

Vitality  Universe  
**Bioscope Test Report**

**Osmodyn**  
**Physical Water Treatment Device**



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Bioscope mis au point par le chercheur canadien Pier Rubesa, est un dispositif technique qui permet la détection, l'enregistrement et l'analyse des signaux biologiques. Pier Rubesa, a mis en évidence les champs électriques qui animent l'eau après passage dans le double vortex Osmodyn.

Cette information électrique naturelle Osmodyn qui interagit au plus profond de notre organisme a également été scientifiquement confirmée par le Professeur Marc Henry.

Ses différents tests ont détecté la présence de champs électrodynamiques subtils dans l'eau du vortex Osmodyn et ont mis en évidence **la signature unique en temps réel du procédé.**

Pier Rubesa a mesuré l'effet NATUREL produit par le vortex Osmodyn simplement au contact de l'eau stagnante, sans aucun mouvement ni déplacement d'eau dans le vortex:

**l'apport naturel d'électrons par le dispositif Osmodyn et son transfert à une eau stagnante**

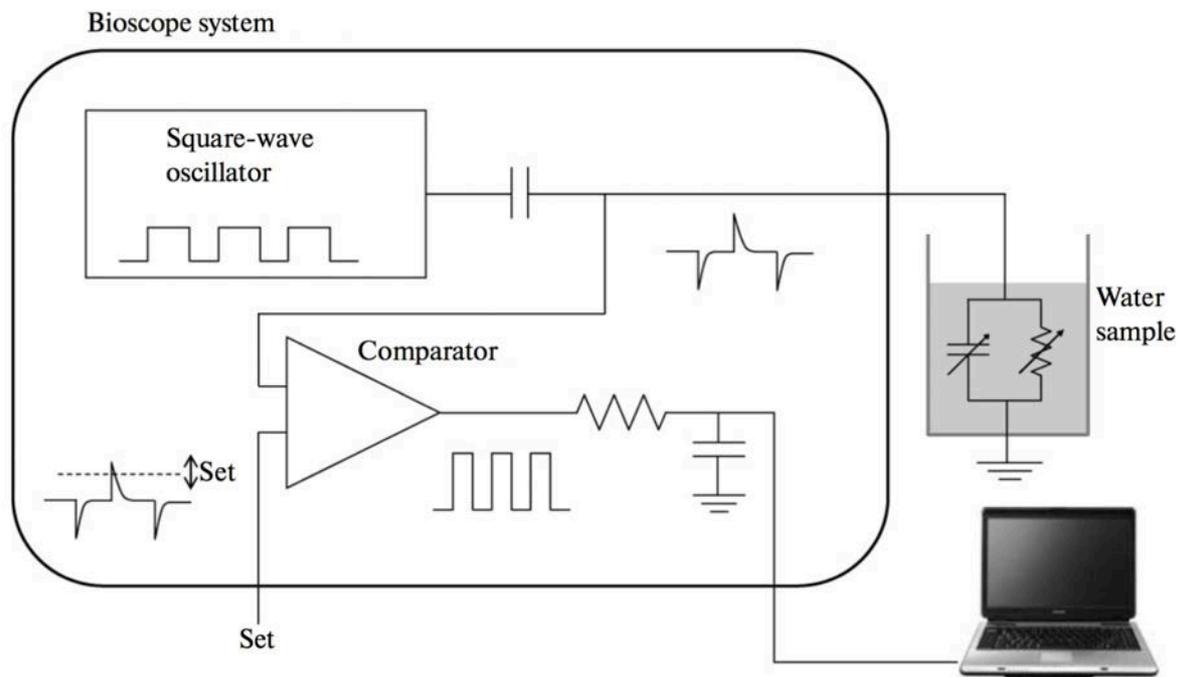
## **Introduction to the Bioscope System**

The Bioscope is a novel patented diagnostic technology that has been under active development by a Swiss company since 2006. The Bioscope System, consists of an electronic sensing device and specialised software for signal recording, editing and spectral analysis. The Bioscope detects changes in the electric properties of a wide range of liquid or biological samples such as water, plants and animals and other organic substances and can test liquid or biological samples under diverse environmental conditions.

