

IEEE PES BOSTON PRESENTS A TECHNICAL MEETING ON:

Biological Batteries and Its Industrial Applications

Speaker: Dr Pei Zhang, President / Senior Scientist, Biochem LLC

Date: Tuesday, Sept 20th, 2022

Time: Presentation starts at **6:00pm**

Location: Online only via MS TEAMS; no in-person gathering
(RSVP & Join on PES Boston website below)

Abstract:

Dr. Zhang will first introduce her first patented technology, novel battery electricity generation method by using microorganisms or related compounds on or near cathode as catalyst. This technology is called biological battery. It has been applied in continuous electricity generation for small power applications, such as LED, as well as STEM education kit. Dr. Zhang will introduce her secondly patented technology, an industrial application of biological battery, a novel renewable industrial method to low energy consumption manufacturing metal oxide compounds, such as ZnO, MgO, Al₂O₃ etc. While generating renewable electricity and fixing CO₂ at the same time. The process relies on active functional biological material including functional microorganisms and the relevant biological compounds to catalyze the interesting reactions biologically. Unlike traditional combustion manufacture process, which is heavily rely on intensive natural gas or fossil fuel consumption and generates tremendous CO₂ during manufacture; Dr. Zhang's novel manufacture method generates electricity instead and fixes CO₂ at the same time. It can tremendously reduce the energy consumption as well as the operational cost and global warming gas emissions.

Biography:



Dr. Pei Zhang is the founder and president of BioEchem, LLC. A National Science Foundation awardee, Dr. Zhang earned a grant for her work towards the microbial catalyst on cathode electrode. She was also awarded the Edson Grant Award for her work on the Spatial Analytical Microbial Imaging (SAMI) tool. Worked as a Postdoctoral Research Associate at UMass Amherst Microbiology Department and Massachusetts Institute of Technology (MIT) before founding BioEchem. Dr. Zhang completed PhD in CEE focusing on microbiology and environmental technologies. Yet, she has kept built up and beyond limitations. So that she extended her inventions to other applicable fields and areas including global warming, satellite, novel power, AI etc.

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