

Forum 3 Green Technology and its applications



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Chair	Prof. Dr. Imran Hashmi (National University of Sciences and Technology)	
20:00 - 20:04	Introduction to the forum	
Time	Speaker	Affiliation
20:05 - 20:12	Duan Yongjian	Jinzhong College of Information
20:13 - 20:23	Edgar De Jesus Sandoval Arboleda & Vivian Orejuela Ruiz	Unidad Central del Valle del Cauca
20:24 - 20:32	Jimena Barrientos Parás	Universidad Nacional Autónoma de México (UNAM)
20:33 - 20:42	Kunzheng CAI	South China Agricultural University
20:43 - 20:53	Zhang Tiantian	Jinzhong College of Information
20:54 - 20:58	Xiaoyun Wang	Shandong Agricultural University
20:59 - 21:09	Rashid Iftikhar	National University of Sciences and Technology
21:10 - 21:20	Dr. Moisés Tejocote Pérez	Autonomous Mexico State University

Green technology and its applications are crucial for addressing contemporary environmental challenges and fostering a sustainable future. By emphasizing the development and deployment of eco-friendly solutions, green technology aims to minimize the ecological footprint of human activities. Whether in energy production, transportation, waste management, or construction, the adoption of green technology mitigates the impact on the environment, reducing pollution, conserving resources, and curbing greenhouse gas emissions. These innovations not only contribute to environmental conservation but also drive economic growth by fostering industries focused on renewable energy, energy efficiency, and sustainable practices. In essence, the importance of green technology lies in its potential to harmonize human development with the preservation of our planet, creating a pathway toward a more resilient and environmentally responsible global society.

Topic: Green development of agriculture and control of salinized soil



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Duan Yongjian
ORCID:
Jinzhong College of Information

Speaker 1

Abstract

Soil salinization has become a serious threat to soil health and food security. Green development of agriculture is related to the development of agriculture and human welfare. The soil salinization phenomenon in the Syr Darya River irrigation area, the composition, spatial distribution and influencing factors of soil salt were studied, and relevant countermeasures were proposed for green agriculture and sustainable development in the Syr Darya River Basin.

Topic: Vertical Urban Crops, an alternative to reduce the carbon footprint of food transportation in Colombia

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Prof. Edgar De Jesus Sandoval Arboleda
ORCID:
Prof. Vivian Orejuela Ruiz
ORCID:
Unidad Central del Valle del Cauca
Speaker 2

Abstract

One of the main challenges of conventional agriculture is related to the logistics and transportation of perishable products, whether nationally or globally. In regions with scarce land, unfavorable climatic conditions for outdoor cultivation or geographies that increase transportation costs, as is the case in Colombia, an ideal alternative has emerged: vertical urban crops; this option is safer, dispenses with pesticides or herbicides, requires less water and space, and has shorter delivery circuits, thus reducing the polluting footprint. According to statistics from the Food and Agriculture Organization of the United Nations, since 2007 approximately half of the world's population has been living in urban areas, and this proportion is projected to reach 60% by 2030. Cities and metropolitan areas are responsible for about 70% of global carbon emissions and more than 60% of resource consumption (Sustainable Development Goals Indicators, 2021). This reality increases the demand for food in urban environments significantly.



Topics: Effects of biological pretreatments and co-digestion with bovine manure for enhancing the anaerobic digestion and biomethane yield in *S. natans* y *S. fluitans*

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Dr. Jimena Barrientos Parás - México (UNAM)

ORCID:

Speaker 3

Abstract

Sargassum natans and *S. fluitans* (sargassum) arrivals in the southeast coast of Mexico represent a serious problem. This biomass must be properly managed to avoid negative impacts in the zone, being a sustainable option the recovery of a resource (methane) by anaerobic digestion (AD). Hydrolysis is the limiting step for methane production from sargassum, as it is a recalcitrant biomass with lignocellulosic fibers and structural polysaccharides like alginate, fucoidan and laminin. Using biological pretreatments, as well as codigestions to accelerate the rate and extent of methane production would improve the techno-economic feasibility of the process, while reducing the mass of the final residue (digestate). In this work, the anaerobic digestion (AD) of sargassum is coupled to microbial and enzymatic pretreatments (CellicCtec2 and alginate lyase enzymes) as well as codigestion with bovine manure to increase the hydrolysis and, in consequence, the methane production.

Topic: The new Mexican termodried foods: Environmental economy

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Dr. Moisés Tejocote Pérez - Autonomous Mexico State University

Speaker 8

Abstract

The Research Center in Applied Biological Sciences of the Faculty of Sciences, UAEMéx., has a patent to dehydrate foods using the Advanced Thermodehydration method at low temperatures, obtaining foods that preserve their nutritional content in a functional manner up to 98% efficiency, does not use chemical preservatives and has a shelf life of up to 5 years at room temperature, reduces its weight by 90% and is easy to store without refrigeration methods. Its functional nutrients keep the metabolism of the human body active and provide vitamins, proteins, carbohydrates, lipids, enzymes, minerals, antioxidants and metabolites with high nutritional and health-beneficial properties, since, due to their form, they improve nutrition and prevent diseases. such as cancer, diabetes, hypertension, anemia, colitis, allergies, atherosclerosis, constipation kidney problems. Environmental, Industrial, Medical and Food Biotechnology, using fungi, bacteria, protozoans and microalgae as biological models, applied in wastewater treatment, phytoremediation, soil bioremediation, organic fertilization of vegetables, production of bioenergetics, advanced dehydration of foods, development of antivirals, vaccines, functional additives and management of forest systems.