Bioelectricity generation in plant microbial fuel cells with *A.fistulosum*

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Abstract

The Plant Microbial Fuel Cell (P-MFC) is an innovative energy source which is clean, economically feasible and easily applicable. It has potential applications in power generation, cleaning and desalination of water and powering remote sensors. In this prospect, the present study involves the development and performance analysis of two plant microbial fuel cells, which primarily differ in the type of membrane used with PMFC-01 using an earthen pot and PMFC-02 using a proton exchange membrane. For the first time we have grown *A. fistulosum* of the genus *Allium* (commonly called Spring Onion) as the plant species integrated in the anodic chamber of the fuel cell with a bed of red soil for the performance study of P-MFC's. The performance in terms of open circuit voltage, power density and current density of PMFC-01 is comparative to that of PMFC-02. These results indicates that *A. fistulosum* can be effectively used for power generation with economical earthen pot membrane.