

Contact Information

ChemActiva Innovations Pvt Ltd

RISE Foundation IISER,

Indian Institute of Science Education and Research Kolkata,

Mohanpur, Nadia – 741246,

West Bengal, India

Email: chemactiva.innovations@gmail.com

Contact: +91 983 011 7780

Linkedin: <https://www.linkedin.com/company/104465867/admin/dashboard/>

About US

ChemActiva Innovations Pvt Ltd, is based and incubated in RISE Foundation IISER, IISER Kolkata, Mohanpur, Nadia, West Bengal - 741 246, with R&D and manufacturing sites currently in RISE Foundation IISER, IISER Kolkata. ChemActiva Innovations was established in 2023.

Our vision is to address pressing environmental challenges through innovative solutions, ChemActiva leverages advanced chemical processes and green technologies to create a sustainable future. The company is committed to developing products and processes that minimize environmental impact, promote resource efficiency, and support the transition to a circular economy.

Our journey

- 6th January, 2023 -----→ Incorporated and established
- 1st February, 2023 -----→ Incubated at RISE Foundation IISER, IISER Kolkata
- 6th January, 2024 -----→ Awarded DST-NIDHI PRAYAS startup grants 10 lacs from Savli Technology & Business Incubator (STBI), Gujarat.
- 30th March, 2024 -----→ Awarded HDFC Bank CSR Parivartan startup grant of amount 10 lacs.
- 22nd January, 2025 -----→ Selected top 10 startup in 'The BlueEconomy Mission 50 Accelerated Programme' conducted by Bhubneswar City Knowledge Innovation Cluster (BCKIC) Foundation and KIIT-TBI (Technology Business Incubator).

Philosophy and Aims of the company

ChemActiva Innovation Pvt Ltd is a dynamic deep-tech startup at the forefront of the clean technology and sustainability sectors. Founded with a vision to address pressing environmental challenges through innovative solutions, ChemActiva leverages advanced chemical processes and green technologies to create a sustainable future. The company is committed to developing products and processes that minimize environmental impact, promote resource efficiency, and support the transition to a circular economy.

Mission and Vision:

- **Mission:** To innovate and implement cutting-edge chemical technologies that contribute to a cleaner, more sustainable planet.
- **Vision:** To be a global leader in clean technology, recognized for pioneering solutions that drive sustainability and environmental stewardship.

Core Areas of Focus:

Sustainable Chemicals:

ChemActiva specializes in the development of eco-friendly chemicals and materials that reduce pollution and promote sustainability. These include biodegradable polymers, green solvents, and renewable chemicals derived from plant source.

Plant-Based Products:

Emphasizing the use of renewable and natural resources, ChemActiva develops a range of plant-based products. These products are designed to replace conventional, petroleum-based materials with sustainable alternatives. Examples include bioplastics, natural fiber composites, and bio-based additives for various industrial applications. By harnessing the power of plants, ChemActiva aims to reduce the carbon footprint and promote a circular economy.

Bio-Based Products:

Production of chemicals and materials from renewable biological resources, supporting the reduction of reliance on fossil fuels and promoting a circular economy.

Smart Materials:

Creation of materials that have self-healing, adaptive, or responsive properties, enhancing product longevity and reducing waste.

Future Outlook:

ChemActiva Innovation Pvt Ltd is poised for significant growth, driven by a strong commitment to sustainability and innovation. The company aims to expand its product portfolio, enhance its technological capabilities, and extend its market reach globally.

With a focus on creating lasting environmental impact, ChemActiva is set to become a pivotal player in the global clean tech and sustainability landscape.

Our Team

Dr. Goutam Kulsi

He is a visionary scientist and accomplished entrepreneur, currently serving as the Founding Director as well as Chief Executive Officer at ChemActiva Innovations Pvt. Ltd. With a robust academic background and a passion for translational research, Dr. Kulsi is at the forefront of driving innovation in the chemical and life sciences industries.