The main constituents of the Bioscope System are a digital signal generator, a signal electrode and a detector circuit. The system is connected to a laptop computer via a USB port that powers the detection circuit and also contains specialised software for recording and analysing the resulting signals. The Bioscope System has been used by Swiss and European laboratories to distinguish different processing stages of various fruit and vegetable juices [1]; in the testing of global food quality [2]; and in the evaluation of water quality [9].

The Bioscope method can be compared to the measurement technique presented by Lewis et al. [5], which describes electrical impedance spectroscopy on piezoelectric materials and ultrasound transducers. Similar methods have been used in food quality measurements [3] and for medical applications such as the investigation of tissue properties [4].

The Bioscope System generates a low frequency electrical square wave signal, which is capacitively coupled to an electrode. The electrode can be coupled to a liquid or solid sample by immersion or proximity, and functions as an unipolar electrode in contrast to the typically used dual coaxial electrode systems [6, 7]. A detection circuit monitors the voltage on the electrode. Changes in the detected signals are a reflection of changes in the sample's electric properties. The detection circuit monitors the time that the measured voltage is above a certain threshold and outputs a DC voltage describing the load that the sample represents. Thus the sample properties being probed are a combination of dielectric permittivity and conductivity.



**Figure 1. Bioscope System Block Diagram** **Analysing Bioscope Signals**

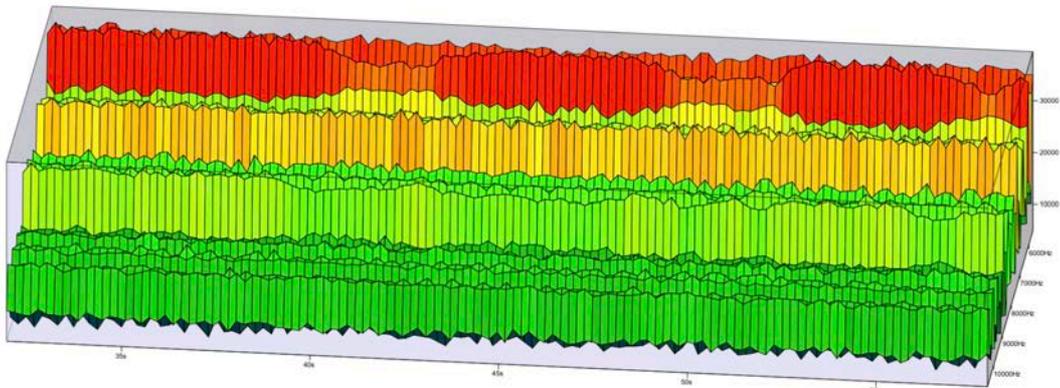
The analysis of Bioscope signals is accomplished with the *IdentiWave* spectral analysis software using FFT (Fast Fourier Transform) algorithms. Each signal is decomposed into its constituent harmonic components with the extraction of frequency (**f**), amplitude (**A**) and phase (!) values for each harmonic. The changes in these values represent the vibratory information that is present in each tested sample. The information is directly

related to the electrical characteristics of the sample. Any difference in the electrical state will be reflected as a change in the spectral content. The quality of the inherent electrical state that is detected by the Bioscope System, is unique to each type of sample that is tested - i.e. water, plant matter, etc. The interpretation of Bioscope signals is based on type of sample, the testing environment and the type of treatment used.

### **about The Graphs**

In order to interpret the differences between samples and in turn draw informed conclusions with respect to the data, it is necessary to understand the significance of the analysis images and graphs that are presented as figures in this report. The purpose of this section is to briefly explain the meaning and significance of these figures.

