasadena, California, USA	F
2015	19	1	Gold versus money. 1. An overview on main financial figures of world countries.	F
2015	19	2	Gold versus money. 2. Rich, middle and poor countries.	F
2015	19	3	High Resolution Mixing Calorimetry (HRMC) redivivus. 1. General presentation and heat capacity measurements.	F
2015	19	4	High Resolution Mixing Calorimetry (HRMC) redivivus. 2. Structure developing of aqueous solutions by mixing experiments.	F
2015	19	5	High Resolution Mixing Calorimetry (HRMC) redivivus. 3. Calibration	F
2015	19	6	Evidence of human mental field by ac-electric conductivity in electrolyte solutions. 1. Bio-energy.	F
2015	19	7	High resolution mixing calorimetry redivivus.IV. Specific heat of crystalline phase of water. WPA2015: International Congress of World Psychiatric Association,Primary care mental health: innovation and transdisciplinarity, Bucharest, 24-27 June 2015, ROMANIA	F
2016	20	1	Quo vadis population growth on planet Earth: more details	F
2016	20	2	Structural aspects revealed by topoenergetic view on ac electric conductivity in HCl/(water + organic solvent)	F
2016	20	3	Stability of amorphous-crystalline coupling in electrolyte aqueous solutions in relation to interaction with bio-fields	F
2016	20	4	Efficient, simple and cheap outdoor extension of exhausting system using Bernoulli and thermal convection effects applied for air forced boilers on natural gas	F
2016	20	5	Good quality home made soap in high efficient conditions	F
2016	20	6	Interaction of quartz crystals with bio-fields. I. Preliminary experiments on commercial quartz oscillators.	F
2016	20	7	Interaction of quartz crystals with bio-fields. II. Differential measurements on pairs of commercial quartz oscillators.	F

2016	20	8	Interaction of quartz crystals with bio-fields. III. Quartz selection and their significances.	F
2016	20	9	HuPoTest – new attempt for self-evaluation and improvement of mental state	F
2017	21	1	Interaction of quartz crystals with bio-fields. IV. Rough estimation of reproducibility	F
2017	21	2	Interaction of quartz crystals with bio-fields. V. Closer look on quantitative estimations	F
2017	21	3	Interaction of quartz crystals with bio-fields. VI. Influence of Moon phases	F
2017	21	4	HuPoTest – 50 years of continuous research and attempts to make it as efficient self-evaluation and improving procedure for mental state HuPoTest – read this first Message to the organizers of the snn2016 Conference (http://snn2016.snn.ro/) and to all whom it may concern HuPoTest – an efficient test and training procedure for mental and health state (Abstract for World Congress of Mental Health, New Dehli, INDIA, November 2-5, 2017) Interaction of unpolarized capacitors with Human Mental Field and Bio-Fields. VII. Dielectrics with high oriented crystalline structure.	F
2017	21	5	Interaction of unpolarized capacitors with Human Mental Field and Bio-Fields. VIII. Dielectrics with high oriented crystalline structure. HuPoTest – data base correlations revealing mental pattern.	F
2017	21	6	Upon some features of global economic structure Eurovision song contest 2017	F
2017	21	7	HuPoTest – proper training and creation of simple database in view to evaluate mental improvement HuPoTest – project for the complete software available for any individual user	F
2017	21	8	Global warming facts Topoenergetic structure of trees ramification	F
2017	21	9	HuPoTest – simple Matlab software for time measurements HuPoTest – preliminary tests on PUT response reaction	F
2018	22	1	Interaction of unpolarized capacitors with Human Mental Field and Bio-Fields. IX. Measurements on 1st June 2017- 9th January 2018.	F
2018	22	2	Interaction of unpolarized capacitors with Human Mental Field and Bio-Fields. X. Further estimations on 1st June 2017- 9th January 2018. HuPoTest – new tests on PUT response reaction HuPoTest – read this first before use it (updated) HuPoTest – an efficient test and training procedure for mental and health state (abstract sent to the International Congress of Royal College of Psychiatrics - 2018)	F
2018	22	3	Estimation of global warming by differential calorimetric procedure. I. Experimental principles, preliminary results and their significances.	F
2018	22	4	Definition and assignment of some global uncertainties of measurements, 9th International Metrology Congress, Bordeaux, France, 18-21 October 1999, pp. 353-356. HuPoTest - errors originating from software HuPoTest – seven week mental training during Ortodox Easter Fasting. I. New rules for more realistic and efficient measurements.	F
2018	22	5	HuPoTest – seven week mental training during Ortodox Easter Fasting. II. Statistic features of particular data and their significance	F
2018	22	6	HuPoTest – seven week mental training during Ortodox Easter Fasting. III. Personal mind structure and pattern during training	F
2019	23	1	HuPoTest – up to date history HuPoTest – operating instructions HuPoTest – significance of calculated parameters HuPoTest – composite structure of mind	F
2019	23	2	Estimation of global warming by differential calorimetric procedure. II. Experimental results over 2018	F

