Watercon 2013 Bulgaria Physics, Chemistry and Biology of water V2.0
www.watercon1.org

4th Phase of Water Implications for health

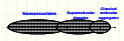
Gerald Pollack

- Cells
  - Solutes are Excluded in EZ zone
  - Full of EZ water
    - Radiant energy build EZ in cells
- EZ zone
  - Negatively charged
  - Molecules more constrained
  - Molecules more stable
  - Absorbs at 270nm
  - Molecules aligned (polarised)
  - More viscous
  - Molecular structure different
  - Optical Properties different
- Health
  - Anesthics block function (impair function)
  - Aspirin restores function (enhances function)
  - Infrared builds EZ
    - Good for health
    - Good for cells
  - Body charge
    - Cells 60% neg charge
    - Extracellular 20 % neg charge
    - Hypothesis – body strives for greater neg charge
  - Oxidants
    - anti-oxidants gain = gain of electrons
    - Oxidation loss of electrons
    - Anti-oxidants prevent loss of electrons
    - Maintain body neg charge
      - Maintain health
- 4 phases

NANOASSOCIATES ARE THE MATERIAL CARRIES OF THE BIO-EFFECTS MANIFESTED BY HIGH DILUTED WATER SOLUTIONS OF BMC

A. Konovalov

- Facts that are not explained by existing theories are the most valuable for science
- Nanoassociates
  - Not all solutes for nanoassociates
  - ~ 25% SOLUTES DO NOT FORM NANOASSOCIATES
- NANOASSOCIATES are nanosized (up to 400 nm) molecular ensembles, which are formed in high diluted water solutions (HDWS) of BAC under influence of two effectors: solutes and external (natural) electromagnetic fields – and consist of water molecules mainly (up to 300 millions).
  - Antioxidants
  - Neurmediators
  - Plant Growth Regulators
  - Vitamins
  - Hormones
  - Antiseptics
  - Amoebics
  - Other Compounds



- REGULATION OF RATES AND STEREOSELECTIVITY OF GLYCOSITION REACTIONS BY MIXTURES OF SOLVENT AND REAGENTS, WHICH CORRESPOND TO DEFINITE SUPRAMERS

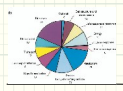
Aquaphotomics for weak signals quantification in water

Roumiana Tsenkova

- jacques-benveniste.
  - "... electromagnetic transmission of biochemical information can be stored in the electric dipole moments of water in close analogy to the manner in which magnetic moments store information on a computer disk."
  - A person can enter a room two days after a cat has left and still suffer an allergic response.
    - Understanding that the smallest amount of a substance affects the organism
- QUANTUM SPECTROSCOPY
  - In order to "control and characterize quantum dynamics of many-body states"!
  - where "matter is excited and probed with a sequence of light pulses at defined frequencies"

Fruit Ripening- Hydration/ Dehydration

Chaim Frenkel



- Genetically programmed
- Pattern
  - 1. Climacteric fruit, displaying Climacteric rise in respiration and attended pattern in ethylene evolution during the ripening process.
  - 2. Non climacteric fruit, which manifest continuous down drift in respiration and ethylene evolution.
  - Ethylene production and action stimulate ripening in climacteric fruit but appears not to be important in the ripening of non climacteric fruit.
- Triggers
  - It is not clear, however, what might be a cellular or metabolic cue(s) that stimulate the ripening transcriptional program, ethylene action not withstanding.
- Chemical stress ?
  - An early study revealed that fruit ripening is accompanied by the accumulation of and is apparently driven by production of reactive oxygen species (ROS).

Brownian

Peter Jones

- Contributors
  - Reich W
  - R Brown 1828
  - Ford B J
  - Mahboby D J
  - Needham J T
  - Hilton B
  - Subbaiah

Different Kinds of Water and Coherent Processes in Biology

- ice
  - are fully non coherent systems
- Liquids
  - are systems where electron clouds are coherent
- Solids
  - are systems where nuclei, too, are coherent
- Liquid water is peculiar, since the coherent oscillation connects two electronic configurations that have extreme features:
  - 1) The ground configuration where all electrons are tightly bound (the ionization potential is 12.60 eV, corresponding to soft X-rays and to an excitation temperature of 145.000 °C !)
  - 2) The excited configuration has an energy 7.6 ±2.06 eV, only MILLIONS TIMES ENERGETICALLY DIFFERENT. So for each molecule there is an almost free electron!