He earned his Ph.D. from CSIR-Indian Institute of Chemical Biology (IICB), Kolkata, where he specialized in advanced chemical biology and molecular research. To further hone his expertise and gain international research exposure, he completed a prestigious postdoctoral fellowship at Seoul National University, South Korea, a globally recognized center for scientific excellence.

With more than five years of experience in the chemical and pharmaceutical industries, Dr. Kulsi combines scientific depth with entrepreneurial insight. At ChemActiva Innovations, he leads strategic research initiatives, mentors scientific teams, and steers the company's mission to deliver innovative, science-based solutions to real-world problems. His work is guided by a commitment to excellence, sustainability, and the advancement of science-driven innovation in India and beyond.

Dr. Soumitra Hazra

He is an accomplished scientific professional currently serving as the Scientific Manager at ChemActiva Innovations Pvt. Ltd. With a strong academic foundation, he earned his Ph.D. from CSIR-Indian Institute of Chemical Biology (IICB), Kolkata, where he developed deep expertise in chemical and biological research. Following his doctoral studies, Dr. Hazra pursued postdoctoral research at FIBER, Japan, further broadening his international research experience and scientific perspective.

In his current role at ChemActiva Innovations, Dr. Hazra leads scientific initiatives, oversees R&D projects, and contributes to innovative solutions in the chemical and pharmaceutical sectors. With over three years of industry experience, he brings a unique blend of academic rigor and practical knowledge, making significant contributions to applied science and product development.

Mr. Rahul Mandal

Research Assistant at **ChemActiva Innovations Pvt. Ltd.**, holding a Master of Technology (M.Tech) degree from **Maulana Abul Kalam Azad University of Technology (MAKAUT)**
Passionate about scientific research and innovation in the field of chemical and material sciences.

Advisor

Prof. Swaminathan Sivaram

An eminent polymer scientist serving as an INSA Senior Scientist and Honorary Professor at IISER Pune and IISER Kolkata. He is widely recognized for his pioneering contributions to polymer chemistry, with a focus on biodegradable polymers and sustainable materials derived from renewable resources. His work has significantly advanced the field of environmentally friendly materials and green chemistry.

Prof. Amitava Das

Professor in the Department of Chemical Sciences at IISER Kolkata and former Director of CSIR-CSMCRI. He is a distinguished researcher known for bridging academia and industry through impactful interdisciplinary work. With deep expertise in chemical sciences, his contributions have advanced collaborative research in areas such as materials chemistry, energy, and sustainable technologies.

Prof. Sayam Sen Gupta

Professor in the Department of Chemical Sciences at IISER Kolkata, Prof. Sen Gupta is a leading expert in organic chemistry, with significant contributions to bio-inspired catalysis and biomaterial sciences. His research focuses on developing innovative catalytic systems inspired by nature and designing advanced biomaterials for applications in health, environment, and sustainable chemistry.

Prof. Anandamoy Puste

Retired Professor from the Department of Agronomy at Bidhan Chandra Krishi Viswavidyalaya, West Bengal. He is a distinguished expert in water and wetland management, with specialized work in *Shola* plantation and sustainable agronomic practices. Prof. Puste has made significant contributions to ecological agriculture, focusing on optimizing water use and promoting biodiversity in wetland ecosystems.

Products

➤ Cellulose Nanocrystals & Nanocellulose Products

ChemActiva Innovations: Advancing Sustainability with Nanocellulose Solutions

Cellu®, derived from renewable plant sources, represents a line of high-performance, biodegradable cellulose nanocrystals. Marketed under the name **Cellu®**, these carboxylated CNCs are designed to meet a variety of application needs and are available in both powder and liquid forms. Despite being used in small quantities, they deliver significant performance enhancements while maintaining a minimal carbon footprint.

At ChemActiva Innovations, we specialize in the production and commercialization of cellulose nanocrystals (CNCs) and formulated nanocellulose solutions. Our mission is to help manufacturers around the world enhance both the environmental sustainability and technical performance of their products through innovative biomaterials.

Introducing Cellu® – A Sustainable Functional Ingredient

Why Cellulose Nanocrystals?