2019	23	3	Composite structure of human mind. HuPoTest results on 5 weeks of fasting before Christmas 2018	F
2019	23	4	Interaction of unpolarized capacitors with Human Mental Field and Bio-Fields. XI. Results obtained over 2018. Book launch: Composite Structure of Human Mind	F
2019	23	5	Interaction of unpolarized capacitors with Human Mental Field and Bio-Fields. XII. New results obtained over 2018. Book launch: Composite Structure of Human Mind	F
2019	23	6	Composite structure of human mind. HuPoTest results on 7 weeks of fasting before Orthodox Easter 2019 Book launch: Composite Structure of Human Mind	F
2019	23	7	Eurovision song contest, Tel Aviv, Israel, 18 May 2019 Book launch: Composite Structure of Human Mind	F
2019	23	8	HuPoTest – 4 weeks of self evaluation, training and additional instructions Book launch: Composite Structure of Human Mind	F
2019	23	9	Composite human mind and composite human society (43rd Congress of American Romanian Academy of Arts and Sciences, ASILOMAR Conference Grounds, Pacific Grove, CA, USA, 15-17 November 2019) Book launch: Composite Structure of Human Mind	F
2020	24	1	Left-Right Bio-Balance: Calorimetric approach of human mental state I. Introductory principles and experimental details. Book launch: Composite Structure of Human Mind	F
2020	24	2	Composite structure of human mind. HuPoTest results on 5 weeks of fasting before Christmas 2019 Global warming and human mentality Book launch: Composite Structure of Human Mind	F
2020	24	3	Left-Right Bio-Balance: Calorimetric approach of human mental state II. Results on male persons under test. Book launch: Composite Structure of Human Mind	F
2020	24	4	Interaction of unpolarized capacitors with Human Mental Field and Bio-Fields. XIII. Results obtained over 2019. Book launch: Composite Structure of Human Mind	F
2020	24	5	Estimation of global warming by differential calorimetric procedure. III. Experimental results over 2019 Book launch: Composite Structure of Human Mind	F
2020	24	6	Structural aspects of temperature phase transition in PTC-thermistors. I. DC electric measurements Book launch: Composite Structure of Human Mind	F
2020	24	7	Composite structure of human mind. HuPoTest results on 7 weeks of fasting before Orthodox Easter 2020 Book launch: Composite Structure of Human Mind	F
2021	25	1	Structural aspects of temperature phase transition in PTC-thermistors. II. Combined DTA and electric measurements Book launch: Composite Structure of Human Mind	F
2021	25	2	Covid-19 pandemic. I. First wave. Book launch: Composite Structure of Human Mind	F

*) F=free, AFI=ask for invoice.

GDF DATABANKS BULLETIN, VOL. 25, NO. 3, 2021
Please feel free to distribute in integral form this issue.
All correspondence at the author:
gdf.dragan@gmail.com

ERRATUM:

VOL.	NO.	place	CORRECT
15	2	Figure 5	P-
15	3	page 5, row 7 down-to-up	x = 0.2
22	3	Figures 4-6	Values of dTc and exchanged heat must be divided by 10
22	6	Figure 4	-N^2/M values are negative; See Figure 8 and comments in issue 23(3)
23	1	Figure 5	
23	1	HuPoTest-significance of calculated parameters	(yo, Δb)<0, Δa>0: slow reaction (yo, Δb)>0, Δa<0: impulsive reaction

I encourage readers to advice me any observation.

ISSN 1453-1674

www.gdfdatabanks.ro