Biography

Izabela Michalak received her MSc in Biotechnology (2005) and PhD in Chemical Technology (2010) with specialization in Biotechnological processes from Wroclaw University of Science and Technology (Poland). She currently works as a full-time professor at the same University.
She works on the valorization of waste biomass (for example, seaweed) into valuable products for modern agriculture (e.g., biostimulants of plant growth, soil additives) and environmental protection (e.g., biosorbents of pollutants). For this purpose, several technologies are used, such as (1) extraction of biologically active compounds from waste biomass (e.g., conventional and novel extraction techniques such as Ultrasound-Assisted Extraction, Enzyme-Assisted Extraction), (2) homogenization of waste biomass, (3) pyrolysis of waste biomass to obtain agriculturally valuable biochar, and (4) sorption used to remove heavy metal ions from wastewater using biosorbents (biomass, biochar) or to produce biosorbents enriched with specific microelements that can be applied as a soil additive. The bioproducts obtained are subjected to a detailed analysis of their physicochemical composition and tested on plants (in a phytotron). She is/was the principal investigator and co-investigator of several externally funded research projects. She cooperates in the field of seaweed biomass management with national and international universities, for example, Université Bretagne Sud in Vannes (France) or Istituto di Scienze e Tecnologie Chimiche "Giulio Natta" in Milan (Italy). Izabela Michalak is the supervisor of four completed doctoral dissertations and four currently in progress. In addition to research work, she also teaches students – including in English (e.g., Research skills, Research Methodology, Environment impact, Agrochemicals and plant health products, The latest research directions in chemical engineering, Statistical methods for the results evaluation) – and supervises engineering projects, Master's theses, and internships. She is the author of over 180 peer-reviewed papers in international journals/books and 8 patents. Her h-index is 47 (according to SCOPUS).