



TO MAGNIFICA RETTRICE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE 7131

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Scienze per gli Alimenti, la Nutrizione e l'Ambiente**

Scientist- in - charge: Prof.ssa Pellegrino

[Name and surname]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Wijepala Abeysinghe Mudiyanseelage
Name	Asanka Nuvansiri Illankoon

PRESENT OCCUPATION

Appointment	Structure
01/02/2024	POSTDOC RESEARCHER-UNIVERSITY OF MILANO BICOCCA

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree			
Specialization	MINERAL RESOURCES AND TECHNOLOGY (BSC) - MINERAL PROCESSING TECHNOLOGY	Uva Wellassa University	2013
PhD	PH.D. IN CIVIL, ENVIRONMENTAL, INTERNATIONAL COOPERATION, AND MATHEMATICAL ENGINEERING	University of Brescia	2023
Master	MASTER IN RESOURCE ECONOMICS AND SUSTAINABLE DEVELOPMENT	University of Bologna	2018
Degree of medical			



specialization			
Degree of specialization	European		
Other			

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City

FOREIGN LANGUAGES

Languages	level of knowledge
ENGLISH	C2
ITALIAN	A2

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2023	Best Doctoral Dissertation Award under Environmental and Sanitary Engineering in Italy
2021	Poster Award-For the topic "Sustainable Resources for Decarbonising the Economy" The Poster entitled "An Estimation of the Energy Potential of Rice Industry By-Products in Sri Lanka" - 29th European Biomass Conference and Exhibition
2017	Research abroad scholarship

TRAINING OR RESEARCH ACTIVITY

description of activity

PhD research at the University of Brescia: Safety, sustainability and valorization of waste in the agri-food sector in resource limited countries.

This research addresses environmental challenges tied to increasing organic waste from agricultural production. The study advocates for a circular economy, focusing on sustainable valorization options for rice industry by-products in developing countries. Various options are explored, emphasizing energy generation and biochar production. Biochar is identified as promising, with economic feasibility. The research introduces a compact biochar production unit for small-scale stakeholders. and explores hydrogen storage in activated carbon materials derived from biochar, demonstrating its potential for solid-state hydrogen storage. The research delves into biochar's transformation into high-value-added products for heavy metal removal in water and wastewater treatment. The research assists policymakers in making strategic decisions to reduce greenhouse gas emissions and valorize agricultural waste in developing countries.

UNIVERSITY OF MILANO BICOCCA

Assessing the Sustainability of Microbial Activated Biochar Production for Remediation of Contaminated Sites



(Collaborated with Eni-Oil industry company)

- Conduct Lifecycle Assessment (LCA) using SimaPro

Conducting a comprehensive lifecycle analysis of microbial-activated biochar production, assessing environmental impacts at each stage, from raw material acquisition to end-use application. This includes evaluating energy use, emissions, material efficiency, and carbon footprint analysis throughout the process.

- Evaluate Cost-Benefit Analysis of the Production Value Chain

Analyzing the economic feasibility of microbial-activated biochar by comparing production costs with potential financial and environmental benefits. Focussing on optimizing the value chain to enhance both economic returns and sustainability outcomes.

- Assess Social Impact of Bioremediation on Hydrocarbon-Contaminated Sites

Conducting a social impact assessment to examine how the bioremediation of hydrocarbon-contaminated sites affects local communities. This involves evaluating changes in public health, employment opportunities, and social welfare resulting from biochar implementation.

University of Brescia

The research focused on plastic waste recycling and contributed to cutting-edge projects addressing various aspects of the recycling process, from technological advancements to social and environmental considerations.

- Advanced Separation Techniques:

Develop and optimize advanced separation methods for efficiently sorting and separating diverse plastics in mixed waste streams. Explore sensor-based sorting technologies, artificial intelligence applications, and innovative mechanical separation methods.

- Polymer Blends and Composites:

Explore the development of new polymer blends and composites using recycled plastics. Assess the mechanical, thermal, and chemical properties of these materials for various applications.

- Circular Economy Strategies:

Investigate strategies for incorporating recycled plastics into a circular economy. Study policies, economic incentives, and technological innovations that promote the use of recycled plastics and reduce reliance on virgin materials.

- Life Cycle Assessment (LCA) of Recycling Processes:

Conduct a comprehensive life cycle assessment of different plastic recycling processes to evaluate environmental impacts. Compare energy consumption, greenhouse gas emissions, carbon footprint, and other factors associated with various recycling methods.

- Recycling Infrastructure and Policy Analysis:

Evaluate the effectiveness of existing recycling infrastructure and policies. Investigate how policy changes or infrastructure improvements can impact plastic recycling rates and overall system sustainability.

It also encompasses various activities of the territory of the province of Brescia. The main focus is evaluating and addressing environmental and waste management issues. In that process, I carried out the following tasks:

- Risk Analysis Evaluation:

Assessment of requests submitted to the province for obtaining derogations regarding landfill waste eligibility. Participation in the authorization process for landfill subcategories.

