

## Timeline

**Cr David Bowe: Good things happening**

12:46 PM AEST

**Devonport Jazz ready to roll from next Thursday**

12:44 PM AEST

**Drug Court pioneer judges it's time to retire**

12:38 PM AEST

**Vehicle impounded in Lucknow**

12:36 PM AEST

**Lockdown Lifeline – Mental Health Support Package for NSW**

12:36 PM AEST

**Western Australia coronavirus update as at 14 July 2021**

12:34 PM AEST

**Most Queenslanders not prepared for bushfires, new figures reveal**

12:32 PM AEST

**Brisbane Festival 2021 to deliver top talent across city**

12:28 PM AEST

**NSW director disqualified from managing corporations for four years**

12:28 PM AEST

**Converting tamarind shells into an energy source for vehicles**

12:26 PM AEST

**10 Perth suburbs to record biggest improvement in sales volumes in 2020-21 financial year revealed**

12:18 PM AEST

**Critical three-year-old health promises still not delivered by Gutwein Government**

12:17 PM AEST

**Council seeks to establish Latrobe City Transition Taskforce**

12:17 PM AEST

**Labor must come clean**

12:16 PM AEST

**New route for Araluen Road is underway**

12:16 PM AEST

**Two men prosecuted for using false documents to obtain work**

12:14 PM AEST

Science

14 JUL 2021 12:26 PM AEST

## Converting tamarind shells into an energy source for vehicles

Shells of tamarind, a tropical fruit consumed worldwide, are discarded during food production. As they are bulky, tamarind shells take up a considerable amount of space in landfills where they are disposed as agricultural waste.

However, a team of international scientists led by Nanyang Technological University, Singapore (NTU Singapore) has found a way to deal with the problem. By processing the tamarind shells which are rich in carbon, the scientists converted the waste material into



carbon nanosheets, which are a key component of supercapacitors – energy storage devices used in automobiles, buses, electric vehicles, trains, and elevators.

The study reflects NTU's commitment to addressing humanity's grand challenges on sustainability as part of its 2025 strategic plan, which seeks to accelerate the translation of research discoveries into innovations that mitigate our impact on the environment.

The team, made up of researchers from NTU Singapore, the Western Norway University of Applied Sciences in Norway, and Alagappa University in India, believes that these nanosheets, when scaled up, could be an eco-friendly alternative to industrially produced counterparts, and cut down on waste at the same time.

The tamarind shell-derived nanosheets also showed good thermal stability and electric conductivity, making them promising options for energy storage.

The researchers hope to explore larger scale production of the carbon nanosheets with industry partners. They are also working on reducing the energy needed for the production process to make it more environmentally friendly, and are seeking to improve the electrochemical properties of the nanosheets.

*[Public Release. This material comes from the originating organization and may be of a preliminary nature, edited for clarity, style and length. View in full [here](#).*

[Why?](#)

Tags: Electric, electric vehicle, energy, energy storage, environment, Humanity, Impact, Innovation, Nanyang Technological University, Norway, production, research, Scientists, Singapore, sustainability, university

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