

Good News Friday Edition 3 – Young People Leading Change



YOUNG PEOPLE AND INSTITUTIONS CHANGING THE FUTURE

There are institutions and organisations in Australia and throughout the world carrying out research and innovation where young people are quietly changing our future. It is not glamorous work, nor does it attract much attention, but these young people's hearts are ignited to make a difference – which in the end will have a positive effect on us all.

I love the heart of these researchers (see picture above) who collaborated to find a solution in addressing the issue of providing fresh water in North-East Brazil, a semi- arid area. They made a battery (fuel cell) from soil using the electrical charges created by soil microbes... what an incredible idea! Its is extremely low cost and can be done anywhere. In 2019, the technology which was installed (trialled) at Icapuí Primary School. Each battery creates a small amount of power, which is used to purify three litres of water a day, enough for one person.

Dr Mirella Di Lorenzo, who led the project said *“Another important element of our project is education around sustainable technologies. The field work was performed together with primary school pupils and their teachers. They were trained on the system's working principles, installation and maintenance.”* Now that it has been tested in the field further improvements are being trialled to upscale the system for household use. I can see that the students from the Primary School will be able to implement and manage the household systems in the future. (Read more in link below)

<https://www.advancedbatteriesresearch.com/articles/22137/soil-powered-fuel-cell-promises-cheap-sustainable-water-purification>

The Energy Change Institute is a collaboration of a number of faculties of the Australian National University providing opportunities and pathways for young people to be at the forefront of tomorrows technology today. In March 2020, one of their teams created a new world record for a ‘tandem solar cell efficiency’ by combining a silicon cell wafer with a layer of a perovskite solar cell. Now that they have achieved 27.7% efficiency, they are aiming for 30%. The two layers absorb light from different parts of the spectrum,

maximising the amount of sunlight which is converted into electricity. It means that solar panels in the near future could produce as much as 50 per cent more electricity using the same amount of sunlight, compared to solar panels currently available. (Read more in link below)

<https://reneweconomy.wpengine.com/australian-researchers-smash-efficiency-record-for-tandem-solar-cells-58712/>

As Australia transitions to become a “renewable energy superpower” researchers are developing new ways to export renewable energy in the form of hydrogen. (Short 2m video link below for those new to hydrogen)

<https://www.youtube.com/watch?v=fFGT2z82tOM&t=32s>

Monash University in collaboration with the University of Wollongong is carrying out research to efficiently convert water to hydrogen then to ammonia for transportation. “Our process is one of the most promising low-cost approaches to generating ammonia directly from renewables plus air and water.” (Read more in link below)

[Cutting-edge hydrogen research in Australia - Australian Renewable Energy Agency \(arena.gov.au\)](#)