

## Benteng Wu

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University College Cork



### RESEARCH INTERESTS

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Bioenergy; Biorefinery; Anaerobic digestion; Chain elongation

### EDUCATION

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<b>University College Cork</b>	2019.05—2022.05
<i>PhD</i> (Environmental Engineering)	Cork
Supervisor: Prof. Jerry D. Murphy & Dr. Richen Lin	Ireland
<b>Hefei University of Technology</b>	2015.09—2018.07
<i>M.Eng.</i> (Municipal Engineering; GPA3.79; Top 5%)	Hefei
Supervisor: Prof. Wei Wang	China
<b>Hefei University of Technology</b>	2011.09—2015.07
<i>B.Eng.</i> (Water Supply and Drainage Engineering; GPA3.52; Top 10%)	Hefei

### RESEARCH EXPERIENCE

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<b>MaREI Centre, University College Cork</b>	Cork, Ireland
Role: PhD Student	2019.05—2022.05
<ul style="list-style-type: none"><li>Project title: Production of advanced gaseous biomethane transport fuel in an integrated circular bioenergy system (Ireland Environmental Protection Agency (EPA) Research Programme 2014-2020)</li><li>Accomplishments: 1) Modelling of interspecies electron transfer to enhance anaerobic digestion; 2) Upgrading biogas to biomethane in biological methanation systems; 3) Pyrochar as a bridge linking anaerobic digestion and solid digestate pyrolysis in a circular bioenergy system; 4) Communication and dissemination including project website and twitter account updating, technical report writing, and presentation of research progress for the Steering Committee</li></ul>	

### PUBLICATIONS / CONFERENCES / WORKSHOPS

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#### Patents:

- Chinese patent: A treatment method for hard-to-degrade organic wastewater (CN201610025067.X; authorized; second inventor)

#### Peer reviewed papers:

1. **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 (Top 5%; IF = 14.982).
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 (Top 5%; IF = 14.982).
3. **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 (Top 10%; IF = 8.198).
4. **Benteng Wu**, Jing Wang, Zhenhu Hu, Shoujun Yuan, Wei Wang\*. Anaerobic biotransformation and potential impact of quinoline in an anaerobic methanogenic reactor treating synthetic coal gasification wastewater and response of microbial community, *Journal of Hazardous Materials*, 2020 (Top 5%; IF = 10.588).
5. **Benteng Wu**, Chunhua He, Shoujun Yuan, Zhenhu Hu, Wei Wang\*. Hydrogen enrichment as a bioaugmentation tool to alleviate ammonia inhibition on anaerobic digestion of phenol-containing wastewater, *Bioresource technology*, 2019 (Top 10%; IF = 9.642).
6. Wei Wang\*, **Benteng Wu**, Shanglei Pan, Kai Yang, Zhenhu Hu, Shoujun Yuan. Performance robustness of the UASB reactors treating saline phenolic wastewater and analysis of microbial community structure, *Journal of Hazardous Materials*, 2017 (Top 5%; IF = 10.588).

#### Collaborated peer reviewed papers:

7. Richen Lin, Richard O'Shea, Chen Deng, **Benteng Wu**, Jerry D Murphy. A perspective on the efficacy of green gas production via integration of technologies in novel cascading circular bio-systems, *Renewable and Sustainable Energy Reviews*, 2021 (Top 5%; IF = 14.982).
8. Chen Deng, Richen Lin, Xihui Kang, **Benteng Wu**, Richard O'Shea, Jerry D Murphy. Improving gaseous biofuel yield from seaweed through a cascading circular bioenergy system integrating anaerobic digestion and pyrolysis, *Renewable and Sustainable Energy Reviews*, 2021 (Top 5%; IF = 14.982).
9. Xue Ning, Richen Lin, Richard O'Shea, David Wall, Chen Deng, **Benteng Wu**, Jerry D Murphy. Emerging bio-electrochemical technologies for biogas production and upgrading in cascading circular bioenergy systems, *iScience*, 2021 (Cell press).
10. Xihui Kang, Richen Lin, Lianhua Li, **Benteng Wu**, Chen Deng, Richard O'Shea, Yongming Sun, Jerry D Murphy. Assessment of pretreatment and digestion temperature on anaerobic digestion of whiskey byproducts and microbial taxonomy, *Energy Conversion and Management*, 2021 (Top 5%; IF = 9.709).
11. Chen Deng, Richen Lin, Xihui Kang, **Benteng Wu**, David M Wall, Jerry D Murphy. What physicochemical properties of biochar facilitate interspecies electron transfer in anaerobic digestion: A case study of digestion of whiskey by-products, *Fuel*, 2021 (Top10%; IF = 6.609).
12. Jing Wang, **Benteng Wu**, Julian Muñoz Sierra, Chunhua He, Zhenhu Hu, Wei Wang. Influence of particle size distribution on anaerobic degradation of phenol and analysis of methanogenic microbial community, *Environmental Science and Pollution Research*, 2020 (IF = 4.223).

#### Conferences:

1. **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. **31<sup>st</sup> Irish Environmental Researchers Colloquium (Environ 2021)**, Cork, Ireland, 2021.

2. **Oral Presentation:** Production of advanced fuels through integration of biological, thermo-chemical and power to gas technologies in a circular cascading bio-based system. **MaREI annual symposium**, Cork, Ireland, 2021.
3. **Poster Presentation:** Quinoline degradation in the methanogenic consortia and its potential impact on the performance of UASB reactor treating coal gasification wastewater. **15<sup>th</sup> IWA World Conference on Anaerobic Digestion**, Beijing, China, 2017.

## TEACHING EXPERIENCE

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|---|-----------------|
| ➤ Teaching and demonstrating for undergraduates in School of Engineering, UCC | 2021.02—2021.04 |
| ➤ Teaching and demonstrating for postgraduates in School of Chemistry, UCC    | 2020.10—2021.05 |

## AWARDS

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| ➤ Excellent Graduate of Anhui Province, 2018 (Top 1%)                       | China |
| ➤ Outstanding Graduate of Hefei University of Technology, 2018 (Top 5%)     | China |
| ➤ National Scholarship for Postgraduate, 2017 (Top 5%)                      | China |
| ➤ First-class Scholarship of Hefei University of Technology, 2017 (Top 10%) | China |
| ➤ First-class Scholarship of Hefei University of Technology, 2015 (Top 10%) | China |

## REFEREES

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1. **Prof. Jerry D. Murphy** (MaREI Centre Director, Professor Chair of Civil Engineering, Biogas Task Leader at IEA Bioenergy, University College Cork)  
Email: [jerry.murphy@ucc.ie](mailto:jerry.murphy@ucc.ie); Tel: +353 86 0554493
2. **Dr. Richen Lin** (Lecturer in Environmental Engineering, Marie Skłodowska-Curie Fellow, University College Cork)  
Email: [richen.lin@ucc.ie](mailto:richen.lin@ucc.ie); Tel: + 353 21 4901948
3. **Prof. Wei Wang** (Chair of Municipal Engineering, Hefei University of Technology)  
Email: [dwhit@126.com](mailto:dwhit@126.com)