



# Converting tamarind waste into energy storage material for EVs

BY ASHWINI SAKHARKAR / JULY 15, 2021 / INVENTION



A close up of tamarind pods, along with pieces of their shell. Credit: NTU Singapore

Tamarind fruits are consumed worldwide, and their seeds have an underexploited potential. However, the bulky tamarind shells are discarded during food production and



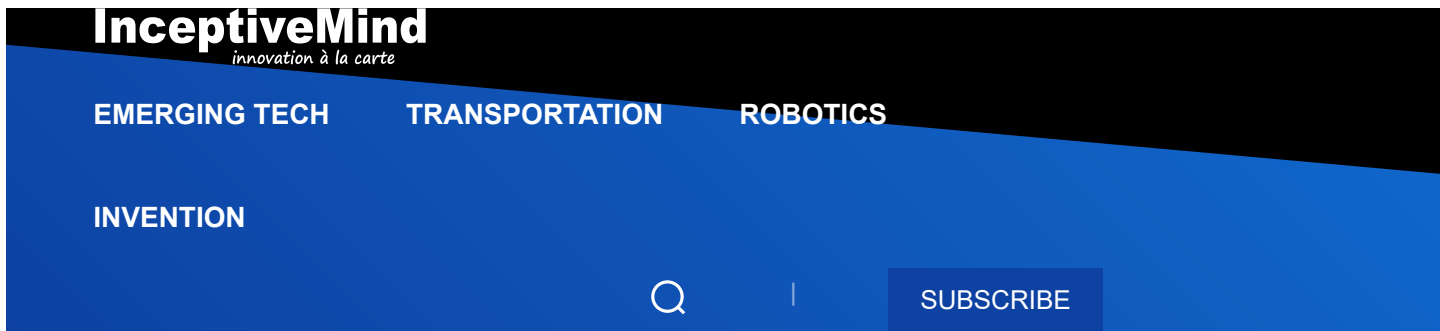
used in automobiles, buses, [electric vehicles](#), trains, and elevators.

The project also involved researchers from the Western Norway University of Applied Sciences and Alagappa University in India. They believe that these nanosheets, when scaled up, could be an eco-friendly alternative to their industrially produced counterparts and [cut down on waste at the same time](#).



Assistant Prof. (Steve) Cuong Dang displaying pieces of tamarind shell, which were integral to the study. Credit: NTU Singapore

The researchers first washed tamarind fruit shells that were obtained as [waste from the food industry](#) and dried them at 100°C for around six hours before grinding them into powder. They then baked the powder in a furnace for 150 minutes at 700-900 degrees Celsius in the absence of oxygen to convert them into ultrathin sheets of carbon known as nanosheets.



The researchers [are 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. They are also hoping to explore the larger-scale production of carbon nanosheets with agricultural partners.

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