### **Surface Spectrum**



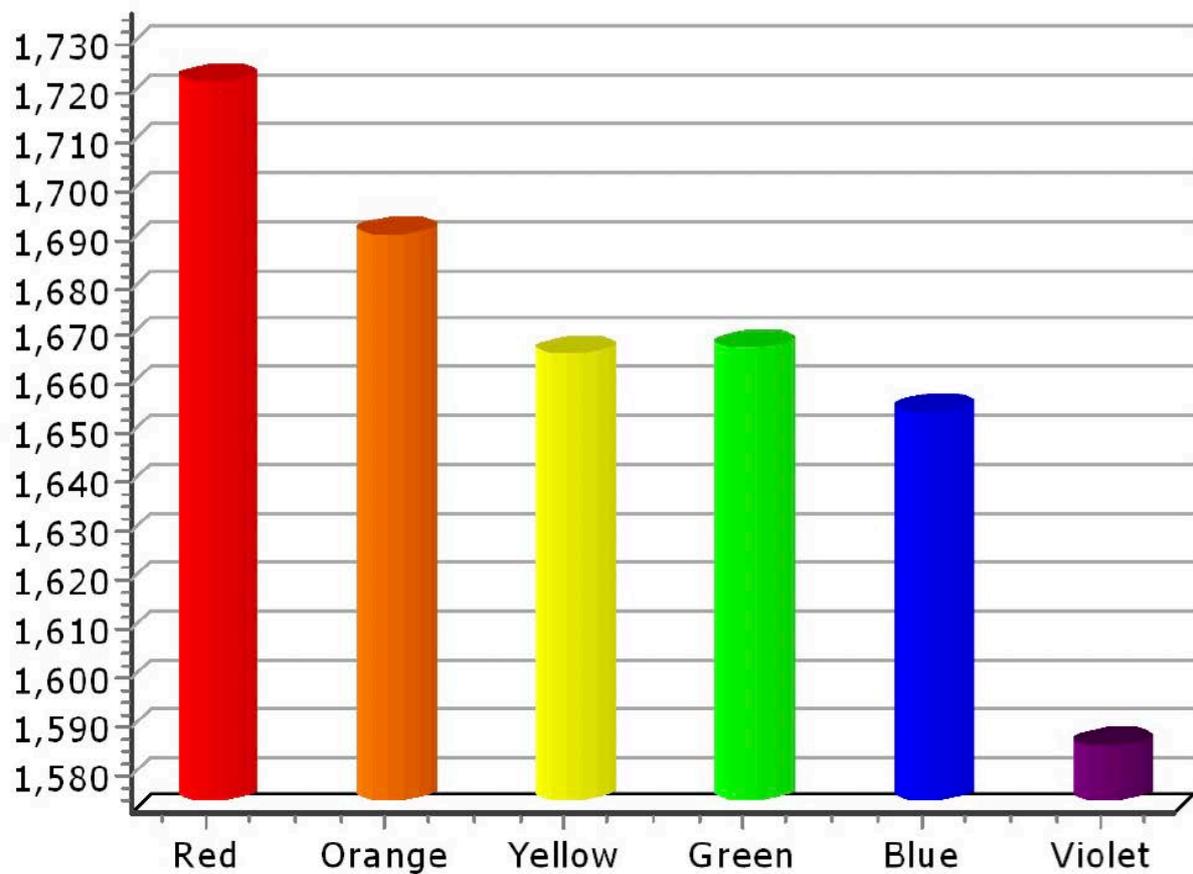
The Surface Spectrum displays the dynamic qualities of the electrical flux in the sample. Generally, samples are presented side by side. The axis in the image are as follows: x axis - maps the time of the sample in seconds; y axis - maps the frequency band of the analysed data; z axis - maps the amplitude in electron volts. A significant factor in these graphs is the low frequency modulation that is often observed in

### Spectral Amplitude

biological and bioactive systems which indicate the organisation of energy at specific frequencies. Low frequency signals are assumed to support biological processes as the varying energy flux will have repercussions at higher frequencies via resonant mechanisms which may in turn influence various functions in biophysical and biochemical reactions.

sample will react to the excitation signal that is emitted by the Bioscope by either absorbing the emitted energy or by reflecting it. Higher values are an indication of reflection and lower values are an indication of absorption.

