### Foundations of Aetherometric Biophysics, Vol. II

# Human Experimental Bioenergetics

The Passive Bioelectric Meter (BEM) and its application to detect and measure distinct ambipolar and electron-plasma bioelectricities in human beings, followed by their integral system bioenergetics

## Abstract

## Part I - Introduction: the Antecedents

- 1. The ancient concept of anima or a double responsible for life
- 2. The begining of a scientific understanding of biochemical energy
- 3. The controversial begining of a scientific understanding of bioelectricity
- 4. Two centuries of electrical bioenergetic research
- 5. Why is the biological energy field not fundamentally electromagnetic?
- 6. The aetherometric explanation of Kirlian photography revisited
- 7. Reich's "orgone field energy detector"
- 8. Aetherometry and quantum biology: order and internal energy function
- 9. Attempts at measuring the potential of the human bioelectrical field
- 10. The aetherometric hypothesis of the ambipolar biofield and its potential
- 11. How to detect and measure at contact human ambipolar energy and the electron bioplasma
- 12. Contact detection and measurement of bioambipolar and DC action potentials in limb motion
- 13. The ambipolar radiant energy projections from the body: polarity-alternating and constant-polarity auras, and the negative interference of the "draw" effect
- 14. Provisional conclusions

# Part II - Application of the BEM to isolate and measure distinct bioelectricities - ambipolar, electron bioplasma, electrostatic and ionic - in the human body

#### Chapter 1 - Calibrating the Passive Bioelectric Meter (BEM)

- 1. BEM calibration with conductive coupling to alternating currents
- 2. Biofield meter calibration with capacitative coupling to 120V, 60Hz sine-wave power line
- 3. General methods

#### Chapter 2 - BEM Application to Experimental Human Bioenergetics

- 1. Human body thermometry and the dual, aetherometric-biophysical hypothesis of an ambipolar radiative biofield and an electron bioplasma
- 2. What is the capacitance of the insulated human body?
- 3. BEM indicator voltages with a trigger source and measurement of the ambipolar potential by contact of the BEM probe with the body surface (1)
- 4. What is the resistance of the human body? And what is its capacitance barefoot?
- 5. Application of the aetherometric commensurability of voltage, resistance and capacitance to the human body
- 6. The solutions to contact measurement of the ambipolar potential of the human body (2)
- 7. The surface electron bioplasma of the human body at contact
- 8. Body inductance and the resonant capacito-inductive frequency of the electron bio-plasma: invariant in the undisturbed state and variable once disturbed
- 9. How the human body responds to the propagation of time-varying electric fields: failure of the inverse square law and particularity of the proximal region
- 10. Systematic approach to the measurements obtained with a close capacitative coupling and different BEM circuits for the bio-ambipolar and the test AC potentials
- 11. Determining at the BEM the actual test AC voltages detected at a distance, and the portion of the bio-ambipolar potential revealed by an approaching trigger source
- 12. The dual discovery of the polarity-alternating aura and the "draw effect" of an electric field transmission
- 13. The physics of the draw and the polarity-alternating aura effects
- 14. Does the polarity-alternating aura relate to the body's "thermal radiation"?
- 15. Further ambipolar and thermal IR investigations (including the SeFe cell experiments)
- 16. The ascientific myth of the 60Hz photon conveying the "time-varying electric field" of power lines
- 17. Effects of "electromagnetic radiation" on the body, and vice-versa
- 18. Calibrating the BEM for use as a high impedance DC voltmeter
- 19. Measuring the electron bioplasma and electrostatic potentials of the human body with the BEM and the electroscope
- 20. Could the polarity-constant auras issued from the bioplasma and trapped electrostatic energy be transmitted ambipolarly?
- 21. Electric interference and the polarity-constant aura of the immobile insulated body: the draw effect as destructive interference and the P-A aura as a combination of destructive and constructive interference
- 22. Action potentials at the BEM with a trigger source, including oscilloscopic studies, and the ambipolar transmission at a distance of these potentials, alone or in combination with the oscillations of electrostatic charge.
- 23. Measurement of the polarity-constant aura of the immobile body, barefoot or insulated, at the electroscope, and the complete aetherometric theory of the superimposition and interference of different ambipolar auras.
- 24. How massbound charges trapped in a dielectric ambipolarly transmit the energy of their kinetic states at a distance in the form of a P-A aura
- 25. How massbound charges trapped in a (load or no-load) power line ambipolarly transmit the energy of their kinetic states at a distance in the form of P-A auras
- 26. The fundamental differences between ambipolar massfree electricity and massbound alternating currents, and how the former may also transmit the kinetic energy of direct currents and trapped electrostatic charge in the form of P-C auras.
- 27. Action potentials in the absence of a trigger source, at the BEM, electroscope and other electric instruments.
- 28. The integral bioelectric system and structure of the human body: segments, plexuses, and the antero-posterior and dorso-ventral axes of bioplasma polarity (1)
- 29. The superimposed structure of the ambipolar auras of the human body and ambipolar emission from cold-skin bioplasma (the Wim Hof effect)

