



2020 IEEE INTERNATIONAL WORKSHOP ON

METROLOGY FOR AGRICULTURE AND FORESTRY



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CALL for PAPERS

for the Special Session on

MEASURING REQUIREMENTS IN NEW BIO-BASED CIRCULAR VALUE-CHAINS



ABSTRACT

Bio-economy refers to the sustainable production of renewable biological resources and the conversion of these resources and waste / waste streams into industrial value-added products, such as food, feed, bio-based products, bio-energy. This broad and complete vision highlights that the activities of the entire socio-economic system are interconnected with each other and with the environment in which they take place. The need arises to implement production solutions with advantageous value chains to make the use of material and energy as efficient as possible. The use of biomass waste takes on a very important role if properly managed. This management also includes suitable methods of measuring the phenomena that most affect the value chains.

From the point of view of basic and applied research this leads to three main considerations:

1. research and innovation for businesses also need a systemic and integrated approach;
2. the complex network of relationships that characterizes the bio-economy has great potential for the sustainable management of economic activities at the supply chain level;
3. there is great potential for the benefits of industry 4.0 and digital transformation to pursue sustainability objectives.

The potential inherent in bio-based residual materials can be exploited in the most effective way considering all aspects related to its possible uses, at company and value chain level (i.e. precise characterization of the material, business models, traceability and certification, processes and machines, regulatory, political and social system). In this context, the concept of "measurement" and "measurement precision" take on completely new connotations, since they no longer have an absolute value, but must be constantly calibrated on the specific decision-making objectives and on the level of detail of the system. The possible secondary uses depend on the measurement of the chemical-physical characteristics of the residues. On the measure of the company performance indicators depends the degree of circularity and sustainability of a product or business. New markets depend on the measure of performances of the use of secondary raw materials included in value chains. The achievement of a certification depends on specific product or process key performance indicators. The precision, the instrumentation and the calculation methods are certainly very different but they all imply well-defined quantitative approaches.

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TOPICS

We welcome contributions in new measuring approaches in the following topics:

- innovative uses of bio-based residual materials;
- new business models and policy frameworks related to the use of bio-based residual materials;
- characterization needs related to different uses of bio-based residual materials;
- performance evaluation of bio-based value chains with focus on residual materials;
- traceability and regulatory issues;
- digitalization as enabler for new bio-based circular value chain;
- production measures.

MORE INFORMATION



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