International Start-ups bring innovations in the field of Sustainable Chemistry to the World Chemical Conference ICCM5 in Bonn, Germany

30 Start-ups present their ideas at the ISC3 Investor Forum – final pitch for the Innovation Challenge 2023 worth EUR 25,000

Leather made from microorganisms instead of animal skin produced in Peru. A material made from locally sourced starch as a sustainable alternative to single-use plastic packaging from Colombia. Sunglasses made from recycled chip bags in India. Skin and hair care products based on proteins extracted from fish waste from Ethiopia. These are four of the innovative ideas with which 18 Start-ups live on site and a total of 30 online are presenting their ideas and themselves at the Investor Forum 2023 of the **International Sustainable Chemistry Collaborative Centre (ISC3)**. What's unique about this year's event with Start-ups from Europe, Africa, Latin America, North America and Asia is that it will be held live as part of the **5th World Chemical Conference (ICCM5)** on September 28th in Bonn.

Promoting investment in innovations in the field of Sustainable Chemistry

With the Investor Forum, the ISC3 brings international Start-ups, investors, scientists and decision-makers together. The annual event aims to promote investment in innovations in Sustainable Chemistry. "The fact that our Start-ups pitch their innovations at ICCM5 is a special opportunity for them, but also for ISC3," says Dr. Thomas Wanner, Managing Director of ISC3. "In addition to investors, such as venture capital funds, business angels and accelerators & incubators, they can thus directly inspire representatives from politics, industry, non-governmental organisations, science and environmental associations from more than 100 countries about the opportunities Sustainable Chemistry offers."

The pitches will be complemented by a live networking session in the evening, where participants can get to know each other and exchange ideas. Furthermore, the Investor Forum will feature a panel discussion on private and public international funding mechanisms to secure the innovation pipeline and the specific dynamics of the Sustainable Chemistry innovation ecosystem. In addition to the

program of the live event on September 28th, further Start-up presentations, as well as matchmaking, will also be offered digitally.

Registration and further information can be found at https://isc3.org/page/investor-forum

Start-ups find solutions to secure needs of the present without endangering ecological, social and economic foundations of future generations

Le Qara from Peru, Natupla from Colombia, Ashaya from India and Ray Cosmetics from Ethiopia are among the international Start-ups that will bring their innovations in the field of Sustainable Chemistry to the World Chemical Conference (ICCM5) in Bonn to present them to international investors and decision-makers. What unites the founders? They have found solutions to meet the needs of the present without compromising future generations' environmental, social and economic foundations. Le Qara, for example, produces vegan leather from microorganisms. It has the same breathability as animal leather, is biodegradable, and the residues from the manufacturing process can be used as liquid compost, so there is no waste.

The Colombian Start-up Natupla – Natural Plastic, is another excellent example of Sustainable Chemistry solutions, offering a single-use plastic alternative made from starch. Natupla uses a cost-efficient process to obtain a product with properties comparable to conventional plastics while also being biodegradable. A positive side effect is the support of local starch producers and farmers.

Also at the ISC3 Investor Forum, Ashaya is pitching its innovation: sustainable sunglasses made from recycled chip bags. In this way, the Indian start-up shows how the value of waste can be increased through technological and scientific innovation in the field of recycling. Moreover, Ashaya distributes this value fairly to those involved in the supply chain, especially the poorest: the waste pickers.The responsible use of resources is also at the heart of RAY Cosmetics' innovation. The Ethiopian Start-up produces skin and hair care products from protein extracted from fish skins and scales. This protein, extracted in unique, sustainable processes, gives shampoos and creams anti-ageing as well as moisturising and detoxifying properties.

ISC3 Innovation Challenge 2023

A highlight of the ISC3 Investor Forum 2023 will be the award ceremony and presentations by the finalists of the fourth ISC3 Innovation Challenge. This year, the Euro 25,000 competition will honour the best ideas on Sustainable Chemistry and Agriculture. "As the transformation of the chemical sector plays a key role in achieving most of the UN Sustainable Development Goals, we want the ISC3 Innovation Challenge to attract, reward and promote innovators in Sustainable Chemistry and their original solutions," says Dr Alexis Bazzanella, Director of the ISC3 Innovation Hub.