- 30. Demonstrating how the internal ambipolar energy is distinct from the negatron bioplasma: the dual ambipolar/bioplasma BEM
- 31. The ambipolar polarity-constant aura emanating from the stationary human body
- 32. On negatron lattices and bi-laminar plasmas on the body, the earth and metals -
- and how the latter produce (or not) P-C auras of either polarity
- 33. How plantar polarity-constant ambipolar pulses are connected to breathing
- 34. Dorsal vs. ventral bioplasma gradients to the feet, along the anterior-posterior axis (2)
- 35. Dorso-ventral bioplasma gradients measured either differentially or directly (3),
- and operation of the bilateral BEM as reference integrator 36. Bilateral simultaneous antero-posterior bioplasma gradients along the body segments (4)
- 37. Proximo-distal bioplasma gradients in upper and lower limbs mapped with differential and direct methods (5)
- 38. Distal-to-distal bilateral bioplasma gradients in the upper limbs mapped with differential and direct methods (6)
- 39. Integrating the axial electric gradients of the skin bioplasma on the human body (7)
- 40. Biological regulation of the effect of permanent magnetic fields on the indicator voltage of the bioplasma antero-posterior gradient with the ballasted BEM.
- 41. Bioplasma responses along the antero-posterior gradient to permanent magnetic fields, as registered with the body-balanced BEM.
- 42. Biomagnetic effects on the bilateral, distal-to-distal gradients of the bioplasma.
- 43. Integrating the magnetic effects on the body's bioplasma
- 44. How atmospheric variables affect ambipolar transmissions

### Chapter 3 - Human Aetherometric Bioenergetics and Systems Integration

1. Discussion and conclusions re. the work so far presented

- 1.1. On method: the problem of accurately measuring potentials and the necessity to discern between different forms of bio-electricity
  - 1.2. Basic thermokinetic consequences from the discovery of a characteristic human ambipolar energy and potential
  - 1.3. Measuring the polarity-changing ambipolar aura at a distance, and discovery of the draw effect
- 1.4. Measuring the main antero-posterior bioplasma gradient at contact
- 1.5. Measuring the dorso-ventral and proximo-distal bioplasma gradients at contact, and the aetherometric discovery of the body's singularity of output power
- 1.6. The inexistence of an electromagnetic aura emitted from the human body and the non-photonic nature of the P-A auras emitted from either an AC source or the body
- 1.7. The discovery that all propagating AC or "RF"/"microwave" signals employ ambipolar transmission: biophysical effects on the body
- 1.8. The single channel BEM and the measurement of electrostatic and bioplasma potentials with the electroscope energy-projection method
- 1.9. Ambipolar polarity-constant auras from the bioplasma of the moving body, electrostatically charged or not
- 1.10. The fundamental distinction between ambipolar vs AC electricities: physico-mathematical model for ambipolar transmission of AC signals
- 1.11. Limb motion and action potentials: ambipolar, bioplasma, ionic and electrostatic manifestations
- 1.12. Internal ambipolar energy generation
- 1.13. The dual ambipolar/bioplasma BEM and its modification to detect the ambipolar polarity-constant aura of the stationary body
- 1.14. A complete aetherometric theory of the superimposition and electric interference of different ambipolar auras
- 1.15. How the bioplasma throttles down its indicator voltage (i.e. Burr's real problem), and the power that can be extracted from the body

