Biofield Scan: A Measure of Energy Field

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Abstract. Biofield is a complex, dynamic multi layered electromagnetic field that surrounds and fills the body. Biofield devices are used to assess the subtle energy field surrounding the object. These devices measure physiological and energy states by scanning the object's biofield and generating an image of its energy field. The importance of biofield scanning is to check insights into stress levels, organ energy distribution, emotional balance, and overall wellness of a person. These devices are mostly used in complementary medicine, energy based healing systems, meditation research, and personal well-being monitoring. This paper summarizes the various methods in biofield measurement, covering imaging techniques (GDV/EPI, PIP, aura interference), physiological methods (EEG, MCG), thermal and infrared imaging, biophoton detection, EMF measurement, and resonance frequency devices. The methodological difficulties, repeatability problems, and validation deficiencies are highlighted in this study.

Keywords: Biofield, Biophoton and Electromagnetic field.

1 Introduction

Biofield is defined as an organized field of energy and information that regulates the body's physiological and psychological functions [1,2]. It involves a number of healing mechanisms and is connected to cellular activity. Biofield scanning is important to check the status of physiological and psychological functions of a person and also to diagnose diseases before they manifest in the body [3,4]. In ancient Indian culture biofield is termed as prana, chakras, and nadis, whereas in Chinese medicine, it is termed as qi and meridians. This energy flows through the energy channels; harmony in this energy represents wellbeing, whereas disruptions lead to physical illness. From a modern science point of view, the biofield is an integrated electromagnetic emission from organs, biophoton emissions from cells, thermal radiation, and acoustic

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radiation, and acoustic vibrations[5]. Measuring the biofield remains challenging because the field is extremely subtle (nano- to pico-scale emissions) and interactions with the environment are complex. Also, there is no standardized acquisition or analysis protocol and validation is inconsistent. There are different devices available in the market to measure the biofield, like Kirlian photography, Gas Discharge Visualization (GDV), BioWell, Electro Scanning Method (ESM), Quantum Magnetic Resonator (QMR), Polycontrast Interference Photography (PIP), Resonant Frequency Imaging (RFI), Biofield measurement using Biophoton emission, and Infrared thermography. These devices have respective benefits and limitations that are discussed in this paper.

2 Method used to measure biofield:

There are different methods uses to measure biofield, discussed below

2.1 Electrophotonic imaging EPI/Gas discharge visualization (GDV)

In this technology high voltage is used to stimulate photons/electrons of the object. The working principle used here is Corona discharge effect [6]. The object is placed on the glass and a high voltage pulse is given to it and captures glow around the object because of the corona discharged. Softer base analysis is done of the data and converts images from it. This method provides insights into physical, emotional, mental, and spiritual well-being by mapping the energy readings to various organs and systems using ancient Chinese meridian linkages[7]. The main limitation of this method is Sensitivity to moisture, pressure; sector mapping validity is debated. Examples Kirlian photography, Gas Discharge Visualization (GDV), BioWell.

2.2 Biofield photography method

In this method used an analog camera to scan the biofield. Light is filtered for particular bandwidth to get interference patterns of the biofield then color mapping algorithms to analyze for example is PIP [7].

2.3 EMF Detectors and Resonance Devices

In this method a hand held emf sensor for detecting electromagnetic fields around the body. It works on the principle that all mental activity involves electromagnetic energy information exchange [8].

2.4 Biofield measuring using Thermal and Infrared Imaging

In this method Infrared cameras are used to capture thermal images of the body's surface and can identify subtle alterations in the underlying tissues, indicating metabolic, vascular, and neurological diseases. Infrared cameras generate high-resolution thermal images and have a high temperature sensitivity. A thermogram, which displays temperature patterns in various colors or gray tones, can be produced after infrared cameras identify the infrared radiation emitted by the body's surface and transform it into electrical signals [9,10]. It shows physical parameters more than subtle energy of the object. Use in medical diagnosis to detect cancer in early stages.

2.5 Biophoton Emission Measurement

Naturally, every living organism, including humans, animals, plants, even microorganisms, emits an ultra-weak light which is referred to as biophoton emission. It is the outcome of metabolic processes, particularly those that include reactive oxygen species. The biophoton is measured using photomultiplier tubes, charge-coupled devices (CCDs), and other sensitive detectors. To measure the biophoton, a darkroom is required [11].

