

Abstract Submitted  
for the NEF21 Meeting of  
The American Physical Society

**Engineering of a Novel Plant Microbial Fuel Cell to Increase Electric Potential and Power Output Using *Thinopyrum intermedium*** WILSON HU, RICHARD KYUNG, RISE Research Group — Plant-microbial fuel cells (P-MFCs) utilize plant exudates and microbes to power a series of redox reactions to generate electricity. The purpose of this experiment was to determine the effect of the addition of urea, spent coffee grounds, and phenylacetic acid and the increase of soil porosity on electrical potential, power output, and current density of the novel P-MFC. The first phase consisted of the determination of optimal concentrations of each substance using sediment MFCs called MudWatts. The second phase consisted of the creation of the novel P-MFC using the online software CAD (Computer-Aided Design) Onshape and the integration of the concentrations and soil porosities into each system. Data were analyzed using IBM SPSS Version 25 using a t-test with a confidence interval of 95

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Date submitted: 14 Oct 2021

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