Research

ChM. Dr. Wan Norfazilah invents environmentally friendly waterproof spray for fabrics

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PEKAN, 15 June 2022 - There are many waterproof spray products for fabrics, but most of the raw material solvents used are toxic, harming human health and the environment.

Starting from that problem, ChM. Dr. Wan Norfazilah Wan Ismail, 34 has produced GetDry! which uses water as a raw material solvent by using a production method called the sol-gel method, a simple, fast and cost-effective method.

According to her, water use can also reduce production costs.

“Apart from the fabric, this waterproof spray is also suitable for wood and glass surfaces.

“The additional features of this waterproof spray are durable, retain the original texture and colour of the fabric, and prevent dirt from staining the clothes.



ChM. Dr. Wan Norfazilah

“This research was conducted with the Research Officer of the Science and Technology Research Institute For Defence (STRIDE), Dr. Noreen Farzuhana Zulkifli, post- and undergraduate students under my supervision, Nurul Nabilah Mohd Za’im, Liong Khai Jiet and Nurul Hidayah Abu Bakar,” she said.

She added that the idea of this research sparked while working at the Fabric Testing Laboratory, STRIDE under the Ministry of Defense Malaysia.

“When I started working in UMP, the idea was realised with research on coating materials that provide special characteristics to fabrics.

“The research began fully in November 2019 and was completed in December 2020.

“Fabric is a necessity of life and waterproof fabric is vital to protect from unpredictable weather.

“Apart from maintaining dryness despite being exposed to water or rain, the fabric that has been coated with a waterproof coating is able to allow water vapour to seep out,” she said.

She said that the skin produces sweat during physical activity to maintain body temperature.

“If the fabric cannot release water vapour into the environment, the clothes worn will become uncomfortable.

More information on the sol-gel method can be accessed via https://link.springer.com/article/10.1007/s10971-016-4027-y.

“Currently, no local company dominates the waterproof spray market segment,” she said.

ChM. Dr. Wan Norfazilah said most manufacturers sell waterproof sprays based on fluorocarbon solvents, which negatively impact the environment.

“The waterproof sprays on the market are not produced by local companies but are imported or going through the process of packaging and rebranding.

“Therefore, the results of this study can solve the problems of the local industry with a simple, cheap, and safe product preparation method.

“Besides that, this product can solve the problems faced by the local community who receive rain throughout the year and maximum rainfall during the monsoon transition period,” she said.

The use of this waterproof spray on worn fabrics such as work clothes and school uniforms, including shoes, socks, bags, and scarves, can reduce inconvenience among the community especially parents during the rainy season.

This waterproof spray has been patented (UI2021007238) and the ultimate goal is commercialisation.

Product presentation was made to the Management of UMP Holdings Sdn. Bhd. and the Group to foresee the product’s potential for commercialisation.

This product will be sold at an affordable price because the production cost is much cheaper and is still in discussions with UMP Holdings Sdn. Bhd.

She further explained that in the future, this research group would continue to study the development of other characteristics of coatings on fabrics to meet current needs and requirements including fire retardant, anti-wrinkle, scented fabrics, and others.

“We are also expanding the coating function on fabrics by adding properties such as antibacterial.

“The main focus of this study is the bacteria that cause body and foot odour.

“The 70 per cent outcomes of this study have been funded by an international grant and will be completed by August 2022,” she said.

In addition, another product that has been produced using the sol-gel method is adsorbent for hazardous chemicals in industrial wastewater treatment plants and it is already 90 per cent complete

and funded by a national grant.

STRIDE, Ministry of Defense Malaysia has been collaborating and providing funds to cover fabric testing costs.

She hoped for GetDry! to penetrate the international market for the benefit of all people.

This product has garnered many recognitions such as a gold medal in the International Special Award by World Invention Intellectual Property Associations (WIIPA), Best Invention Video Award, and Best Woman Inventor Award in the 6th International Invention Innovation Competition in Canada (iCAN 2021).

In addition, this research won a gold medal and Special Innovation Award by UMP Holdings in the Creation, Innovation, Technology & Research Exposition (CITREx) 2021.

This research also won a silver medal in the International Invention, Innovation and Technology Exhibition (ITEX) 2021 at the Kuala Lumpur Convention Centre from 13 to 14 December 2021.

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