2.6 Electrophysiological parameter Measurement

It involves detecting and analysing the electrical signal from the human body to assess function of various organs like Electrocardiography (ECG) (heart electrical activity), Electromyography (EMG) (muscle electric activity) and Electroencephalography (EEG) (brain electrical activity). These contact based devices measure signals like nerve conduction velocity, action potential and give functionality of the various organs. Nowadays these devices are used to measure stress level depression and personal wellbeing [12].

3 Biofield measuring devices:

There are various biofield devices used for scan the human body, construction and working of those devices are discussed below.

3.1 Kirlian photography

Semyon D. Kirlian created Kirlian photography in 1939 [13]. The visible "biofield" surrounding the photographed objects is revealed by the Kirlian photographic method. Over the years, these photos have generated a lot of myth and debate.

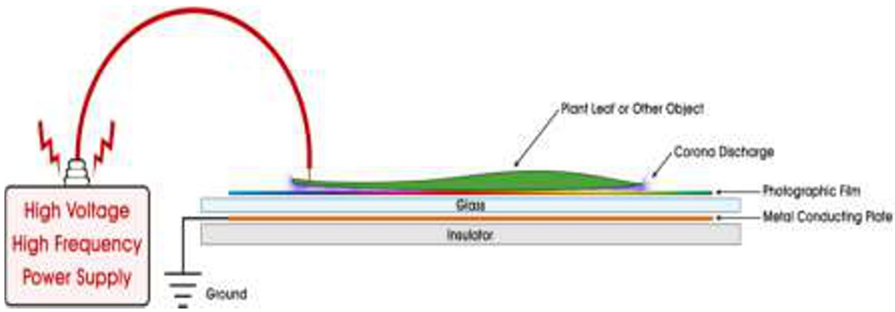

Figure 1 Kirlian photography experiment [13]

In this technique, a metal plate is covered with a sheet of photographic film as illustrated in Figure 1. The object to be photographed is positioned on top of the film. The metal plate is subjected to a high voltage current to produce the initial exposure. The electrical coronal discharge between the metal plate and the item was then captured (biophoton). When the film is developed, the Kirlian photograph, which displays a light-glowing outline surrounding the object being photographed, becomes visible. This technique is used to scan living and non-living objects. Kirlian photography is simple and designed, but needs a high voltage supply. It is no longer a functional device[7,14]. GDV and Biowell devices are working on Kirlian photography principles.

3.2 Gas Discharge Visualization (GDV)

The consistency, coherence, and intensity of the human electro-photonic glow, as determined by the GDV instrument, are all affected by health parameters. While a negative energy state would be perceived as dull and asymmetrical, a healthy positive condition is depicted as vivid and symmetrical [15].

GDV gram parameters collected during routine patient investigations can be easily calculated by specially created programs. The GDV-gram is appropriately characterized using the following indices: GDI backdrop area, average intensity, energy, normalized area, integral area coefficient, emission coefficient, form coefficient, fractality coefficient, and dispersions of each of the all mentioned parameters. GDI background area (S) is expressed in pixels and is an absolute value. The assessment of light intensity averaged over the image's region is called Averaged Intensity (I). The experiments yield the formula E = S * I * 0.00002 for the energy (E) of light in Joules [16]. It is used for scanning living objects. Due to the use of modern technology, it is simple to use compared to Kirlian photography.

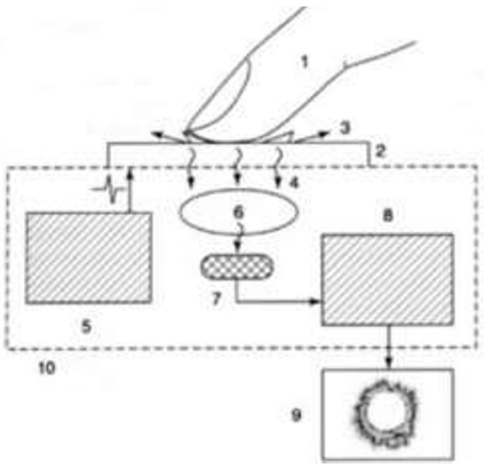

Figure 2 The experimental scheme of the gas discharge visualization technique [17]

The several GDV components are depicted in figure 2 and are as follows: 1. the subject of the study; 2. the coated optical glass: 3. Gaseous discharge 4. optical radiation; 5. impulse generator; 6. optical system; 7. camera for a charge-coupled device; 8. video digitizer; 9. personal computer: 10. The gadget box.

