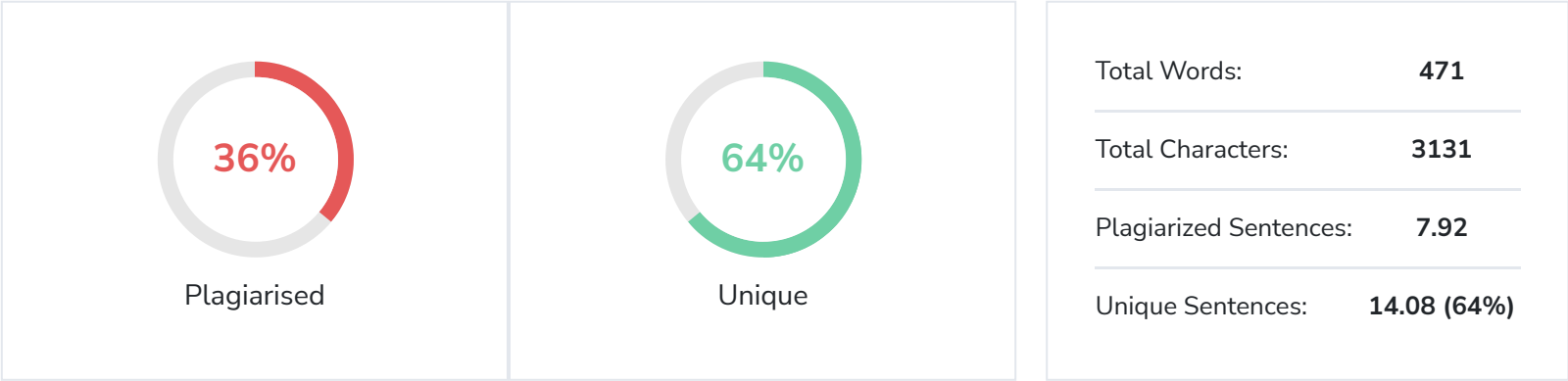


Plagiarism Scan Report

Report Generated on: Apr 27,2023



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Discovery of World's first artificial organic Neuron

Intro :

I guess everyone must have watched the terminator movie. In terminator Genesys where a T-1000 terminator does not die even after getting shot at the eye because its artificial cells start regenerating making it nearly impossible to destroy.

On watching this movie, I start Imagining whether this is possible? if yes then how? Well, 1 answer to this question can be an artificial nerve cell.

And what if I say this technology is not that far away. Yes, researchers have built the world's first artificial neuron that's capable of mimicking the function of an organic brain cell - including the ability to translate chemical signals into electrical impulses, and communicate with other human cells.

Demonstration of artificial Neuron :

Researchers have demonstrated an artificial organic neuron, a nerve cell, that can be integrated with a living plant and an artificial organic synapse. Both the neuron and the synapse are made from printed organic electrochemical transistors.

Organic semiconductors can conduct both electrons and ions, allowing them to imitate the ion-based method that plants use to generate pulses (action potentials). Even a tiny electric pulse of less than 0.6 V can trigger the plant to produce action potentials, which causes the leaves to close.

The electrical pulses from the artificial nerve cell can cause the carnivorous Venus flytrap plant's leaves to close.

Researchers statement :

"We chose the Venus flytrap because it allows us to clearly demonstrate how we can steer the biological system with the artificial organic system and get them to communicate in the same language," says Simone Fabiano, associate professor, and principal investigator in organic nanoelectronics at Linköping University.

Simone Fabiano agreed that they have also discovered that the neuron-synapse link has a learning behaviour known as Hebbian learning. This synapse stores information, allowing signalling to become more effective .

A post-doctoral researcher at the Laboratory of Organic Electronics , Chi-Yuan Yang said that they have created ion-based neurons that are similar to ours and can be linked to biological systems. Organic semiconductors have a number of benefits, including being biocompatible, biodegradable, soft, and formable. They just require a small amount of electricity to function, which is perfectly safe for both plants and vertebrates.

Expected Uses of artificial Neuron :

According to researchers artificial nerve cells could be employed in delicate human prostheses, surgeries , implantable devices for treating neurological illnesses, soft intelligent robotics, and to give real skin to robots.

Contributors :

The contributors to this famous research are : Knut and Alice Wallenberg Foundation, the Swedish Research Council, the Swedish Foundation for Strategic Research, and the Swedish Government Strategic Research Area in Materials Science on Functional Materials at Linköping University .

Source : www.sciencedaily.com/ and sciencetechnohub.com .

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