The experiment reports also include a chart that maps the energy value per frequency component, also referred to as the harmonic partial. Typical Bioscope experiment reports provide amplitude values for the first 20 to 30 harmonics above the excitation frequency. The amplitude of harmonics that are higher than this are very small and are thus susceptible to electrical noise and distortion, for this reason we typically discard them.



The average **Spectral Amplitude** displays the average spectral energy that is detected in each of the measured samples. A liquid or biological

## Testing Protocol

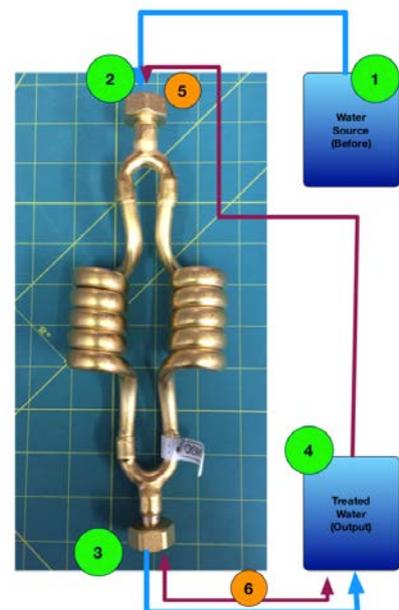
For the purposes of this experiment, demineralised **water** samples were tested in the laboratory on top of a non-conducting wooden table using a surgical steel needle electrode. The electrode is placed in contact with the water sample and a 30 second recording is made. Recordings are made for each subsequent sample. The recorded signals are analysed using the **IdentiWave** spectral analysis software where the spectral information is extracted.

**Figure 2.** The Bioscope needle electrode in contact with a water sample.

## Experiments

We performed six different water experiments in order to determine the effects on water quality by the Osmodyn physical treatment device. The tests are as follows:

1. Osmodyn Device In Contact With Water
2. Water Before & After Pump
3. Water Before & After Osmodyn 1
4. Water Before & After Osmodyn 2
5. Osmodyn Water Recirculation (1 Minute)
6. Osmodyn w. Magnetic Spheres



**Figure 4.** Test points used in the experiments.

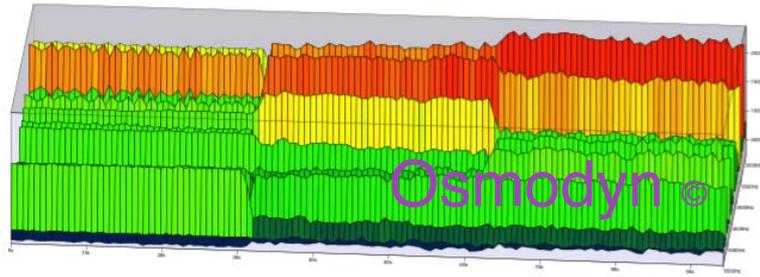
The results of our findings can be found in the following pages.

The **Bioscope Model 3000** prototype was used to test the samples. Bioscope calibration can be compared to an optical microscope where the changes in calibration are equivalent to the magnification and focus settings. Different calibration settings were used to test the samples and these are noted in the results page for each test that was performed.

**Figure 3.** Each test was performed using demineralised water.

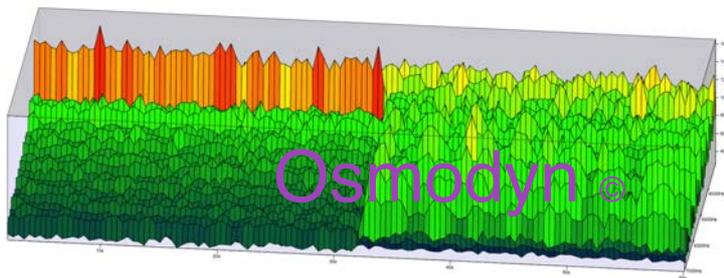
Our tests of the Osmodyn physical water treatment device show that the device has an influence on the electrical quality of demineralised water.

