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Virtual Reality App Helps Mental Health Issues

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A Romanian university has created a virtual reality (VR) product that aims to train the human mind to prevent emotional disorders.

VR-Mind was designed by a team at UBB, Babes-Bolyai University and virtual reality specialists, EON Reality. The aim of the app is to promote good mental health and it can be a tool to help people already experiencing emotional issues like depression and anxiety.

Through a series of VR games, the app assesses and modifies three types of cognitive bias – the systematic errors in thinking that occur when people process and interpret information form the world around them. The biases it addresses relate to those that research has indicated are relevant for depression and anxiety: attentional bias, interpretation bias and memory bias.

The games include identifying a target when it appears in front of them, creating sentences from a selection of words in order to gain points and matching pairs in a memorisation task.

The technology aims to train and/or retrain the mind as a way to prevent psychological issues. The final version of the VR-Mind app was launched in August 2020 and in early 2021 it was made available for psychologists to use alongside their other services to support people struggling with mental health issues. Its launch has been a success, and it is hoped that the app will soon be more widely available for use.

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Student Turns Waste Crops into Renewable Energy

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An engineering student from the Philippines has created a system that generates clan, renewable energy from ultraviolet (UV) light, using cladding made from waste crops.

The AuREUS system was inspired by the physics that causes the spectacular aurora or Northern Lights, in which invisible hight0energu particles such as UV are absorbed by luminescent particles that re-emit them as visible light.

Carvey Ehren Maigue identified that similar luminescent particles could be found in certain fruits and vegetables. By extracting the particles and suspending them in resin, Carvey was able to create a substrate that could be used as cladding for walls or between panes of glass on buildings. This absorbed the invisible UV rays bouncing off other buildings, pavements and architecture and re-emitted it as visible light, reflecting it to the edges of the panels and panes.

Applying the same photovoltaic cells used in traditional solar panels along these edges, the visible light can be captured and converted into electricity. Regulated circuits then process the voltage output and the electricity produced can be storied or used directly.

Unlike standard solar panels, most of which are fitted horizontally to face the sun and rely on visible light to generate power, the AuREUS system can produce electricity even when it is not facing the sun, effectively transforming a building clad on all sides into a vertical solar farm.

As well as addressing the issue of climate change, the system – which was the James Dyson Awards first-ever global sustainability winner – also tackles another issue.

By upcycling crops damaged by increasingly frequent and extreme weather events and often left rotting in fields, Carvey's system uses the waste food and provides farmers with a way to monetise their lost crops.

Speaking to architecture and design magazine, Dezeen, about the project Carvey said: 'We can show people that adapting sustainability to fight climate change is something that can be both, the present and the future generation and in doing so, we can rally more people in this fight against climate change.'

Carvey and his team are now working towards sourcing 100 percent of the particles needed from fruit and vegetables (up from 80 percent), exploring ways to increase manufacturing capacity and also looking at ways to adapt the technology for solar-powered transport.

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