Press release

From AI to biotech: Around 50 startups will present new solutions at IFAT Munich

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- Around 50 international startups will showcase their innovations in the Startup Area
- AI detects batteries, material flows, and microplastics in real time
- Biotechnological processes offer new solutions for PFAS and waste management

Whether it's detecting microplastics in real time, identifying lithium batteries in waste streams, or converting organic waste into high-quality chemicals, IFAT Munich 2026 will highlight just how much startups are shaping the innovative momentum of the environmental technology sector. In the Startup Area in Hall C4, 50 international young companies will present their solutions to key challenges in the water, recycling, and circular economy sector. It's becoming clear that artificial intelligence, new sensor technologies, and bio-based processes are increasingly emerging as key technologies for a functioning circular economy.

Making microplastics visible – in real time

With stricter regulatory requirements, for example, through the REACH Regulation or the Municipal Wastewater Directive (KARL), there is growing pressure to reliably detect and prevent microplastics. This is exactly where ZAITRUS, a startup founded in 2024 in Bayreuth, Germany, comes into play: A sensor-based flow system identifies plastic particles in liquids—from wastewater to beverages—in real time. The solution identifies, categorizes, characterizes, and quantifies substances early on—right at the source. "For municipal wastewater treatment plants and food manufacturers, this provides an effective mechanism for prevention and quality assurance that can protect against damage," says ZAITRUS Managing Director Till Zwede. The process is currently in the pilot phase. At IFAT Munich, the company hopes to find new partners for

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additional pilot projects. A full-fledged monitoring-as-a-service solution is expected to be available from the turn of the year 2026/27.

Using bacteria to combat chemical pollutants

To break down microplastics and other contaminants such as PFAS, pesticides, and pharmaceuticals, CellX Biosolutions uses high-performance, bacteria-based products. To that end, it developed a technology that captures rare bacteria—in contaminated areas such as wastewater treatment plants, rivers, lakes, soil, or the groundwater at industrial sites—that are specifically attracted to certain chemical pollutants. “When isolated and grown in the laboratory, they can be used to create unique bacterial consortia that break down chemical contaminants directly within industrial processes—in wastewater treatment plants, for instance,” explains Estelle Clerc. According to the CEO of the startup, which was founded in 2024 at the Swiss Federal Institute of Technology in Zurich, the company is currently looking for partners for laboratory and industrial pilot projects, such as chemical companies, PFAS users, or owners of contaminated sites. The aim would be to test and scale the technology using actual contaminated water and soil. “Our long-term goal is for providers of wastewater and soil remediation technologies to purchase our bacterial products and use them at end-user sites. Full-scale commercialization is set to begin in 2028,” said the co-founder of the biotech company.

AI-powered sensor technology finds batteries and gas cartridges

Hidden lithium batteries cause fires every day at waste sorting and recycling facilities around the world—and the number of incidents is on the rise. To reliably detect and remove these batteries and other hazardous items, such as nitrous oxide cartridges, from the waste stream, the Norwegian startup Litech AS developed AI-powered sensor technology. The compact, retrofittable system is based on magnetic induction spectroscopy (MIS). It uses electromagnetic fields at multiple frequencies to identify metallic objects based on their unique signal signatures. Combined with artificial intelligence (AI), the process can distinguish between lithium batteries or pressurized gas containers and harmless metal objects on a moving conveyor belt. This works even if the contaminants are inside plastic bags or covered by other waste. “We’ve already moved past the pilot phase,” says Synne Sauar, CEO of the company founded in Oslo in 2021. According to her, a first-generation sensor has been in successful use at a municipal waste treatment facility in the Norwegian capital since

2024. “At IFAT Munich, we are open to both new pilot partnerships and commercial discussions,” Sauar explains. The primary target groups are operators of sorting and recycling facilities, municipal waste management companies, as well as OEMs and system integrators in the field of sorting and recycling technology. Current key markets include the countries of Northern Europe, the DACH region, and France.