3.3 BioWell

It is a modified form of the Gas discharge visualization device. In order to give a thorough examination of the energy field, the Biowell device incorporates a number of essential components like Electro-Photonic Imaging Camera, sophisticated software for data analysis and interpretation. Electromagnetic Field Generator, Bio-Well Server to handle data analysis and Visualization software.

The scanning process adheres to a strict protocol. Scan start with placing each finger on the glass electrode of the gadget after that weak electrical current applied for milliseconds. Photonic emissions and electron cloud formation are captured by an Electronic discharge dedicated camera. Data is transmitted to digital to analyze software. This compact device measures the human biofield through fingertip scanning, but it has limited application [18,19].

3.4 Polycontrast Interference Photography (PIP)

This technique provides a moving, real-time view of the body's biofield, or energy field. The PIP system displays color patterns that correspond to the energy of a body. Subtle energy photons are light energy packets that are interfered with by the human energy field. The human biofield interferes with surrounding light both when incident rays go in the direction of the object and when reflected rays bounce off it. The computer application creates a graphic depiction of the biofield by analysing the various light intensities [6,20,21].

Figure (3a) Setup and (3b) image of Polycontrast Interference Photography [21]

Utilizing the PIP is really straightforward. The object is positioned in front of the white wall. Four feet above the object's head, a complete white spectrum light is positioned. The purpose of the lighting is to standardize the overall effect of light intensity. The topic that is embedded with a CCD is then the focus of the video camera. The light signal is changed into an electrical signal by this CCD. A colored image can be produced by using electrical signal intensities to represent the colors in the color spectrum [22]. It is a very simple method to scan a biofield, but it needs a specific room to scan. Living and non-living objects can be scanned using this method

3.5 Electro Scanning Method (ESM)

While using Kirlian photography, Harry Oldfield noticed that in addition to light, the body radiated radio and sound frequencies. By applying the Doppler principle, which uses a frequency generator and a group of crystals to send sound waves within the body. The sound level meter detects the resonant electromagnetic waves. This technique is used to extrapolate relevant data that may be analyzed to determine the best strategies for rebalancing the body's energy. It provides three-dimensional numerical data in decibel levels regarding the energy field of a body at both the surface and close range [21]. This method has human influence that could alter the outcomes. The electrical scanning device process is depicted in Figure 4.

Figure 4. Setup of Electro Scanning device [21]

3.6 Resonant Frequency Imaging (RFI)

When electrical impulses raise a neuron's voltage above its threshold can neurotransmitters be produced. Along the neurological path, the emotional and psychological energies are transmitted throughout the body as electrical impulses. A biofield is created when electromagnetic fields from these transmissions spread outside of the human body. Electric currents as high as 55 mV–3 V are carried by the nerves or synapses. Higher currents result in larger electric fields [7]. Megahertz (MHz) and gigahertz (GHz) frequencies are measured by the RFI instrument. The device is made up of an antenna and a frequency counter. The antenna's BNC adapter needs to be attached to the frequency counter's BNC connection in order to obtain a reading.

The power switch, mode switch, range switch, and gate button are four primary switches of the frequency instrument. The frequency counter can be used in the 250 MHz or 2.8 GHz range using the range switch. The digital frequency meter's gate button is used to adjust the device's resolution, and its mode switch is used to record the frequency measured. A user can measure distinct frequency ranges of different bioenergy fields throughout the body with this device [23]. Figure 5 illustrates how frequency measurements are converted to colors in the visible light spectrum using the RFI software and the RFI digital meter.

Figure 5 RFI image [23]

3.7 Quantum Magnetic Resonator (QMR)

This technique looks at electromagnetic signals to determine a person's health. The trillions of cells that make up the human body are constantly growing, dividing, developing, dying, and regenerating on their own. More than 25 million cells are split every second, while the renewal rate is 100 million each minute, according to research. Cells inside the human body constantly emit electromagnetic signals to the outer world throughout this self-governing process. The cell body, which is made up of electrons and a charged nucleus, emits and absorbs energy during each action, which explains the entire process [24]. The image of Quantum Magnetic Resonator is shown in Figure 6.

