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Vehicle energy source generated from tamarind shells

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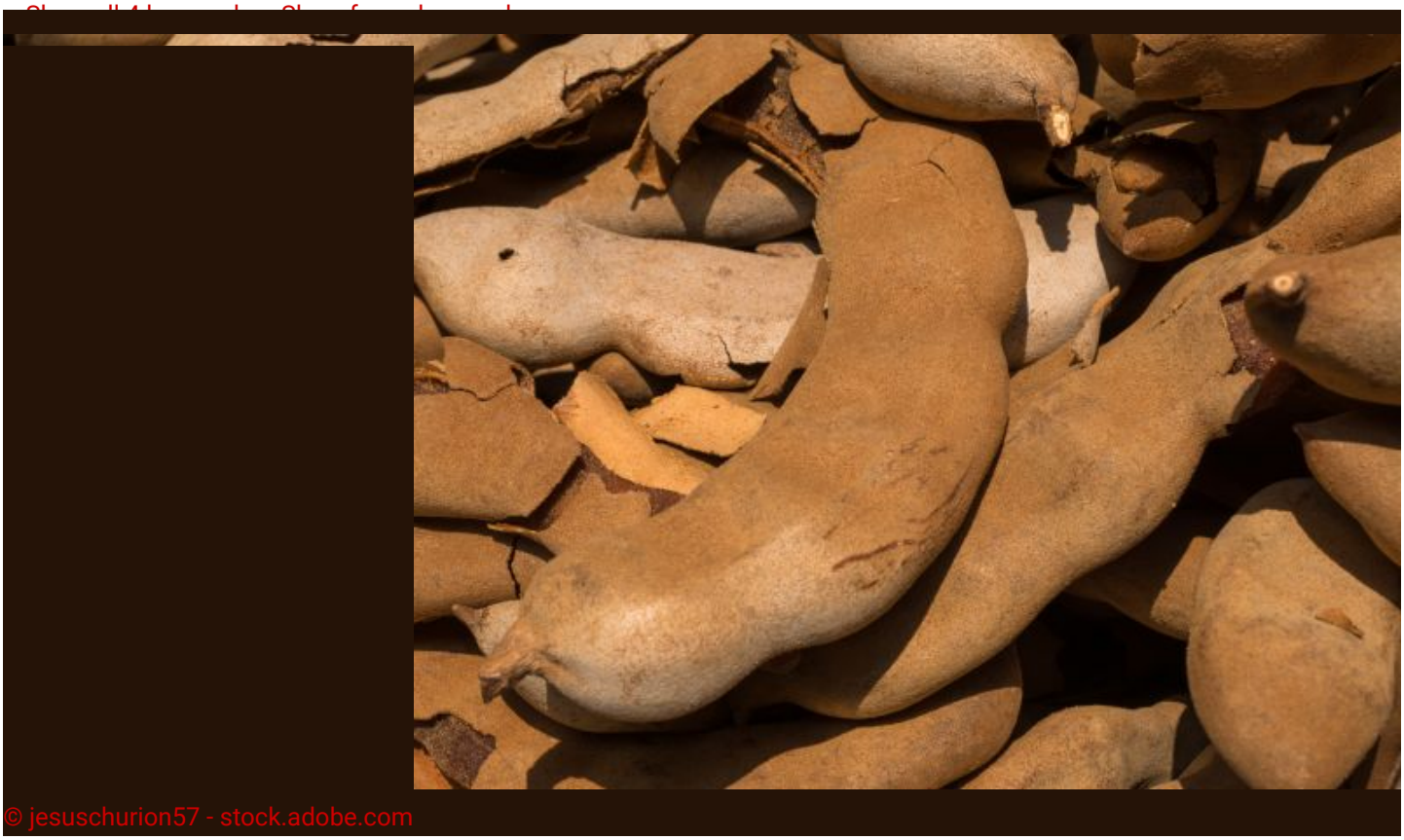

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Tamarind pods are usually discarded as agricultural waste. As these husks are often bulky, they end up taking a lot of space on landfills. Yet the waste material in question is not without its uses, being both carbon-rich as well as porous, and, as such, perfect for the production of carbon nano-sheets. These ultra-thin sheets prove viable alternatives to graphene in the production of supercapacitors, that is, energy storage devices used to manufacture automobiles, buses, electric vehicles, trains and elevators.

Led by Nanyang Technological University (NTU) in Singapore, the team of scientists, featuring representatives from the

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"Through a series of analysis, we found that the performance of our tamarind shell-derived nanosheets was comparable to their industrially made counterparts in terms of porous structure and electrochemical properties. The process to make the nanosheets is also the standard method to produce active carbon nanosheets."

Professor G. Ravi, Head, Department of Physics, who co-authored the study with Asst Prof Dr R. Yuvakkumar, who are both from Alagappa University, said: "The use of tamarind shells may reduce the amount of space required for landfills, especially in regions in Asia such as India, one of the world's largest producers of tamarind, which is also grappling with waste disposal issues."

In future, the researchers intend to replicate their findings with different types of fruit skins and shells. Similarly, they are also working on further reducing the energy output of the production process as well as improve the electrochemical properties of the nanosheets.

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