Smart gripper optimizes e-waste recycling

AI is also one of the two core technologies used by the Swedish startup Enodo Robotics. The other is a patent-pending robotic gripping system that can grip objects of various shapes and textures with a high degree of flexibility. Together, they form a system capable of replacing the previously mostly manual sorting of electronic waste and non-ferrous metals. “This waste stream is a valuable source of critical raw materials. Our AI and robotics solutions help maximize the added value from these materials and minimize the need for human labor in often hazardous work environments,” says Klas Kronander, co-founder of Enodo Robotics. Beyond just sorting, the AI vision platform, which has been trained on millions of images from real-world recycling processes, also enables material flow analysis, providing recycling companies with real-time insights into the composition and quality of their material streams. The system is commercially available as a retrofit solution for existing recycling lines and is already being used by customers in production environments.

Converting food waste into platform chemicals

EveryCarbon, a biotech startup based in Tübingen, Germany, uses organic waste, for example from households, agriculture, or the food industry, in combination with wastewater and genetically modified bacteria to produce 2,3-butanediol, a precursor for high-performance polymers. “Our vision is a zero-waste production process in which waste materials become the starting point for new materials,” explains Dr. Sebastian Beblawy, CEO of the company created in 2024 as a spin-off from the Hamburg University of Technology. EveryCarbon is currently operating its first small-scale pilot plant on the grounds of a wastewater treatment plant near Stuttgart. The founding team is ramping up its continuous fermentation process in real conditions and validating its first product, a rigid foam for structurally and thermally demanding construction applications. “IFAT Munich is a strategically important platform for us because it intersects exactly with what we are working: Organic waste carbon from

households, industry, and wastewater meets industrial materials management," emphasizes Beblawy, continuing: "On the one hand, our target groups include bioenergy companies, municipal utilities and waste management companies, as well as wastewater treatment plants that have so far been unable to fully utilize organic carbon and are seeking new ways to create value." On the other, we want to get in contact with materials manufacturers who are looking for high-performance alternatives to petrochemical-based materials. "And finally, we look forward to engaging with technology companies that offer solutions in the field of materials and process engineering."

Startup Area as a driver of innovation in the industry

The examples show that innovation in environmental technology is increasingly emerging where digitalization, biotechnology, and the circular economy intersect. IFAT Munich brings these developments together—and connects startups directly with municipal utilities, industry, and technology providers. Further details on the Startup Area, the other special exhibition areas and other themed stages at IFAT Munich can be found at www.ifat.de.

IFAT Munich
IFAT Munich is the world's leading platform for environmental technologies. Every two years, it presents solutions for water, recycling and circularity. The next IFAT Munich will be held at the exhibition center in Munich from May 4 to 7, 2026.

IFAT worldwide
In addition to the world's leading trade fair IFAT Munich, IFAT is currently the world's largest network for environmental technologies with eleven trade fairs. The global IFAT network includes IE expo China in Shanghai, IE expo Chengdu, IE expo Guangzhou and IE expo Shenzhen as well as IFAT Africa in Johannesburg, IFAT Eurasia in Istanbul, IFAT India in Mumbai, IFAT Delhi in New Delhi, IFAT Brasil in São Paulo, Singapore International Water Week (in cooperation with IFAT) in Singapore and, from 2026, IFAT Saudi Arabia in Riyadh. Together, the events of the IFAT network are driving the transformation toward sustainable technologies worldwide.

Messe München
As one of the leading trade fair organizers, Messe München presents the world of tomorrow at its around 90 international trade fairs. Its portfolio comprises trade fairs for capital and consumer goods, as well as for new technologies. These include 14 of the world's leading trade fairs such as bauma, BAU, IFAT and electronica, cooperative events such as the IAA MOBILITY, and numerous guest events. With an international network of affiliated companies and foreign representatives, Messe München is active worldwide. Together with its around 1,200 employees in the Group, it organizes trade fairs in China, India, Brazil, South Africa, Turkey, Singapore, Vietnam, Hong Kong, Thailand, the U.S., and Saudi Arabia. Around 150 events held annually attract more than 50,000 exhibitors and around three million visitors in Germany and abroad. That makes Messe München an important economic driver, triggering purchasing power effects in the billions.