Figure 6 Image of Quantum Magnetic Resonator [24]

Through the use of a sensor device, the QMR analyzer receives the body's released energy and magnetic signals. Microprocessors are used to boost the intensity of very weak input signals. The signals are then compared to the standardized quantum spectrum that is included in the computer system. Following a comparison using the Fourier technique, the individual receives a final health report. The QMR setup is depicted in Figure 6. The kidney, liver, heart, and other organs are among the more than thirty functions it can identify. This gadget also measures blood sugar, vitamins, and minerals. [24].

4. Summary of the various biofield measuring devices

Table 1. Summary of the various biofield measuring devices

S. No.	Method/ Device Inventor / Year	Signal / Source	Detector / Experimental Setup	Description	Limitations

1	(Kirlian Photography) Semyon Kirlian, 1939	Biophoton / High frequency high voltage power source	Conducting plate, photographic film, high-voltage electrodes attached to subject	Produces corona discharge image showing a light field surrounding the object / body part	Requires high voltage, sensitive to moisture & pressure
2	GDV Dr. K.G. Korotkov, 1995	Biophoton / High-intensity electromagnetic field	Advanced sensors, finger electrode plate, specialized software	Captures electron & photon emissions from fingertips, generates corona discharge images representing biofield	Affected by electromagnetic field, pressure, sweat & human interference
3	Bio-Well Dr. K.G. Korotkov, Late 1990s	Biophoton / High-intensity electromagnetic field	Electro-Photonic Imaging Camera, Software for energy mapping	Digital upgrade of GDV with improved calibration, graphical analysis of organs & stress level	Influenced by environmental factors
4	PIP Dr. Harry Oldfield, 1980s	Biophoton / Full-spectrum visible light	Standard analog/digital camera with optical filters (320–380 nm)	Detects interference of photons with biofield producing false-colour images of energy distribution	Requires controlled lighting room, operator-dependent
5	ESM Dr. Harry Oldfield, 1980	Sound & radio-frequency interaction / No external radiation source	Frequency generator, crystal sensor array	Maps areas of energetic disturbance in body tissue by scanning and converting signals into	Manually operated, requires trained operator, inconsistent repeatability

				3D display	
6	RFI Innovation Technologies & Energy Medicine	Electromagnetic frequencies / No external source	Frequency detector sensors	Measures harmonic (healthy) & disharmonic (diseased) frequencies to create an image of the energy field	Manually operated, subjective interpretation
7	QMR	Ultra-weak magnetic field of the body	Optical photodetectors tuned to quantum resonance	Detects resonating magnetic signatures of organs/cells through inductive coupling	Low sensitivity, noise interference, still experimental
8	Infrared Thermography Kalman Tihanyi, 1929	Infrared radiation emitted from body / No external source	Infrared thermal cameras, convert IR signal into electrical signal, thermogram	Detects temperature variations related to vascular, metabolic & neurological changes	Requires environmental stability, manual interpretation
9	Biophoton Emission Measurement Prof. Fritz-Albert Popp, 1970s	Biophotons (ultra-weak spontaneous photon emission)	Photomultiplier tubes (PMT) and ultra-sensitive photon counters in a dark room	Measures ultra-weak photon emission believed to correlate with biological coherence and energy state	Requires dark room, expensive, long measurement time, low signal

5. Benefits and limitation of biofield measurement technique

After reviewing the various articles and research papers, it was found that although this approach has many benefits over the existing medical scanning methods, there are still some disadvantages, which is why these devices are not as well-known in the medical industry. Benefits of the biofield measurement methods

a. Quick and simple method of diagnostic physical and mental health.
b. Forecast illness before it appears in the human body.
c. Radiation-free, non-invasive, and side effect-free.
d. Not dangerous to Pregnant women, patients with pacemakers and prosthetic valve replacement

These devices are not as well-known in the medical field since, despite the fact that this approach has numerous advantages over the current medical scanning methods, there are still certain drawbacks, according to a survey of the many papers.
Limitations of biofield measurement technique's

a. Performance of the Bioscan devices is mostly influenced by surrounding conditions, therefore cannot be reliable on biofield devices.
b. Most of devices are manually operated (device operator biofield affect the quality of results)
c. There is different form of the biofield signal, but the existing devices work on single mode of signal. Some of them just concentrated on only one part of the body.
d. Physiological variables interfering (e.g., inflammation, medication, hydration status).
e. The absence of a benchmark standard to compare the device (an inadequate reference standard may restrict validation and impact accuracy)

6. Conclusion:

The biofield is the energy released by every object in nature. The individual's physical and mental well-being are displayed by the biofield scan device. Although biofield methods like GDV/EPI, EMF, EEG, and infrared and Biophoton emission methods provide insight into the object, but no standardization, reproducibility, or multimodal validation. A new generation of scientifically grounded multimodal bioscan systems combining imaging, electrophysiology, and thermal sensing may also bridge this gap, less influenced by the environment and human interference. This can be applied to interdisciplinary research, technological innovation, and impactful applications across wellness, integrative medicine, and healthcare.

