



Prof. Dr. Benteng Wu

Email: wubt@ms.giec.ac.cn



Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences

Research Interests

Microbial chain elongation; Thermal delamination of end-of-life photovoltaic laminates; Mechanisms of extracellular electron transport and energy metabolism/conversion in functional microorganisms

Work and Education Experience

Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences - Professor	2023.02—Present
Emerging Solid Waste High-Value Recycling Research Center	Guangzhou
MaREI Center for Energy, Climate and Marine - Postdoctoral Researcher	2022.04—2023.02
Supervisor: Prof. Jerry D. Murphy	Cork, Ireland
University College Cork - PhD in Environmental Engineering (Full scholarship)	2019.05—2022.05
Supervisor: Prof. Jerry D. Murphy and Prof. Richen Lin	Cork, Ireland
Hefei University of Technology - Master of Engineering	2015.09—2018.07
Supervisor: Prof. Wei Wang	Hefei, China
Hefei University of Technology - Bachelor of Engineering	2011.09—2015.07
Water Supply and Drainage Engineering	Hefei, China

Representative Research Grants

- National Natural Science Foundation of China (NSFC) Youth Program**, Mechanism Study on Catalytic Carbon Chain Elongation for n-Caproic Acid Production via Functionalized Biochar, Grant No. 52406281, RMB 300,000, Principal Investigator 2025.01—2027.12
- CAS Project for Young Scientists in Basic Research**, Novel Methods for Green Recycling of Core Components in New Energy Devices, Grant No. YSBR-098, RMB 20,000,000, Co-Principal Investigator (5/10) 2023.07—2028.07
- National Key R&D Program of China**, Technology for Large-Scale Continuous Pyrolysis Equipment of End-of-Life Photovoltaic Laminates, Grant No. 2023YFC3906201, RMB 4,200,000, Principal Investigator 2023.12—2027.11
- CAS President's International Fellowship Initiative**, Distinguished International Scientists, collaboration with Prof. Alessandro Manzardo, University of Padova, Grant No. 2026PD0064, RMB 80,000, Principal Investigator 2025.01—Now
- Sub-Project of National Key R&D Program of China**, Grant No. 2023YFC3106701-3, RMB 700,000, Principal Investigator 2023.12—2026.11
- Interreg North-West Europe**, Grant No. NWE964, €3,780,800, Participated 2022.04—2023.02
- Ireland Environmental Protection Agency**, Grant No. 2018-RE-MS-13, €341,100, Participated 2019.05—2022.05

Representative Publications

1. **Benteng Wu**, Richen Lin, Jing, Gu, Haoran Yuan, Jerry D. Murphy. Biochar confers significant microbial resistance to ammonia toxicity in n-caproic acid production. **Water Research**, 2024 (IF = 11.5).
2. **Benteng Wu**, Richen Lin, Richard O'Shea, Chen Deng, Karthik Rajendran, Jerry D Murphy. Production of advanced fuels through integration of biological, thermo-chemical and power to gas technologies in a circular cascading bio-based system. **Renewable and Sustainable Energy Reviews**, 2021 (IF = 16.3).
3. **Benteng Wu**, Richen Lin, Xihui Kang, Chen Deng, Alan DW Dobson, Jerry D Murphy. Improved robustness of ex-situ biological methanation for electro-fuel production through the addition of graphene. **Renewable and Sustainable Energy Reviews**, 2021 (IF = 16.3).
4. **Benteng Wu**, Richen Lin, Xue Ning, Xihui Kang, Chen Deng, Alan DW Dobson, Jerry D Murphy. An assessment of how the properties of pyrochar and process thermodynamics impact pyrochar mediated microbial chain elongation in steering the production of medium-chain fatty acids towards n-caproate. **Bioresource Technology**, 2022 (IF = 9.7)
5. **Benteng Wu**, Richen Lin, Xihui Kang, Chen Deng, Ao Xia, Alan DW Dobson, Jerry D Murphy. Graphene addition to digestion of thin stillage can alleviate acidic shock and improve biomethane production. **ACS Sustainable Chemistry & Engineering**, 2020 (IF = 7.1).

Conferences

1. **Co-chair**: 11th International Conference on Environment, Resources & Energy, Galway, Ireland, 2024-05-24
2. **Keynote Speech**: High-quality recycling of end-of-life new energy devices. **2nd Workshop on Thermal Conversion for Carbon Neutrality**, Datong, China, 2023-08-10.
3. **Oral Presentation**: A perspective on advanced fuels production by integrating biological, thermo-chemical and power to gas technologies in a circular cascading bio-based system. **31st Irish Environmental Researchers Colloquium (Environ 2021)**, Cork, Ireland, 2021-06-16.

Academic and Professional Service

1. **Consulting Expert**, Wind and Solar Recycling Committee, China National Resources Recycling Association, 2023 – Present

Awards

1. **Distinguished Backbone Researcher**, Chinese Academy of Sciences, 2023
2. **Outstanding Youth Contribution Award for Technological Innovation in Circular Economy**, The Nonferrous Metals Society of China, 2023
3. **Chinese Government Award for Outstanding Self-financed Students Abroad** (Ranked 1st in Category A, Ireland Region), China Scholarship Council, 2022