Armando De Nono

- Is the dynamical distribution of the two phases only function of the temperature?
  - No, it also depends on the concentration of solutes
- QED
  - Van't Hoff plot
  - Which components are the at equilibrium ?
  - IR spectrum of liquid water
- Two Phases
  - Do the interaction with the environment affect the distribution of the two phases ?
    - Yes, the quality of the surface modifies the percentage of the coherent phase.

Rethinking Natural Waters

Eshel Ben Jacob

- Existence
  - Nanoparticles at significant density (1012 per 1ml) are observed in Natural Waters
- Singular effects
  - pH regulation, Precipitation,Electrophoretic mobility, Electrochemical deposition (ECD), Protein protection, Growth of bacteria,
- Theory
  - Network of nanoparticles and nanobubbles, Singular Perturbation
- Reflections
  - Rethinking the body: Fluids, cellular water, cancer and healing
- Mitochondria
  - Cell power
  - a colony of former bacteria in each cell
  - control and regulation of sex hormones
  - Energy management and cellular differentiation
- Electromagnetism
  - The effect of cellular phones

- ELF / RF
- Cancer cells in the twilight zone
  - Cancer cells have the capacity to generate substantial fraction of energy from anaerobic glycolysis even in the presence of sufficient level of oxygen.
  - Cancer Question: "Why does cancer result if oxygen-respiration is replaced by fermentation?"

Water structures carrying DNA information, Application to HIV/AIDS and Autism

L.Montagnier, Borovitz

- Emergence or reemergence of new epidemics due to
  - Globalization of exchanges and travels
  - Demography: concentration in large cities
  - Nutrition (pesticides, water)
  - Environmental factors
  - Climate changes, electromagnetic radiations
  - Contacts with wild and farm animals
  - Decline of immune defenses
- Various environmental factors effects accumulate
  - Radiations (g, X, UV, visible, hertzian)
  - Air chemical pollution
  - Inadequate food
  - Excessive physical exercize
  - tobacco smoke
  - alcohol
  - ischemia
  - parasitic infections
  - Bacterial infections
  - Viral infections
  - = DISEASE
- Pathological effects of Oxydative Stress
  - Lipid hyperoxydation (plasma, cell membranes)
  - Protein Oxydation --> destruction, agregates
  - DNA oxydation --> Mutations, Chromosomal Breakage

Supercooling and freezing dirty water

James D. Brownridge

- "If there is magic on this planet, it is contained in water."
- Upside down
- Vial held at -15 for 422 days
- Convection
- Muddy water will supercool
- Latent heat emission
- EMF generated
- effect of water clusters
- D2O and H2O
  - Thermal oscillation
  - Thermal profile

Fruit Ripening - A Developmental Event Driven by Hydration/ Dehydration

Chaim Frenkel

- Ripening
  - Fruit ripening, a form of senescence in plants, is a genetically programmed event manifesting abundant transcriptional and translational activity
  - An early study revealed that fruit ripening is accompanied by the accumulation of and is apparently driven by production of reactive oxygen species (ROS).
  - 1. Climacteric fruit, displaying Climacteric rise in respiration and attended pattern in ethylene evolution during the ripening process.
  - 2. Non climacteric fruit, which manifest continuous down drift in respiration and ethylene evolution.
  - 3. Ethylene production and action stimulate ripening in climacteric fruit but appears not to be important in the ripening of non climacteric fruit.
  - fruit ripening is accompanied by and is driven by autonomous stress

Ecotechnology of water in the human brain

- MRI
  - Water hydrogen nuclei (protons)
  - "All matter are made of molecules (or atoms)"
  - "Molecules are constantly in motion due to heat, colliding with each other and bouncing back and forth" (kinetic internal energy linked to temperature).
  - This "Kinetic Theory" (Maxwell, Boltzmann, Clausius,...) was highly controversial around 1900...some of epic battles between its proponents and its detractors.
  - Ludwig Boltzmann (1844-1906): Committed suicide in 1906.
  - Einstein used "Brownian motion" (e.g., random movement of particles) as a vehicle to prove the Molecular-Kinetic Theory of Heat.

Denis Le Bihan

The Demon - Guardian of Water

Yordanka Mankova

- Bulgarian people
  - Spiritual "protector" of water sources
    - Sibea
  - Images
    - Sopot Monastery (Smoka), 1832
    - Yantra River-town of Byala, (Dragana) 1867
    - church "St. Archangel Michael" (Dragan) 1846.
  - "Curtsy to fire, but kneel to water!" Bulgarian proverb
  - " Water, you are not only a vital need, you're life itself!"