References

1. Light, V., & Rays, G. (2005). The Electromagnetic Spectrum.
2. Power, E. A. (1964). Introductory quantum electrodynamics. American Elsevier Publishing Company
3. Fornaciari, C. J., & Lund Dean, K. (2001). Making the quantum leap: Lessons from physics on studying spirituality and religion in organizations. Journal of Organizational Change Management, 14(4), 335-351.
4. Chhabra, G., Prasad, A., & Marriboyina, V. (2018). Novice methodology for detecting the presence of Bio-Field. Int. J. Pure Appl. Math, 118, 149-154.
5. Ekspong, G. (1999). The dual nature of light, as reflected in the Nobel Archive. Proceedings of the American Philosophical Society, 143(1), 42-49.
6. Oldfield, H. (2006). The human energy field and the invisible universe. Subtle Energies & Energy Medicine Journal Archives, 17(2).
7. Domuschiev, I. (2024). The human biofield and methods for its measurement.
8. Burnei, G., Hodorogea, D., Georgescu, I., Gavriliu, Ş., Draghici, I., Dan, D., & Draghici, L. (2012). The electromagnetic bio-field: clinical experiments and interferences. Journal of medicine and life, 5(2), 139.
9. Kesztyus, D., Brucher, S., Wilson, C., & Kesztyus, T. (2023). Use of infrared thermography in medical diagnosis, screening, and disease monitoring: A scoping review. Medicina, 59(12), 2139.
10. Prakash, S., Chowdhury, A. R., & Gupta, A. (2015). Monitoring the human health by measuring the biofield" aura": An overview. Int J Appl Eng Res, 10(2765427658).
11. Kobayashi, M., Kikuchi, D., & Okamura, H. (2009). Imaging of ultraweak spontaneous photon emission from human body displaying diurnal rhythm. *PLoS one*, *4*(7), e6256.
12. Khandpur, R. S. (Year). Biomedical instrumentation technology and application handbook (2nd ed.).
13. Jakovleva, E., & Korotkov, K. (2013). Electrophotonic Analysis in Medicine. GDV Bioelectrography research.

14. Rowold, J., & Hewson, P. D. (2020). Biofield frequency bands Definitions and group differences. Global Advances in Health and Medicine, 9, 2164956120982568.
15. McCraty, R., Atkinson, M., Tomasino, D., & Bradley, R. T. (2009). The coherent heart heart-brain interactions, psychophysiological coherence, and the emergence of system-wide order. Integral Review: A Transdisciplinary & Transcultural Journal for New Thought, Research, & Praxis, 5(2).
16. Korotkov, K., Williams, B., & Wisneski, L. A. (2004). Assessing biophysical energy transfer mechanisms in living systems: the basis of life processes. The Journal of Alternative & Complementary Medicine, 10(1), 49-57.
17. Suru, (2024) What is the Bio Well Camera human energy field Scan?
18. Prakash, S., Chowdhury, A. R., & Gupta, A. (2015). Monitoring the human health by measuring the biofield " aura": An overview. Int J Appl Eng Res, 10(2765427658).
19. Miraglia, F. E. (2024). Unreliability of the gas discharge visualization (GDV) device and the bio-well for biofield science: Kirlian photography revisited and investigated. Journal of Anomalistics Volume, 24, 120-150.
20. Labuschagne, D. B. (2003). BIOFIELDS: Their Detection, Measurement &c Behaviour. Victoria University-ResearchGate.
21. Solomon, J. (1999). Harry Oldfield Inventor of Electro-Scanning and Polycontrast Interference Photography, Energy Medicine, issue 41
22. Vasishta, V. G., & Vasishta, W. C. D. V. (2008). Quantum Magnetic Resonance Therapy (QMR): A novel palliative treatment for terminally ill cancer patients.
23. Resonance Imaging Field (RFI) Aura System & Brain Imaging - ITEM's Products
24. Quantum-manual-4-3-0