

Special Issue

Identification and Quantification of Hazardous Elements and Compounds in Biomass Originating from Various Sources

Message from the Guest Editors

Biomass is composed of organic materials originating from plants or animals such as crop waste, forestry residues, agricultural residues, algae, energy crops, and food wastes. Industrialization is one of the major sources of environmental pollution and a worldwide concern. Heavy/toxic metals such as Pb, As, Hg, Cd, and Cr are used in many industrial, urban, and agricultural applications. Therefore, the rapid, sensitive, and cost-effective compositional analysis of these materials is paramount. For a qualitative and quantitative analysis of constituents present in these materials, different analytical techniques such as inductively coupled plasma mass spectrometry (ICP-MS), electron dispersion X-ray fluorescence (EDXRF), atomic absorption spectroscopy (AAS) are commonly used. In the past decade, laser-induced breakdown spectroscopy (LIBS) has emerged as a quick, ecofriendly, efficient, and useful analytical technique for the detection of trace and major constituents present in any type of material. For the identification of the organic/inorganic compounds which have adverse effects on living organisms, PAS, UV-VIS, FTIR, and LIF techniques are in use.

Guest Editors

Prof. Dr. Awadhesh Kumar Rai

Laser Spectroscopy Research Laboratory, Department of Physics,
University of Allahabad, Prayagraj 211002, India

Dr. Rohit Kumar

Department of Physics, CMP Degree College, University of Allahabad,
Prayagraj 211002, India

Deadline for manuscript submissions

closed (20 August 2023)



Biomass

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Editor-in-Chief

Dr. Dimitris P. Makris

Green Processes & Biorefinery Group, Department of Food Science & Nutrition, School of Agricultural Sciences, University of Thessaly, N. Temponera Street, 43100 Karditsa, Greece

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