

AN ELECTRON REMINISCENCE DEVICE - MEMOBRAIN

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Abstract

This paper puts forth the author's implementation of a device which will be able to make the brain remember the past, hidden and lost memories which were actually not destroyed. The device Memobrain has the capacity to energize the brain cells which got overlapped due to millions of newer cells. This device provides a type of electrical synapses in the form of electroconvulsive shock to the Grey matter (Hippocampus) of the brain which will be able to bring backs those hidden and covered memories along with the present ones. The working principle of this device will be very similar to the electron energy band gap from valence band to conduction band on receiving external energy. As the brain does not have the capacity to lose the data it perceived, it stores its data and information in some part of the memory region which is normally known to be as hippocampus. The device will be a type of Helmet worn on the head simply as a normal bike helmet but with sensors fitted in it for signals.

Keywords: *Memobrain, electroconvulsive, hippocampus, reminiscence, Grey matter.*

I. Introduction

Like primitive engineers faced with advanced technology, machines must catch up with the latest technologies to make the technologies more advanced by memorizing all the techniques learnt at the childhood. Here the author introduced a unique type of machine which helps in bringing back all the memories which we either forgot or did not remember about its occurrence. Our brain (mind) is generally divided into two parts-conscious mind and subconscious mind. Conscious mind remember only those things which we want to remember or dealing with it at present. Subconscious mind is the one which holds all those memories which we did not bother of its occurrence but took place in our vicinity in our presence. We Homo sapiens generally cannot remember all past memories which took place in our childhood days. We think those memories are destroyed from our brain but in real this does not occur. Those memory cells get overlapped by our latest memory cells. With the help of this device those memories which we don't remember but are

very much in use can be recovered easily. The devices sends a type of electrical signal which pulls up those memory cells which cannot be easily brought back with the help of our own will and brain force.

II. MEMOBRAIN – OVERVIEW

Memobrain will be a typical type of helmet which can be normally worn on our head like general helmets. The inner part of the helmet will consists of sensors attached with the external part of our skull which sends the electrical signal to the brain with the help the help of our sense organs and blood. The inner linen of the helmet will be mainly attached with the temple part of the forehead. The neurological based sensors are the principle components of the device. The device imparts no side effects on our health rather makes our brain more active at the time of its use. The main problem with this device will be that the person can describe any events which was asked to him only for the moment when the device is functioning i.e. attached with the sense organ and the

device can send electrical signal to the brain. The moment the device will stop sending signals, the brain cells will come to its initial condition.

III. Memobrain - Domain

Electrical synapse will be the primary and principal component encompassing the majority of a medicinal and paramedical concerns, probably in the form an electronic helmet which ultimately helps as a brain booster or to remember those memories which are actually stored in the brain but not aware of them.

IV. Medical Memobrain Design

The main parameters used for the medical Memobrain architecture and its mechanism stimulation, and also the obligatory technology background which might lead to engineering the principle hardware for the sake of molecular device.

A. Manufacturing Technology

The ability to manufacture Memobrain may be the output of recent trends and latest technologies in compilation, computation, manipulation and fabrication. Subject to the case, various grades on temperature, application, concentration of different biochemical products in the blood, and electro-magnetic identity of brain are some of relevant parameters for diagnostic purposes. CMOS VLSI (Very Large Scale Integration) Systems design using UV radiation techniques which endeavors the fidelity of the system functionality. The CMOS (Complementary Metal Oxide Semiconductor) industry may positively initiate the trail in order to assemble the progressions required to fabricate Memobrain.

B. Biochemical Sensors

Production of Biochemical silicon based motion sensors which will be a two level domain device architecture hierarchy. Applications range from automotive and neurological industries with detection of brain signals as well as sending electrical synapses recognition through embedded software programming, and biomedical uses. Through the use of Nano technology wires, prevailing substantial expenses of the demand energy for which the data

transfer and circuit operation could be reduced to a minimum of 60% to 75%.

CMOS based biochemical sensors using nanowires as material for circuit designing can succeed maximum proficiency for the solicitation of different biochemical changes which enables different new medical.

C. Power Supply

The use of 19.5V Li-ion battery will prove it useful because of recharging the battery is very easy and also protecting the patient from any sort of short circuit condition.

