0734904543
bhairavi.ekbote@gmail.com
www.linkedin.com/in/bhairavi-ekbote

BHAIRAVI EKBOTE

Master's Student
Sustainable Technology @ KTH Royal Institute of Technology
bhairavi.com@gmail.com

Summary

Graduate student in Sustainable Technology with expertise in circular economy strategies, sustainable innovations, and resource-efficient solutions for industries, including ESG frameworks and sustainable finance. Expertise in conducting Life Cycle Assessments (LCA), Material Flow Analysis (MFA), and sustainability reporting frameworks such as CSRD and EPD. Strong background in chemical technology and resource management, with a focus on optimizing processes for sustainable supply chains and circular business models. Experienced in collaborating with stakeholders, developing KPIs, and implementing data-driven strategies to address complex sustainability challenges. Adept at leading multidisciplinary projects, driving change, and delivering impactful solutions aligned with corporate sustainability goals.

Skills – Project Management, Circular Economy Strategies, Life Cycle Assessment (LCA), Material and Energy Flow Analysis (MFA), ESG frameworks and Environmental Assessment, Sustainable Supply Chain Management, Policy and Legislation Analysis (EU Directives), Research and Development (R&D), Stakeholder Engagement, Communication (Written & Verbal), Data Analysis and Modelling, Multi-Criteria Decision Analysis, Sustainability Reporting, Team Leadership, Problem-Solving.

Education

Master of Science in Sustainable Technology **Aug 2023 - present**
KTH Royal Institute of Technology, Stockholm, Sweden

The program focuses on integrating sustainable practices with industrial processes, combining advanced technical knowledge with environmental systems analysis to develop and implement sustainable technologies. Worked in a diverse, international academic environment and collaborated on projects with cross-functional teams, enhancing my ability to work in multicultural settings.

Projects

- **Life Cycle Assessment**: Performed a comparative LCA of green and grey hydrogen production using SimaPro, applying the ReCiPe Midpoint (H) method for impact assessment. Focused on characterization, normalization, and interpretation of results to identify environmental hotspots and assess trade-offs in emissions, energy use, and resource consumption.
- **Stockholm Royal Seaport (SRS) Water System Analysis:** Investigated the water system for Stockholm Royal Seaport (SRS) to assess stormwater management, water footprint, and carbon load from water processing. Proposed improvements such as stormwater collection for greywater use and greywater cascading, which can reduce the overall carbon and water footprint in urban areas.
- **Material and Energy Flow Analysis:** Conducted a comprehensive material and energy balance with a focus on water for Holmen pulp and paper mill, focusing on Cleaner Production measures and improving resource efficiency and sustainability in industrial processes. Focused on proposing Cleaner Production alternatives like Zero Liquid Discharge to improve resource efficiency and sustainability in industrial processes. The project helped refine my ability to optimize resource flows, which is crucial for enhancing water efficiency in industrial operations.
- **Sustainable City Vision for Stockholm (2050):** Developed a comprehensive vision and strategic pathway for Stockholm to achieve sustainability by 2050, focusing on a zero-emission zone in the city center. Coordinated with multiple stakeholders, including municipal authorities and environmental organizations, to align the project with city-wide climate goals. Applied the modular Participatory Backcasting (mPB) framework, successfully engaging with key stakeholders
- **Wind Energy and Planetary Boundaries**: Investigated the impact of onshore and offshore wind farms on local ecosystems and climate, integrating the concept of planetary boundaries. Analyzed how wind energy projects can be designed to minimize ecological disruption while maximizing climate benefits.
- **Environmental Systems Analysis Tools**: Critically evaluated various environmental systems analysis tools, including a comparative study of battery electric vehicles versus internal combustion engines, focusing on reducing carbon emissions and sustainability. Developed skills in selecting the most appropriate tool for specific sustainability challenges.
- **(Ecodesign Rules) E-Waste Reduction**: Explored innovative solid waste management strategies, with a focus on the smart design of smartphones to reduce e-waste and minimize climate impact. Analyzed practical solutions for smartphones based on ESPR golden rules to enhance waste treatment and support sustainable urban development.
- **Digital Product Passport:** Analyzed the impact of the upcoming EU legislation on Digital Product passport for Ekoligens, and developed strategies for transparency and customer satisfaction, focusing on traceability and sustainability. This project enhanced my expertise in regulatory compliance and sustainable innovation, essential for industries focusing on transparency and product lifecycle management.
- **CSRD and Corporate Sustainability Management:** Analyzed Fazer's sustainability reporting strategy using the CSRD, ESPR, and GRI standards. Assessed the impact of its social sustainability in relation to nutrition, and evaluated how these frameworks guide the company's long-term sustainability goals. Evaluated sustainability strategy against UN SDGs, Paris Agreement, and frameworks like TCFD.

