QIANG LI
Huazhong Agricultural University,
China

Pathways to utilize agricultural biomass for bioeconomy

Abstract:

Sustainable development represents an emergent challenge for our society, especially the limited resource on the planet cannot meet the massive demands of energy, food, clean water, and healthcare, if the global population reaches as large as nine billion by 2050. China has made progress in the development of straw-based biomass, utilizing it for fuel conversion, materials, fertilizes, animal feed, and such. Despite the great potential, these conversions are challenging, since the difficulties in the collection and storage of straw, variations in straw texture affecting product yield, and inadequate technology for recycling the components of straw. Livestock manure, as a massive waste in agriculture, has a significant negative impact on the environment and ecology. Currently, the resource utilization level of livestock and poultry manure is low, and the comprehensive utilization technology is relatively outdated, leading to ineffective recycling and treatment.

Modern agriculture's sustainable development goals aim to enhance crop productivity and quality without compromising the ability to meet future food demand. Crop residues generated from farming and agricultural practices play a crucial role in enhancing crop productivity through the carbon flow pathway in agricultural ecosystems. Composting and returning crop residue to the field can sequester it as soil organic carbon, thereby improving soil fertility. We indicated converting crop residue into bio products through bio refining can contribute to the bio economy and sustainable development. In summary, the utilization of biomass resources has the potential to revolutionize sustainable agriculture. The use of straw-based biomass and animal manure in modern agriculture can pave the way for an unprecedented bio economy.

Biography

Dr. Qiang Li has completed his PhD from Hokkaido University and did his postdoc research at both Texas A&M University and North-eastern University in the United States. After that, he returned Texas A&M University and worked there as a Scientist I. He is currently serving as a full professor in the College of Engineering and an adjunct professor in the College of Horticulture and Forestry Sciences at Huazhong Agricultural University, China. He has published more than 51 peer-reviewed papers, including ACS Nano, Trends in Biotechnology, etc., and he has served as the ad hoc reviewer for about 10 journals.