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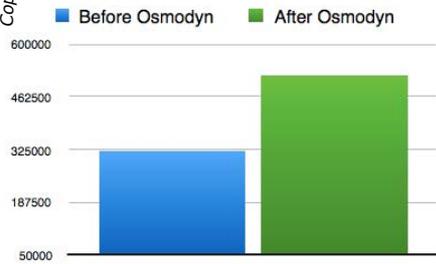
**Figure 5.** The Surface Spectrum (3 kHz - 5 kHz) between the Bioscope reference signal (left), demineralised water sample (center), and demineralised water in contact with the Osmodyn device (right).

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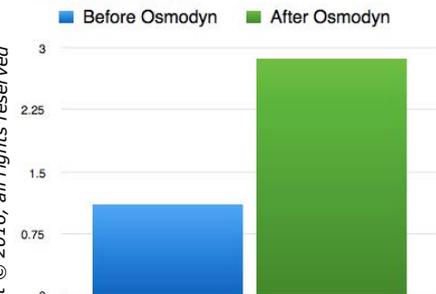
**Figure 20.** The Surface Spectrum (4 kHz - 7 kHz) showing a mid-band perspective of the electrical field dynamics. Non treated water is on the left and Osmodyn treated water on the right.

**Spectral Amplitude**



**Figure 21.** Average Spectral Amplitude (in eV).

**Spectral Phase**



**Figure 23.** Average Spectral Phase (in degrees).

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**Experiment 1** shows that the device materials react with the electrical charges in water rendering the water more electrically active by slightly increasing the capacity of the water sample to attract charge (Fig. 6) and neutralising the electrical signal phase (Fig. 8).

**Experiment 4** was a repeat of the Osmodyn physical water treatment system to validate the influence of the device using a different Bioscope emission frequency (214 Hz). Similar effects on the electrical qualities were observed with a decrease in electrical signal permittivity (Fig. 21) and an increase in electrical signal phase (Fig. 23). The most notable difference observed between the treated and non treated water was the organisation of electrical signal information across a wide frequency range (Fig. 20).

**Conclusion:**

The quality of water's electrical organisation can play an important role in chemical, biochemical and functional properties in systems where water is used. A decrease in the permittivity (Spectral Amplitude) is an indication that the water resists the exchange of electric charge. An increase in electric signal flux (Spectral Phase) indicates that the water carries increased electrical potential. The overall function of the Osmodyn physical water treatment device clearly modifies the electrical quality of the tested waters rendering it less prone to oxidation while increasing it's overall electrical flux potential

**Pier Rubesa** Director of Research & Development Vitality Universe sàrl - Yverdon-les Bains - Switzerland

Avril 2016

Rapport 6 Partie

### Spectral Amplitude

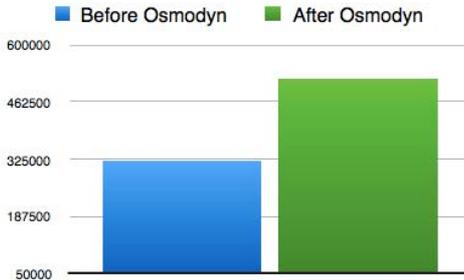


Figure 21. Average Spectral Amplitude (in eV).

### Spectral Phase

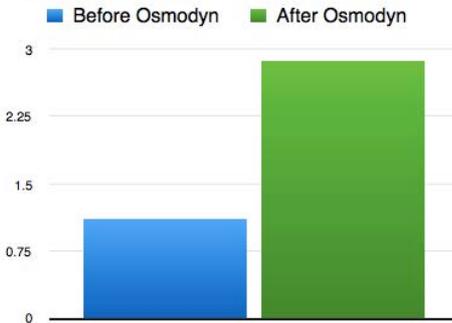


Figure 23. Average Spectral Phase (in degrees).

Signature exceptionnelle de l'eau vortexée par procédé Osmodyn:

« La dynamisation par l'ensemble Osmodyn avec vortex produit une large gamme de basses fréquences et un apport naturel d'électrons : une eau plus résistante à l'oxydation et bénéfique au support biologique »