Bioelectography of water and influence on people

Konstantin Korotkov

- Improved performance
  - Treated water
- Main influences
  - Contaminants
  - Electromagnetic fields (light)
  - Oxygen
  - Orgone energy
  - Dust
  - Succusion (Movements)
  - Container
    - Epitaxy
  - Gas Discharge Visualisation GDV
  - Book
    - Electrophotonic analysis in medicine
- It is shown that athletes drinking water passed through a graphene filter experienced growth in aerobic capacity, physical performance, energy potential, and their bodies' adaptive reserves.

Aquaphotomics for weak signal quantification in water

Roumiana Tsenkova

- electromagnetic transmission of biochemical information can be stored in the electric dipole moments of water
  - Water Spectrum
- AQUAPHOTOMICS: WATER as a MOLECULAR MIRROR

Indications of "autothixotropic" phenomenon of water

Nada Verdel

- Background
  - Aged extremely diluted and succussed NaHCO3 solutions have
  - Higher conductivities than chemically analogous solutions
  - Higher enthalpies of mixing with NaOH
- Method
  - We tested our working hypothesis by measuring the electrical conductivity of aqueous solutions of sodium hydrogen carbonate as a function of time, volume and ageing condition, mechanical and electrical treatment and temperature of the conductivity measurements
- Result
  - at higher frequencies (starting at 10,000 Hz and much more conspicuously at 100,000 Hz) we can clearly see a significantly higher s/sCC at a lower temperature
- Conclusions
  - Could excess conductivities be attributed to autothixotropy?
  - May quantum field theory explain the occurrence of the autothixotropic phenomenon?
  - Could large-scale inhomogeneities form due to increase of effective particle sizes by growth of EZ?

Water and effect of antioxidants in ultra low doses on biological membranes

Nadezda Palmina

- Observation of biologically active substances (BAS) effect in ultra - low concentrations (10-22-10-15M) on living systems
  - Substances
    - At the moment more than 100 compounds have demonstrated this property
    - THREE THE MOST IMPORTANT CONTROL SYSTEMS ARE LOCALIZED IN THE CELL MEMBRANES : CYCLIC NUCLEOTIDES, PHOSPHOINOSITOL CYCLE AND LIPID PEROXIDATION. CROSS-TALK TAKE PLACE BETWEEN THEM.
    - Thyroliberin
    - Phorbol esters
    - Natural (a-tocopherol – a-?C) ? synthetic (potassium salt of 6-(4-hydroxy-3,5-dithrtbutyl-phenyl) propionic acid —Phenozan -PPS)- antioxidants
  - Conclusion
    - NO MAGNETIC FIELD – NO NANOASSOCIATES – NO BIOLOGICAL EFFECTS.
  - ULD Effect
    - We know what happens in cell membranes. We know what happens in diluted solutions. We don't know the way of nanoassociates interaction with cell membranes

Water and light interaction

Luis Santana-Blank

- Laser photobiomodulation then initiates secondary cell-signalling resulting in increased energy metabolism
- Light can stimulate or inhibit (i.e., modulate) cell function depending on signal and receptor characteristics, which determine biological outcome
- Laser photobiomodulation (LPBM) has been proposed as a multi-hallmark therapy for cancer and other complex diseases. Experimental and clinical data showing enhanced water structuring and selective photo-induced tumor cell death suggest that LPBM can increase potential energy in the exclusion zone (EZ), which then acts as a rechargeable electrolytic bio-battery for the external supplementation of the energy demand required for cellular work, signaling pathways and gene expression in the presence of injury-induced redox potentials. This first-ever clinical demonstration of selective, light-induced, effects over the EZ also suggests that it may serve as a predicator of anticancer response before measurable tumor volume reduction.

Electro-Magnetic Information Transfer Through Aqueous Systems

Alberto Poletti

- Quantum Electrodynamic Theory
- Conclusion
  - ElectroMagnetic Information Transfer (EMIT) through aqueous system could represent an effective biomedical tool
- Method
  - Transfer done at 7 Hz modulated at 3KHz
  - Dynamic electro magnetic fields are endogenously generated as biophysical correlates of biochemical activities into cells and tissues
- Background
  - Aqueous systems not only provide the basis for the origin of life but also play a dynamic active role in the maintenance of allostasis, namely the ceaseless process aimed to keep stability through dynamic changes, in any cell and organism
  - Nature must be interpreted as matter, energy and information
- Clinical trial
  - 26 in the Biophysical group (17 f, 9 m), — Biophysical therapy mimic the dynamics of the pharmacological treatment and is long lasting in their effects
  - 23 in the pharmacological group (11 f, 9 m) — Ibuprofen 600mg twice a day, on full stomach, for 10 days
  - 17 in the placebo group (12 f, 5 m) — The patients of this group was receiving only Normabit Base solution as placebo

