

Characteristics of Human Body Sensoring
towards Electromagnetic Waves in Space

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Human body works as a kind of tuning filter for the electromagnetic waves in space. The work can be interpreted in terms of the modelling of the surface of the human body as an equivalent circuit formed of the electronic components of inductance, capacitance and resistance, L, C, and R, respectively. The features of the work of each individual much differ from each other among the individuals, which may be taken as a good mark of the condition of the human in concern with the safety control problem.

Some insoluble inorganic compounds such as silver iodide, cupric sulfide or lead sulfide, have been found about 25 years ago by Prof. Pungor of Hungary to be sensitive to the ionic species and its concentration in aqueous solution. The phenomenon found has been named as the ion selectivity and those compounds as the ion selective electrode, ISE. The ISE's are now used very widely in various fields of analytical, environmental chemistry and others.

It has been noticed recently that the ISE's are classified into two groups, one which is sensitive to the external electromagnetic waves and the other not.¹⁾ They can be identified by seeing if their outputs are affected by the electromagnetic shielding. The shielding effect can be interpreted in terms of the fact that the surface of the electrode is taken as a circuit of L, C and R and the ISE's which get shielding effect are dominated by the capacitive nature of the electrode and

those of no concern with shielding by the conductive or inductive one.

More interestingly, it has been found that the human body works as an antenna for the electrodes of the former category when the body is connected to the part of the electrode. As the output of the electrode connected to the body is analysed, it is evidenced to be formed of two components, one of a few killo Hz and the other of 50 Hz, that of the line. It is evident that the ISE is working in this case as the attenuator for the external power, also as a kind of amplifier with the work of the intrinsic power supply of the electric voltage of the electrode itself. Experimentally, the electrode has shown a correlation time of a few killo Hz range towards the external electric impact. Accordingly, the component of the higher frequency must refer to the attenuating resonance of the electrode. The lower frequency component will refer to the through power of the commercial electric current.

The point of the latter finding is the difference of the attenuated/amplified power of the external waves. An enormous difference can be seen with respect to the relative intensities of both components among different personals, and among the sites or other conditions of the part of the human bodies. Physical or ecological concern of the present finding with the safety problem may be referred to as a fact of interest.

REFERENCE

- 1) S. Fujiwara, Pure & Appl. Chem., 59, 531-534(1987).