Cellulose nanocrystals (CNCs) combine high performance with sustainability. Their nanoscale structure forms effective barriers against liquids, gases, and particles, while surface charges enable selective filtering. Available in versatile formats like additives or films, CNCs are easy to integrate across industries. Derived from plants and fully biodegradable, they offer a green alternative to synthetic materials.

Partner with ChemActiva

Our expert team works closely with clients to integrate CNCs into both existing and new products. Whether you're looking to enhance barrier properties, improve mechanical strength, or meet environmental targets, ChemActiva can help tailor a solution that aligns with your sustainability and performance objectives.

Sustainability of cellulose nanocrystals

Cellulose nanocrystals (CNCs) are a sustainable, biodegradable material derived from renewable plant sources. At ChemActiva, we collect waste materials of the plant from artisan for cellulose source. CNCs can replace fossil-based materials, offering an eco-friendly alternative with low

environmental impact. Their production creates recyclable by-products and, at ChemActive Innovations, is powered by green chemical reaction to minimize carbon emissions. CNCs also help reduce the weight—and carbon footprint—of final products, supporting greener material innovation.

Safety of cellulose nanocrystals

Cellulose nanocrystals are generally considered safe for use in various applications. Cellulose nanocrystals are derived from cellulose, which is a natural and biocompatible material that has been used in various applications for many years. Cellulose nanocrystals are also biodegradable, which means they do not accumulate in the environment or pose a long-term risk to human health or the environment.

➤ Cellulose-based oil spill kit

- A cellulose-based oil spill kit makes an ideal solution for addressing marine spills, industrial spills, and food-grade spills due to its versatile and environmentally friendly properties.
- Its advantage
- biodegradable and supply of raw materials as it is plant based.
- Lower specific weight which facilitates floatability (low density)
- Oleophilic properties
- High surface area, small pore size
- High strength and stiffness
- Excellent biocompatibility
- High oil adsorption capacity: Raw cellulose-based absorbents could absorb the spilled oil with a maximum yield of around 70%.
- Relatively low cost
- Eco-friendly and sustainable

Cellulose based oil spill kit are two different types one is marine another in domestic.

Domestic oil spill kit:

Reusable Oil Absorbent Kit

Safe | Sustainable | Taste-Preserving

Our oil absorbent kit is cleaner, safer, and more sustainable solution for domestic oil spills. The **Oil Absorbent Kit** is designed to effectively remove excess oil from food without leaving behind fibers, altering taste, or compromising your health.

Why Choose us?

Non-toxic & Food-Safe: Made from natural cellulose it ensures your food stays safe and unaltered.

- **High Efficiency:** With an ultra-porous structure (97.3% porosity) and low density (0.4 g/cm³), EcoPure™ offers superior oil absorption—especially during the first use cycle.
- **Water-Repellent Design:** The cellulose-based material has a water contact angle of 135°, ensuring selective oil absorption while repelling water.
- **Reusable & Eco-Friendly:** Oil can be recovered from the cellulose, making EcoPure™ a reusable and sustainable alternative to single-use paper towels.
- **Advanced Absorption Mechanism:** Powered by capillary action, Van der Waals forces, hydrophobic interactions, and optimized pore structure, EcoPure™ targets oil with precision and efficiency.

Perfect for:

- Draining fried foods
- Cleaning up kitchen oil spills
- Health-conscious and eco-conscious households

➤ Marine oil spill kit

Oil spills are a major threat to marine ecosystems, causing long-lasting environmental and economic damage. While synthetic sorbents like polypropylene and polyurethane are commonly used for cleanup, they are costly, non-biodegradable, and contribute to microplastic pollution.

ChemActiva Innovations has developed a sustainable alternative using *Aeschynomene aspera* L. (Shola plant), an abundant aquatic herb native to Bengal. Traditionally used in crafts, its inner stem is soft, lightweight, and 75% pure cellulose with no lignin. This material is naturally hydrophobic and oleophilic, capable of absorbing oil up to 50 times its weight. Through green technology, we've transformed this non-edible, low-cost plant into an **eco-friendly cellulose-based marine oil spill kit**, offering a biodegradable, effective solution for oil spill management.