Water interacting with magnetic fields; structures, properties & functions

Sumio Ozeki

Hygroelectricity: liquid water & vapour are charge carriers

Fernando Galembeck

- Electric charge
  - Static electricity
  - Charge distribution ion every surface
  - Can we take advantage of the Potential Difference (PD)
  - Water flow creates PD
  - Charge transfer is mediated by water ions
- Safety considerations
  - Dust
  - Pharmaceuticals
  - Fires
  - Space suit generates 20kv
  - Charged wheat flour, sugar and polyethylene are powerful explosives

Functional role of quantum coherence in interfacial water

James Oschman

- Quantum Coherence in Water
  - Importance
    - Living Matrix
    - Muscles, connective tissues, and cell membranes are composed mainly of molecules packed closely together as liquid crystals.
    - 99 % of the molecules in the body are water molecules
    - Most of the helices in the body are organized vertically
    - Protons and electrons have a property known as spin
      - If an external field is applied, the spin axis change
    - When molecules are coherent Coherent Light is emitted - Radiance
    - The water molecules spin coherently and precess in response to electromagnetic fields in the environment. This arrangement accounts for the extreme sensitivity of living matter to external environmental fields
    - Energy and information input into any of the body's systems can spread over all systems
  - Coherence
    - HYPOTHESIS: NORMAL PHYSIOLOGY AND HEALTH DEPEND ON QUANTUM COHERENCE IN THE WATER SYSTEMS.
    - Lysine
      - Spinning water molecules couple the quantum information field (morphic field) to the molecular structure and vice versa.

- In a coherence domain, torsion waves can propagate to nearby particles and couple spins. Coherence occurs when many such particles spin and precess together, in phase with one another.

EZ-water in light of Quantum Field Theory

Emilio Del Giudice

- Definition
  - Water
    - Gases are fully non coherent systems Liquids are systems where electron clouds are coherent Solids are systems where nuclei, too, are coherent
  - According to general principles of
    - Quantum Field Theory (QFT)
    - an ensemble of a large number of atoms/molecules which are made up of particles electrically charged (nuclei, electrons), and is coupled with the quantum electromagnetic fluctuations of the Vacuum
- The size of the region (Coherence Domain) where molecules are phase locked is the wavelength of the e.m.
  - in the case of water:≈0.1 mm
  - The electromagnetic field is trapped within the Coherence Domain
  - Water Coherence Domains include an ensemble of quasi-free electrons (0.13 per molecule).
- Finding
  - EZ-water may be charged negatively or positively depending on the charge of the surface forming it

Physical, theoretical analysis and biophysical app of activated water

Vladimir I.Vysotskii

- Water - most mysterious chemical compounds
  - Water
    - is a base of intercellular liquid
    - forms the transport paths for the transfer of vitally necessary chemical elements
    - forms the necessary state of these elements in the form of atomic and molecular ions
    - is active element of all biochemical molecules and organs in live systems
    - is the most universal solvent
    - The spatial structure of water agrees ideally with the secondary structure of a DNA macromolecule.
  - Memory
    - MRET activator
      - VLF (w=7.2 to 8 Hz) and amplitude (less 1 Oe)
    - Clathrate model
      - Clathrate micro cavity formed
    - Temperature effect
- callus tissues
- Viscosity
  - viscosity and coefficient of friction
    - Change 100 to 300 times
  - superfluidity
    - Joints
- Activation of water
  - Significant suppression of callus culture
    - in particular, Solanum rickii
  - Staphylococcus aureus and Escherichia coli microbiological cultures
  - Therapeutic
    - 30min is optimum
      - for prophylactic use
        - inhibition of growth cells of Ehrlich carcinoma
    - no negative side effects

Bicarbonate aqueous solutions enable drug copying

Vladimir Voeikov

- Electronically excited bicarbonate aqueous
  - Information transfer
    - of medical drugs
  - all aqueous has inorganic carbon
- carbonates
  - Necessary for Biosynthesis of organic compounds
    - Photosynthesis
    - carboxylation
  - Necessary for aerobic respiration
    - At cell, molecular and whole organism
    - Acquisition of the major source of free energy for living systems
- Water
  - under certain conditions it emits photons
    - "burning" of water
  - Bicarbonates promote stable non-equilibrium state of aqueous systems
    - Red/Ox processes of bicarbonate spring water exhibit circadian rhythms.
      - They are sensitive to variations of subtle environmental factors, e.g. to Moon phase

