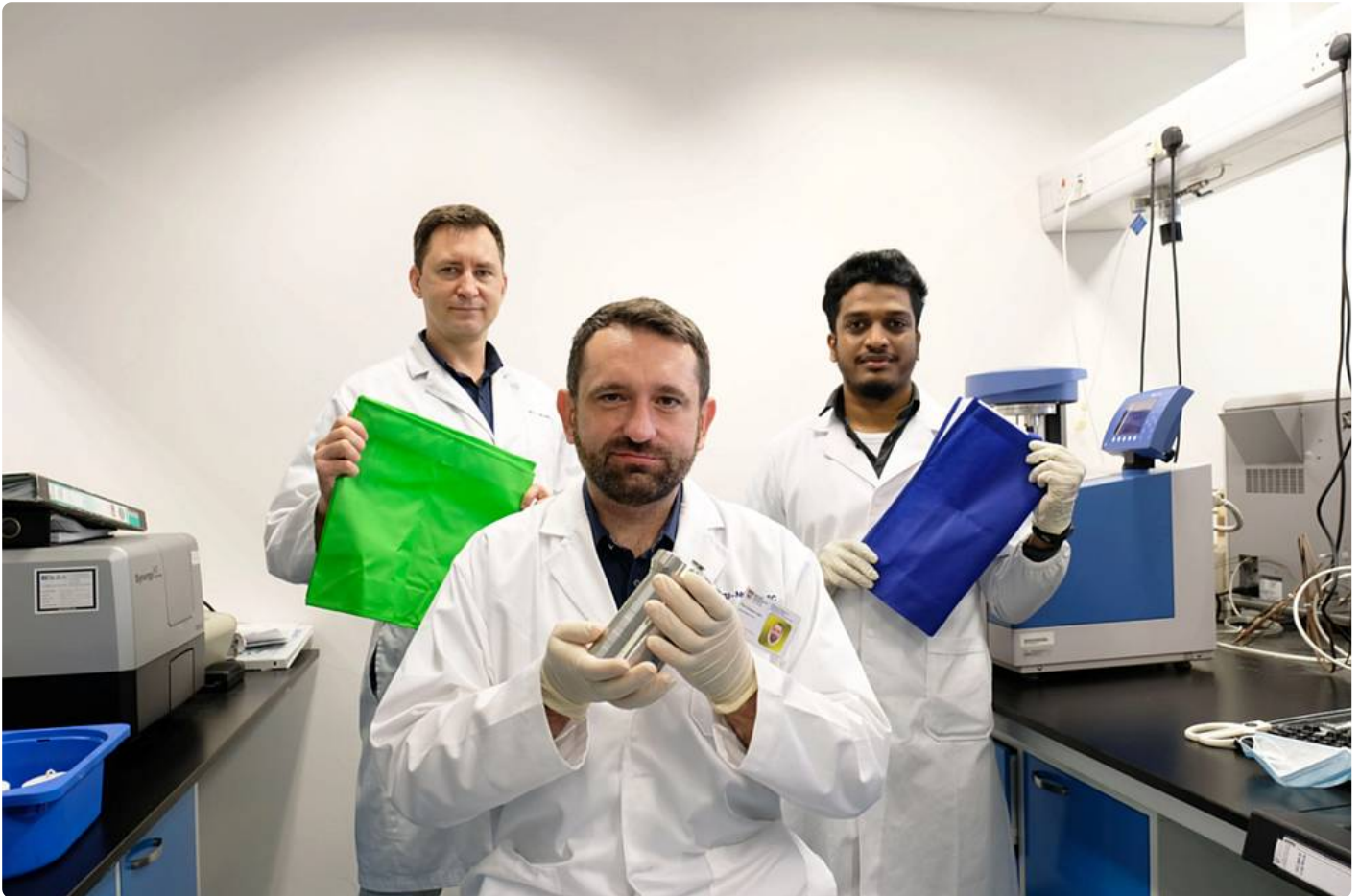


Plastic bags more eco-friendly than paper and cotton bags in countries like Singapore, NTU study shows

Thursday, 15 Oct 2020 09:45 AM MYT



(From left) The Nanyang Technological University research team include senior research fellow Andrei Veksha, Assistant Professor Grzegorz Lisak, and research associate Ashiq Ahamed. — Picture courtesy of NTU via TODAY

SINGAPORE, Oct 15 — Scientists from Nanyang Technological University (NTU) have found that plastic bags are more eco-friendly than paper and cotton bags, contrary to popular belief.

In a study released yesterday, the reserach team said that this was true in cities and countries such as Singapore with densely populated metropolitan areas where waste is eventually incinerated.

The NTU scientists came to this conclusion after carrying out a life-cycle analysis of five types of bags to evaluate their environmental impact associated with its production, distribution, transportation, waste collection, treatment and end-of-life disposal.

Reusable plastic bags made from polypropylene non-woven plastic were the most eco-friendly option followed by single-use plastic bags made from high-density polyethylene.

Assistant Professor Grzegorz Lisak, who led the research, said the finding that single-use plastic bags — if treated properly — are less environmentally detrimental was “surprising”.

“It is essential to evaluate the implications case by case for dealing with plastic waste,” the director of the Residues & Resource Reclamation Centre at the Nanyang Environment and Water Research Institute said.

Reusable plastic bags need to be reused four times to offset the emissions from the creation of one single-use plastic bag.

“Our main message is that reusable plastic bags are the best option, provided they are re-used many times.

“In a well-structured, closed metropolitan waste management system with incineration treatment, using plastic bags may be the best option that is currently available, provided that there is no significant leakage of waste into the environment,” he added.

The study also found that the global warming potential of kraft paper bags are 80 times that of reusable plastic bags, while single-use plastic bags and cotton reusable bags are 10 times.

Cotton and kraft paper bags require large amounts of water and natural resources, leaving a bigger environmental footprint, the report stated.

In places such as Singapore, where waste is incinerated, the timeline of biodegradation of paper, cotton and other biodegradable materials is irrelevant.

Such bags are suitable for countries that use landfills and regions with higher leakage of waste into the natural environment, the study highlighted.

However, the scientists said that these bags could be more environmentally friendly in the future by improving its production method, optimising resource usage and following sustainable practices.

The team recommended fully utilising reusable plastic bags to reduce the consumption of single-use plastic bags.

Lisak said that based on 2018 statistics, reducing the single-use plastic grocery bag consumption in Singapore by half could prevent more than 10 million kg-CO₂ emissions a year. — TODAY