An international jury of experts selected the eight finalists (in alphabetical order) from a total of 113 high-ranking applications from Start-ups on five continents:

BIOWEG (Germany) has developed alternative biodegradable, biobased agricultural coatings by combining the power of bacteria, biotech and green chemistry. Their biodegradable coating emulsion replace petroleum and acrylic-based coatings from fertilizers and seeds.

ClimEtSan-OnTheGround GmbH (Germany) has developed ecological sanitation units and pyrolysis stoves that provide resources for biochar-compost production to restore soil fertility in smallholder

agriculture. In addition, the Start-up provides carbon credits and affordable, nutrient-rich fertilizer for the Global South.

Ecorich Solutions Limited (Kenya) has developed the WasteBot, an AI household waste decomposer device that takes only 24 hours to convert household waste into affordable organic fertilizer that is 70% cheaper than common fertilizers. Ecorich Solutions uses soil-based microorganisms, AI-enabled recycling, robotics, computer vision, and machine learning to convert waste into organic fertilizer with 95% accuracy.

KNUST Precision Aquaculture – AquaMet (Ghana) is an integrated system that enables fish farmers to monitor and manage their water quality efficiently in order to reduce high fish mortalities, increase their yield and revenue. KNUST's technology employs an IoT smart probe that collects water quality parameters and sends them via Bluetooth to a server, which then transfers the data to a mobile app for farmers.

Makabi Agritech (Croatia) helps producing eco-friendly foods and reduces the environmental impact caused by today's agricultural practices by reducing the use of heavy organic chemicals and agrochemicals. Its solution is a smart biopolymer microcapsule with 3-in-1 technology: protection, nutrition and time-release mechanism that releases various bioactive components at the time the plant needs them the most.

Molepse BioResources (Kenya) is a Start-up manufacturing and distributing an innovative organic pesticide to grain producers. Dudukit is an effective insect repellent that eliminates both larvae and live weevils. This product has been developed using nanotechnology, which enhances its usability and effectiveness.

Neptunus Biotech (Mexico) is on a mission to address the challenge of crop stress caused by climate change. The start-up has developed bio stimulant products using microalgae technology. Their aim is to enhance crop resilience and productivity, specifically under stressful conditions like droughts, high and low temperatures and mechanical or chemical damage.

SCHUTZEN CARE PRIVATE (India) has patented technology for processing waste seeds of the tamarind tree fruits. The start-up develops singular products and versatile formulations, that possess very high biogenic C-14 isotope, high biodegradability, and very low biochemical oxygen demand. Furthermore, these products contribute to reducing the carbon footprint, as SCHUTZEN's innovation can replace many fossil-based raw materials in specific industries, such as silicone, acrylates, or polyurethane.

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About ISC3

The **International Sustainable Chemistry Collaborative Centre** promotes Sustainable Chemistry for a sustainable world. ISC3 supports the chemical industry and chemical-related sectors in their transformation process through sustainable, innovative approaches from Sustainable Chemistry. The goal is a circular economy that implements the multiple aspects of sustainability over the entire life cycle of products and a rethinking of the behaviour of all stakeholders. To advance the dialogue between different sectors and actors worldwide, including Europe and other regions as well as emerging and developing countries, ISC3 follows a multi-stakeholder approach with the networking of policymakers, public and private sectors, education, science and society. It contributes to international chemicals policy, develops professional and academic training programs, advises companies, and promotes start-ups and research. Founded in 2017 by the Federal Environment Agency and the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, the centre is supported by the German Society for International Cooperation (GIZ) and by the Society for Chemical Engineering and Biotechnology (DECHEMA e.V.) as ISC3 Innovation Hub and Leuphana University Lüneburg as ISC3 Research & Education Hub. www.isc3.org