- 1.16. Aetherometric theory of the bioplasma
- 1.17. An integrated electric diagram of the human body and the bioplasma gradient axes
- 1.18. The problem of indicator voltages in limb motion and action potentials
- 1.19. The problem of the indicator voltages in the ECG and Reich's oscillograph
- 2. The aetherometric model for the role of the heart in the electric system of the body 2.1. What is the power of the heart and how does it function electrically
  - 2.2. Fine analysis of the PQRST wave complex and its ambipolar frequencies
- 3. Ambipolar and bioplasma functions of the brain and nervous system: a delta-band ambipolar master clock investigated with novel BEM-analyzer EEG techniques.
  - 3.1. Brain electric frequency bands (" waves" or "rhythms")
  - 3.2. Our proposal: an ambipolar master clock (AMC) deployed by "delta waves"
  - 3.3. Modifying the BEM to determine internal ambipolar frequency emissions and to function as a power-proportional EEG frequency analyzer
    - 3.3.1. The objective of creating a very low impedance BEM
    - 3.3.2. The low-impedance DC capacitative coupling to the body
    - 3.3.3. The low-impedance simple BEM
    - 3.3.4. Single-band BEM detection of internal ambipolar signals
    - 3.3.5. The 3-band BEM analyzer and the indicator measurements of internal ambipolar parameters with saline-electrode couplings
  - 3.4. Basic application of the BEM-analyzer to electroencephalography (EEG)
  - 3.5. A note on controls performed with the single-band and the 3-band BEMs
  - 3.6. An extracurricular note on the alpha band and the Schumann frequency
  - 3.7. Pulsed DC emissions from the body surface: roles of heart and brain
- 4. Aetherometric view of the Chinese medical school of acupuncture
  - 4.1. Brief historical view of acupuncture
    - 4.2. The meridian structure of the body in acupuncture
    - 4.3. Aetherometric analysis of the postulated flow of Ch'i in the meridians
    - 4.4. Can referred pain provide validation of acupuncture?
    - 4.5. Two cautionary case histories mechanical lesions and latex toxicity
    - 4.6. The nature of acupuncture points, conduits and their location
    - 4.7. The implicit role of the nervous system in medical acupuncture
    - 4.8. Needle insertion and the magnetic nature of knotted points
    - 4.9. A note on acupuncture and body-image projections on the body surface
- 5. How the bio-ambipolar energy field and the bioplasma are produced
  - 5.1. Biochemistry of the oxidative phosphorylation metabolism
    - 5.2. The mitochondrial matrix as metabolic source of the bioplasma
  - 5.3. The mitochondrial emission of the ambipolar energy field
  - 5.4. The perinuclear cisternae may also emit ambipolar energy and re-energize the bioplasma
  - 5.5. How the bioelectricity and biochemistry of the mitochondrial matrix are restored: role of calcium phosphite

- 6. Gravity, massfree energy buoyancy and the human body:
  - its shape, surface tension, gravitational energy and anti-gravitic work
    - 6.1. How fertilization processes and normal development depend on gravity
    - 6.2. Conventional gravitic properties of the human body
    - 6.3. The human body as an enveloped viscous fluid
    - 6.4. The aetherometric gravitic and anti-gravitic energies of the human body
    - 6.5. Massfree energy densities of the body, and their relation to the principle of massfree energy buoyancy
- 7. An integral bioenergetics of the human biological system
  - 7.1. Recapitulation: the energy components of the human biological system
  - 7.2. Schneider and Kay's concept of exergy
  - 7.3. Why entropy is neither disorder nor order
  - 7.4. The aetherometric concept of biophysical order
  - 7.5. The two enthalpy functions: internal energy and total exhalpy
  - 7.6. Enthalpy functions and the autonomic nervous system
- 8. What, if anything, is the soul and its nature
  - 8.1. All that lives, dies sometime
  - 8.2. Is Ch'i the ambipolar power of the soul?
  - 8.3. Disputes over the nature of the soul
  - 8.4. The cosmic butterfly:
    - the metamorphosis of an ambipolar massfree being

References

Figures

Diagrams

Pictures

Appendix I - On converting the cylindrical treatment of the body into that of a parallelopiped by Malgosia Askanas PhD

Appendix II - Electron plasmas and their true temperature in metals

- 1. Quantum equivalence
- 2. Work-function and potential barrier
- 3. Energy and velocity distribution of an electron gas in metals: Maxwellian versus Fermi-Dirac statistics
- 4. The fundamental problems with the radiation laws and radiative transitions
- 5. Kinetic energy of electrons in a metal: Fermi energy and the Boltzmann constant
- 6. The real temperature of electron plasmas in metals: the errors of quantum theories and radiation laws
- 7. References