Institute of Biochemistry and Biophysics Polish Academy of Sciences (IBB PAS) Poland, Pawinskiego 5a, 02-106 Warsaw, www.ibb.edu.pl









Laboratory of White Biotechnology

Searching for a partner from Austria, Czech Republic, Slovenia, Switzerland, Germany, Luxembourg or Belgium-Flanders to build a consortium within the framework of the Weave-UNISONO program:

https://www.ncn.gov.pl/en/ogloszenia/konkursy/weave-unisono

under the research topic

Factors affecting microbial interactions and metabolic pathways leading to bio-hydrogen production and bio-methane production during anaerobic digestion

<u>Key words:</u> bio-hydrogen, bio-methane, anaerobic digestion, dark fermentation, microbial interactions and metabolic pathways

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About the Institute



- The Institute of Biochemistry and Biophysics of the Polish Academy of Sciences (IBB PAS) in Warsaw is one of the leading scientific institutes in Poland
- > It conducts basic research in the life sciences: biology, biophysics, biochemistry and genetics
- For the Institute, it is important to put the results of basic research into practice and use them in the creation of modern technologies in cooperation with industrial partners

Laboratory of White Biotechnology

Laboratory of White Biotechnology (IBB PAS) field of expertise

- Research on the anaerobic digestion of wastes and by-products of the sugar beet industry as a source of gaseous biofuels
- The works include basic, development and implementation works into the technology of bio-hydrogen and bio-methane production as a result of anaerobic digestion and the use of the bio-gases for energy

Our experience – Basic Research

Biochemical and molecular analysis of anaerobic digestion microbial communities Microorganisms are the key players in biological hydrogen and methane production What we can bring to join consortium – expertise on:

- the interactions in microbial communities determining bioreactors performance: competition, cross-feeding and synergy
- non-biological factors relevant for bio-hydrogen production via dark fermentation

The Main Papers of Laboratory of White Biotechnology:

- 1. Biotechnology for Biofuels, 2021, DOI: 10.1186/s13068-021-01968-0
- 2. Frontiers in Microbiology, 2021, DOI: 10.3389/fmicb.2020.612344
- 3. Microbiome , 2021, DOI: 10.1186/s40168-021-01105-x
- 4. Microbial Cell Factories, 2019, DOI: 10.1186/s12934-019-1085-1
- 5. Biotechnology for Biofuels 2018, DOI: 10.1186/s13068-018-1106-z
- 6. International Journal of Coal Geology, 2018, DOI: 10.1016/j.coal.2018.07.015
- 7. International Journal of Hydrogen Energy, 2018, DOI: 10.1016/j.ijhydene.2018.05.004
- 8. Polish Journal of Environmental Studies, 2017, DOI: 10.15244/pjoes/68149
- 9. PLOS ONE, 2015, DOI: 10.1371/journal.pone.0128008
- 10. Bioresource Technology, 2011, DOI: 10.1016/j.biortech.2011.08.063

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INSTITUTE OF BIOCHEMISTRY AND BIOPHYSICS POLISH ACADEMY OF SCIENCES

Our experience – R&D



Bioprocessing scale-up.

Projects: PBS 1/B9/9/2012 and BIOSTRATEG2/297310/13/NCBiR/2016 supported by The National Centre for Research & Development

