Researchers at the University of South Florida have developed a novel energy source that could help power instruments, devices or equipment in remote and often not too accessible locations, such as the various water bodies.

The availability of energy to power instruments for different purposes cannot be overemphasized. The choice of power for equipments often depends on prevailing environmental conditions and needs of the device. Power sources that can run for a long duration are highly desirable for equipments situated in remote locations such as the ocean bed and other peculiar weather conditions. Some devices, for example, in the military also need to be deployed for a longer time.

Microbial Fuel Cell (MFC) are very attractive for such applications because of cells longevity, their only drawback being low power output.

Our researchers have developed a new technology that provides an enhancement of MFC’s power output through the use of principles based on metabolic processes of certain species of microorganisms. The microbes are confined to the anode chamber while the cathode chamber contains one of many oxidizers that enhanced the power output. It has been shown that the oxidizers tested can be coupled with indigenous sediment bacteria or cultured microbial consortia.

This MFC invention lends itself to application as a long term, sustainable power source, and among others, is relevant in the chemical, medical device, research and military fields.

**ADVANTAGES:**
- Enhanced power profile
- Useful for remote application
- Provides sustainable source of energy
- Low risk to the environment
- Low cost of energy

**Sustainable Power Source**

**Cell Characteristics:**
Anode chamber contains Escherichia Coli
Cation exchange membrane separates the cell
Cathode chamber contains oxidizers

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