"life"began 2 Billion years ago from water

Marco Sacilotti

- challenges
  - atmosphere
    - N2 & ~10%CO2
    - no O2 & no O3
  - based on the charge separation mechanisms...
  - Why are leaves green?
    - 15% of reflectance (535 nm) does not explain the green colour
    - Absorption 55% at 535nm
    - 78% of absorbance will kill leaves in few minutes on sunny days.
    - leaves have to waste about 70% of absorbed light
  - Photosynthesis
    - The energetic bandgap between the molecules does not exist in Nature
    - driving force to separate (e-,h+) is absent
    - spent energy to separate (e-,h+) is absent
    - molecule's size and distance are nm dimensions
      - Quantum mechanics is necessary. Tunneling effects ?
    - Water has to be taken into account

Optical and studies measurements of EZ

Beverly Rubik & Harry Jabs

- Microscopy
  - Nafion, 38.1 MΩ Water, 1 µm carboxyl-PS microspheres

- Dynamic, Self-organization in EZ that is 2-D
  - Diagram of Flow at Interface

- EZ capture
- Study EZ Kinetics Optically
  - Please see presentation
- Informed water
  - All had identical skin wounds (Guinea Pigs) At 20 days, all of the TT-water drinking group completely healed Only 40% of the control group healed
- UV Absorption

Setting science free

Rupert Sheldrake

- 10 Dogmas
  - 1 Nature is a machine
  - 2 Total amount of energy and mass are fixed
  - 3 Laws of Physics are fixed
  - 4 Matter is unconscious
  - 5 Nature is purposeless
  - 6 All inheritance is material based
    - Genetically or epigenetically
  - 7 Memories and material traces are stored inside the Brain or stored somewhere in the body
  - 8 Mind is nothing but the Brain
    - all images, 3d are produced inside the brain
  - 9 Psychic phenomena are Illusions
    - the notion of telepathy is illusionary, probably because they are not educated enough
  - 10 Mechanistic medicines are the only kind that works
- Dogmas kill creativity
  - always inside the box
- The only time a belief system has conquered the world
  - All other therapies do not work or they are placebos
- Dogmas affect many aspects
  - Funding based on dogma 10, result no funding for alternative solutions
    - Decision makers base decisions on "Advisors" not their own education or knowledge

Electrolyzed water and its use in veterinary practices

Tim Crowe

- Diseases
  - Dehydration linked to many CV diseases = arteriosclerosis, hypertension, MI, renal, cystic fibrosis, stroke, and hydration can reverse changes
- Recovery
  - Postoperative Recovery => Hydration,
- characteristics
  - Tap water
    - pH 5.5 RO 5.0,128 Hz dia-resonator, Dissolved O2 10 ppm, Dissolved H2 2.3 ppb, ORP +650 mv RO 500, Cluster size 12-40
  - Electrolyzed
    - pH 8.5 - 11.5 42 hz resonator, Dissolved O2 8.6, Dissolved H2 690 ppb ORP -250 to - 850 mv, Cluster size 6 (hexagonal)
    - Found – ERW contained high conc. dissolved hydrogen and scavenged reactive oxygen species
    - Pt coated titanium electrodes suppressed the growth of cancer cell line
      - antioxidant against carcinogenesis
- Human and pet physiology
  - 1 trillion cells / 1 kg body weight, 1 million molecular changes per cell per second Oxygen = e driven aerobic, Lack of O2= anaerobic = ROS, Acidosis & Inflammation & Cancer, Dehydration, Blood Flow Problems ,Macrovascular, Microvascular, Platelets, WBC activation, Pets = 7-10 faster metabolism
- Hospital infections
  - results indicate that electrolyzed oxidizing water may be a useful disinfectant

Autothixotropy

Nada Verdel

- Imprint of molecular information Unusual properties of water
- Epitaxi
  - Transfer of molecular „information" from one substance to the other without mass transfer or chemical reactions.
- Enthalpies
  - Aged extremely diluted and succussed NaHCO 3 solutions have Higher conductivities than chemically analogous solutions
- Properties
  - Ageing
  - Influence of ageing
  - INFLUENCE OF MECHANICAL AND ELECTRICAL EPITAXY
  - the time domain of water
  - +
  - large-scale inhomogeneities in aqueous systems and/or exclusion zones
  - =
  - autothixotropy of water

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