- Annual Reports Analysis on Landfills:

Evaluation of annual reports concerning landfills within the territory.



- Data Systematization and Georeferencing:

Organization and systematization of collected environmental data.

Georeferencing of information for enhanced understanding and visualization.

- Mapping of Contaminated Sites and Piezometers:

Creation of detailed maps illustrating contaminated sites.

Analysis of data from piezometers, particularly focusing on hydrochemical monitoring of groundwater.

- Systematization and Analysis of Data for Geochemical and Anthropogenic Pollution Mapping:

Structuring and analysis of data for mapping geochemical and anthropogenic pollution, specifically for arsenic, manganese, and iron parameters.

- Mapping of Industrial Activities Associated with Pollution Situations:

Creation of maps highlighting industrial activities correlated with pollution situations.

PROJECT ACTIVITY

Year	Project
2024	Assessing the Sustainability of Microbial Activated Biochar Production for Remediation of Contaminated Sites
2023	Plastic waste recycling and contributed to cutting-edge projects

PATENTS

Patent

CONGRESSES AND SEMINARS

Date	Title	Place
2023	Biochar production, properties and its applications	University of Brescia
2023	Circular economy and waste management in low income countries	University of Brescia

PUBLICATIONS

Books
[title, place, publishing house, year ...]
[title, place, publishing house, year ...]
[title, place, publishing house, year ...]

Articles in reviews



Comparative Analysis of Facile and Novel Graphite Recovery Methods from Spent Li-ion Batteries: Environmental and Economic Implications, 2025 https://pubs.acs.org/action/showCitFormats?doi=10.1021/acssuschemeng.4c09084&ref=pdf
The Role of Procedure Duration in the Sustainability Assessment of Contaminated Site Management in Italy, 2024 https://doi.org/10.3390/su16062329
Preparation and Modification of Biochar Derived from Agricultural Waste for Metal Adsorption from Urban Wastewater, 2024 https://doi.org/10.3390/w16050698
Value Chain Analysis of Rice Industry by Products in a Circular Economy Context: A Review, 2023 https://doi.org/10.3390/waste1020022
Evaluating Sustainable Options for Valorization of Rice By-Products in Sri Lanka: An Approach for a Circular Business Model, 2023 https://doi.org/10.3390/agronomy13030803
Development of a Dual-Chamber Pyrolizer for Biochar Production from Agricultural Waste in Sri Lanka. 2023 https://doi.org/10.3390/en16041819
Agricultural Biomass-Based Power Generation Potential in Sri Lanka: A Techno-Economic Analysis, 2022 https://doi.org/10.3390/en15238984
Rice Industry By-Products as Adsorbent Materials for Removing Fluoride and Arsenic from Drinking Water—A Review, 2022 https://doi.org/10.3390/app12063166
Congress proceedings
Life Cycle based assessment of graphite recovery from spent Li-ion batteries SIDISA 2024, XII International Symposium on Environmental Engineering Palermo, Italy, October 1-4, 2024
Hydrogen storage investigation on KOH-activated carbon derived from rice industry by-products Conference: Cariplo project on agri-food waste At: Pavia, Italy
Potential of biochar derived from food industries as a sustainable adsorbent material for clean water provision in developing countries. Conference: VII Congresso CUCS LA COOPERAZIONE UNIVERSITARIA NELLE NUOVE SFIDE PER LO SVILUPPO SOSTENIBILE Capacity-building, Science Diplomacy e Open Science nei rapporti tra Nord e Sud del mondo nel nuovo contesto globale At: Naples, Italy
Biochar Derived from the Rice Industry By-Products as Sustainable Energy Storage Material Conference: 30th European Biomass Conference and Exhibition (EUBCE) At: France
A technical, economical, and environmental comparison of composting and anaerobic digestion of organic waste fraction of municipal solid waste in Sri Lanka



Conference: Waste-to-Resources 2021. 9th International Symposium Circular Economy, MBT, MRF and Recycling At:GermanyVolume: ISBN 9783736975002 / 3736975007
An estimation of the energy potential of rice industry by-products in Sri Lanka 29 EU Biomass Conference and Exhibition
Valorisation resources of agricultural waste materials in the circular economy context The 8 Global Social Sciences Graduate Student e-Conference-Hongkong
Feasibility study on municipal solid waste to energy generation technologies in Sri Lanka 8th International Symposium on Energy From Biomass and Waste, Venice, Italy
Eco Agricultural Development Project Hambanthota, Sri Lanka Sostenibilità dei progetti ambientali di cooperazione allo sviluppo Book of Abstract del XVI Convegno CeTAmb LAB Brescia, 18 dicembre 2019. ISBN 978-88-97307-16-7

OTHER INFORMATION

Review for International Journals and Conference <ul style="list-style-type: none">• Sustainability (I.F. 3.9)• Energies (I.F. - 3.2)• Process (I.F. - 3.5)• Cogent Engineering• Research on world agricultural economy• European Biomass Conference and Exhibition (EUBCE)• International research conference of Uva Wellassa University, Sri Lanka

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: Milan, 21.01.2025

