

# Tamarind Shells and Greener Supercapacitors

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A Nanyang Technological University-led (NTU Singapore) team of scientists has come up with a novel process for turning **tamarind shells** into carbon nanosheets.

Tamarind is a tropical fruit consumed worldwide and its shells 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.

Carbon nanosheets remain the mainstay of supercapacitors, These energy storage devices are used in automobiles, buses, electric vehicles, trains, and elevators.

Scaling up these nanosheets with tamarind shells offers an eco-friendly alternative to their industrially produced counterparts, while cutting down on waste at the same time.

This latest innovation was made possible thanks to the combined effort of scientists from NTU, Western Norway University of Applied Sciences, and India's Alagappa University.

The current study helps accelerate NTU's commitment to address humanity's grand challenges on sustainability as part of its 2025 strategic plan.

The tamarind shell strategy is just one of the many research discoveries that are being translated into innovations to mitigate our impact on the environment.

According to the scientists, the tamarind shell-derived nanosheets has so far shown good thermal stability and electric conductivity, making them promising options for energy storage.

The next step for the team has already been cut out; they are planning to explore larger scale production of the tamarind shell carbon nanosheets with potential agricultural partners.

The team is also working on reducing the energy needed for the production process, making it more environmentally friendly, and are seeking to improve the electrochemical properties of the nanosheets.

*Image and content: ambadysasi-Pixabay/NTU Singapore*