V. Target Of Action

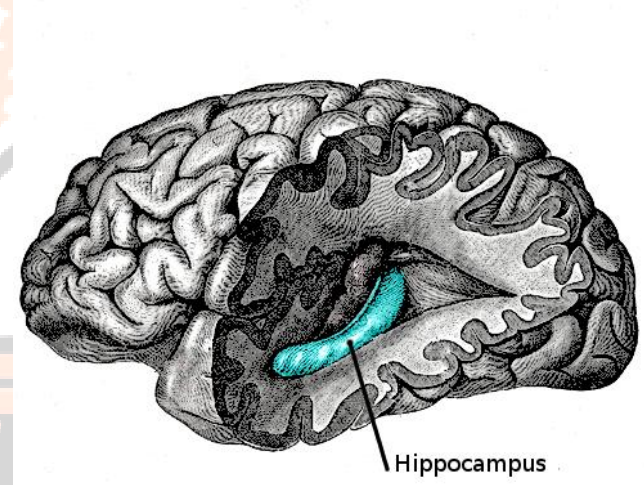


Fig1. Indicating Hippocampus in the grey matter.

The **hippocampus** is one of the major parts of the brain of humans and other mammals. It goes to the limbic system and plays major roles in the amalgamation of data/information from temporary memory to long-standing remembrance and spatial triangulation. Like humans, most other mammals also have two hippocampi, one on either side of the brain. The hippocampus belongs to the cerebral cortex, and in mammals it is positioned in the medial temporal lobe, just underneath the cortical region. It comprises of two main interconnecting portions: Ammon's horn and the other is dentate gyrus.

This will be the main part where the electrical signals are to be transmitted from the device. When we

reminisce new particulars by repeating them or by employing various aide-mémoire devices, we are actually moving them through the parts of hippocampus. The major part of hippocampus goes on swelling the strength of its association until and unless it does not require to do so. The main purpose is to convert the recent memories to permanent ones.

Paraphernalia of Acute and Chronic Electroconvulsive Shock (ECS) on Noradrenaline (NA) release in the Hippocampus and Frontal Cortex

1. Variations in the cellular parts of Noradrenaline (NA) in the cortex (frontal region) and hippocampus were invincible through in vivo micro dialysis which is followed by chronic and acute Electro-convulsive shock also called as ECS anaesthetized with different forms of chloral hydrates in mammals

2. Basal discharge of Noradrenaline in the frontal cortex (4.9 ± 0.3 pg/sample) did not vary expressively from that in the hippocampus (4.6 ± 0.2 pg/sample).

3. A single ECS caused in an upsurge of NA discharge in the hippocampus (21.1 ± 1.3 pg/sample) and in some part of the frontal cortex (11.6 ± 1.2 pg/sample).

4. Vertebrates or mammals are were examined habitually with ECS. Few hours after, basal discharge of NA into samples of dialysis from the frontal region of cortex which was significantly increased which relates to habitual sham controls. The significant increase in NA released in both hippocampi zones followed by an ECS did not change from the chronic mock controls from vertebrates given acute ECS.

5. In certain regions, the indigenous substances in mammals are also taken into consideration which includes frontal cortex and hippocampi.

VI. Cure of Several Diseases/Syndrome

It is generally associated with temporary curing of certain types of diseases or syndromes. Some of those diseases and syndromes included as follows:

1. Age related;
2. Alcohol;
3. Alzheimer's disease;
4. Amnesia;
5. Autism;
6. Dementia;
7. Huntington's disease;
8. Korsakoff's syndrome;
9. Tourette syndrome;
10. Schizophrenia;
11. Obsessive-Compulsive Disorder (OCD);
12. Parkinson's disease.

VI. PROS AND CONS

Pros:

1. It provides a painless and a highly convenient expedient of ushering the hidden memories.
2. It does not require any external power supply to operate.
3. Operation time is very fast i.e. within few minutes depending on the period of recall.
4. Functioning this device does not require any professionals.

Cons:

1. The preliminary design cost will be very high. The design of the Memobrain Helmet is a very complicated one.
2. Electrical synapses and signal may produce vagrant fields which in turn could actuate bioelectrical molecular diverse devices in anatomy.
3. The process is not permanent and will exist till the device is in use.
4. Hard to Interface, Customize and Design, Complex circuitry.

VII. CONCLUSION

1. With the advent of technology the idea of designing a 'Memobrain' can be developed.
2. The technology researched will certainly bring a radical transformation in the domain of Science & in many other fields of research.
3. Amnesia will not be an issue any more.
4. Time for reminiscence will be lightning fast.

VIII. REFERENCES

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IX. Acknowledgement

Inspired from a short story of Satyajit Ray- Dr. Sheringer Smaronsakti.

Author:

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