Bachelor of Technology in Fibres and Textile Processing Technology **Aug 2018-Aug 2022**
Institute of Chemical Technology, Mumbai, India **CGPA – 9.29/10**

Work Experience

Private Science Teacher **July 2022-Feb 2023**

- Teaching high school students' science. Enhanced student learning by optimizing wide range of instructional approaches.
- Evaluated course content and syllabus to facilitate student centered learning.

Electrochemical Treatment of Effluent (colored effluent) **July 2021-May 2022**

- Institute of Chemical Technology, Mumbai under Dr Sandeep More.
- Conducted research on innovative materials and methods for electrochemical treatment of effluent produced by chemical industry to degrade pollutants and preserve ecosystems.

White Biotechnology in Textile Processing **May 2021- Aug 2021**

- Rossari Biotech Ltd, Mumbai under Dr Amey Damle and Dr Ashok Athalaye
- Applied white biotechnology in textile processing, contributing to sustainable consumption and production. Developed processes that optimized resource usage, saving water, time, and energy.

Measurement and Relevance of Different Effluent Parameters in the Chemical Industry **May 2021-Aug2021**

- Institute of Chemical Technology, Mumbai under Dr. Sandeep P. More
- Characterized and optimized measurement of effluent in chemical processing industry, enabling recommendations for effective pre-treatment and further treatment processes.

Key Challenges in Sustainability in the Indian Process Industry **Dec 2020 - Dec 2021**
Development of a Framework for Co-management of Safety and Sustainability in the Indian Context

- Indian Institute of Technology, Bombay under Dr. Sandip Roy
- Identified key challenges and developed a framework for co-management of safety and sustainability in the chemical sector.

Achievements and Awards

- Patent – An Energy Efficient Cryogenic Based Grinder for Low Bulk High Value Commodities, Patent no – 472710
  Invented a low bulk high value commodity grinder that preserved aromatics of the spices, worked on gravity and nitrogen cooling and enabled low resource and water wastage.
- Recognized as Innovative Genius by Ministry of Human Resource Development, India

Positions of Responsibilities

Program Representative **Aug 2023 – Present**
Serving as a liaison between the Program coordinators, instructors and my peers; responsible for managing the allocated resources for professional development and social well-being of fellow program students.

Gender Discrimination Secretary **Sep 2020-June 2021**
Advocated for gender equality on campus, resolving conflicts, and ensuring effective communication among students and staff.

Editor, Textweets **Dec 2019-May 2020**
Curated and edited content, generated story ideas, and set publication standards for the campus magazine.

Extra-Curricular

- The Sustainable Development Goals – A global, transdisciplinary vision for the futures
- Energy Production, Distribution and Safety Specialization from The State University of New York, Buffalo
- Strategic Management, Negotiation, Financial Markets from Yale University, New Haven, Connecticut
- National Financial Literacy Assessment Test (NFLAT) conducted by the NCFE, India
- Swedish for Immigrants (SFI) – Kurs 3C

Computer Knowledge

MS Office, HTML, Sankey web flow, Stan2web, SimaPro, Miro, Tableau

Language Skills

English (Full working proficiency), Swedish (Elementary proficiency – 3C SFI), Hindi and Marathi (Native proficiency)

Interests

Sustainable Development and Technology, Water Resource Management, Financial Sustainability, Circular Economy, Climate Mitigation, Environmental Management Systems, Green Technology and Innovations, Policy Development for Sustainability

Hobbies

Reading, Writing, Debating, Hiking