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For Immediate Release

## DNFI Award for Innovation in Natural Fibre Research 2024

### PalmFil®: World's First Date Palm Fibers Win 2024 DNFI Award

Dr Mohamad Midani, Associate Professor at College of Textiles, North Carolina State University, and CEO of Valorizen LLC has been awarded the 2024 DNFI Innovation in Natural Fibres Research Award for the development of PalmFil® the World's First Date Palm Fibers. The process could result in a substantial increase in the world supply of natural fibres.



Dr Mohamad Midani conducts his research in Cairo, Egypt.

PalmFil® is the world's first textile fiber and reinforcement product from date palm frond and fruit stalks. Palm fibers are embedded inside the stalks and surrounded by a complex natural binder, making it difficult to extract the fibers without breakage or damage. The PalmFil® patented process delignifies and fibrillates those fiber vascular bundles using an environmentally-conscious mechanical-chemical-biological method. The method transforms date palm waste (potentially 5 mil tons dry weight annually) into high-value textile fibers, thus expanding the palette of sustainable natural fibers.

The multi-step extraction process involves 1) preparing the palm fronds biomass to increase the surface area for further treatment, 2) treating the biomass with a mild alkaline solution to partly dissolve the gum using a closed loop chemical recovery process, and 3) mechanical scraping to remove gum and to fibrillate the coarse-hollow fiber vascular bundles without breaking them. If a cottonized fibre type is desired, an additional treatment with a custom enzyme mix is applied.



The PalmFil® fiber extraction process has been validated on a pilot level and is being scaling up to an industrial level through licensing agreements in Egypt, Tunisia and Saudi Arabia. Further, the PalmFil® extraction technology can be applied to other palm species, including oil palm, coconut palm, doum palm and bamboo, showcasing its versatile application. PalmFil® fiber has been blended with cotton to produce textiles. The fibres can also be used to produce

insulation, biodegradable packaging, automotive composites, and WPC floor laminates and rugs as well for mattresses.

The formal award ceremony to honor Dr Midani will be held on Thursday 16 January 2025 during Heimtextil fair in Frankfurt, Germany.

## Previous DNFI Award Winners

The DNFI Innovation in Natural Fibres Award has been issued annually since 2017.

**Ms. Marie-Isabel Popzyk** and **Dr. Roland Klein** won the award in 2017 by showing that structural components can be produced using natural fibre reinforced plastics (NFRP). **Velener Textil** won in 2018 for developing the WECYCLED® system to recycle cotton yarn from spent cones in the spinning process. The 2019 award was won by **Dr. Debasish Das** and **Dr. Subhas Ghosh** for developing a biodegradable cotton-jute fabric with a waterproof coating that can substitute for non-biodegradable PVC-coated polyester. The 2020 Award was won by **Dr. Noureddine Abidi**, who developed a process to dissolve cotton fibres to form a gel which can be transformed into bioproducts, including plastic films.

The 2021 DNFI Award was won by **Dr. Maryam Naebe**, Senior Research Fellow, Deakin University, Institute for Frontier Materials (IFM), Victoria, Australia for creating a special light-weight nonwoven textile fabric that can be used as an insulator in automobiles. The 2022 DNFI Award went to **Dr. Frank Hermanutz** and **Dr. Tanja Schneck**, German Institutes of Textile and Fiber Research Denkendorf, for their project called “PureCell – Natural fiber-reinforced composites based on pure cellulose.” The 2023 DNFI Award went to **Ms Amelie Pörschmann**, at that time a student at Hochschule Hof, Germany. Ms Pörschmann developed a biodegradable, woven fabric pot in which plants can be started.

## About DNFI

The Discover Natural Fibres Initiative (DNFI) is a platform for those who appreciate and acknowledge the importance of natural fibres and support their production and use.

DNFI facilitates the exchange of information and experiences and works to advance the common interests of all natural fibres in the face of competition with oil-based and wood-based manmade fibres. Representatives of natural fibre industries as diverse as abaca, alpaca, angora, cashmere, coir, natural fibres, flax, industrial hemp, jute, mohair, ramie, silk, sisal and wool participate in DNFI.

DNFI was created in January 2010 as an outgrowth of the International Year of Natural Fibres 2009, declared by the United Nations General Assembly. DNFI is entirely volunteer supported. There are no membership dues, the initiative has no budget or paid Secretariat and does not conduct projects. Instead, DNFI facilitates communication and collaboration through the exchange of information, including statistics on fibre production, value and employment, and updates on developments in fibre markets. DNFI raises awareness through reports, press releases and seminars, and encourages innovation through an annual award.

Membership in DNFI is open to anyone with an interest in the growth of natural fibre industries. To become a member, simply register on-line at <https://dnfi.org/>.

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