



Press release

Garlock Supports WasteEx, an Innovative Startup Company Aiming to Convert Plastic Waste into Valuable Raw Material with a Modular Pyrolysis Reactor

Elias Hasel, a chemistry student at the Technical University of Munich and co-founder of the start-up WasteEx, sought application expertise from Garlock engineers for a sealing problem he discovered while creating a pyrolysis reactor to convert plastic waste into crude oil. Garlock GmbH is providing engineering and other support to the WasteEx Pyrolysis project created by Hasel and his colleague, Marc Xia.

NEUSS, GERMANY, September 14, 2023 – Elias Hasel and the application engineers at Garlock GmbH in Neuss, Germany have known each other for quite some time. The relationship began when Hasel was developing his first pyrolysis reactor system in an empty driving silo on his grandparents' farm. Hasel's idea to thermally convert plastic waste into raw material had encountered a sealing problem.

"In 2018, I searched the Internet and found Garlock as a sealing expert," Elias says. "With my grandfather by my side, I simply called, and was connected with the development department to share details about my project. Their willingness to immediately assist was incredibly helpful."

Hasel's first prototype Pyrolysis Reactor to convert plastic waste into crude oil needed a sealing solution, a problem quickly solved with the help of Garlock application engineers. After furthering his development work, in 2019, Hasel won the special prize in the "Jugend forscht" (youth research) competition.

Later, Hasel teamed up with Marc Xia, a doctoral student at the Department of Plant and Process Engineering at TUM, founded the WasteEx project and won second place in the "IDEAward" at the Technical University of Munich (TUM). The team is now working at full speed to develop a much lighter, smaller and more compact prototype of their new system, which will help eliminate the enormous amount of plastic waste accumulating across the globe, and especially in areas such as Southeast Asia and Africa. Currently, systems used for pyrolysis are expensive, complicated and require specialized knowledge to design. The modular design of the WasteEx system allows for easy shipping and quick setup, is uncomplicated to operate, and is designed to solve the problem of increased plastic waste volume in areas where such infrastructure is not yet utilized or structurally disadvantaged. The crude oil derived from this process is directly processed in the WasteEx system and turned into usable fuel.

"We are pleased to be able to support Elias and Marc on this innovative process recycling project," said Till Föste, Managing Director of Garlock GmbH. "We are impressed by the high level of expertise and commitment of the WasteEx founders. By working enthusiastically with this young, innovative research team, we are helping to address important global environmental issues. It is another example of how we, both at Garlock, and throughout Enpro, are using our know-how and technology to drive positive changes consistent with our values."

Once the first modular system is completed, it will be field tested in the Philippines. The project can be followed on Elias' YouTube channel: @HazelChem.

About Garlock

Garlock, an Enpro Industries, Inc. company, is a global manufacturer of high-performance sealing solutions and other innovative products with a relentless focus on safety, environmental protection, durability, and productivity. Since 1887, Garlock has built a global presence of design, manufacturing

and distribution facilities to satisfy customers' needs with responsiveness and ingenuity. For more information about Garlock, please visit www.garlock.com.

About Enpro

Enpro is a leading industrial technology company focused on critical applications across many end-markets, including semiconductor, photonics, industrial process, aerospace, food and pharma, and life sciences. Headquartered in Charlotte, North Carolina, with operations globally, Enpro is listed on the New York Stock Exchange under the symbol "NPO". For more information about Enpro, visit the company's website at www.enproindustries.com.

<https://wasteex.de/>

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Elias Hasel and Marc Xia, WasteEx (Photo: WasteEx)



Till Föste, Managing Director Garlock GmbH (Photo: Garlock GmbH)