The Cleanest Energy: Microbial Fuel Cells

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The discovery of bacteria capable of converting the chemical energy of organic matter into electricity can lead us to a new form of green energy: Bioelectrical systems (BES). BES can help solve two of the most critical problems in today's society: the energy crisis and the availability of non-contaminated water. Putting these new forms of energy into practice is a major biotechnological challenge. This project aims to build and operate a microbial fuel cell to investigate how it is possible to improve and achieve an increased generation of electricity by varying the factors involved in its performance. The study shows an improvement of 12 times the power density obtained in my first cell. Finally, the study is projected towards the research for new solutions to achieve their technical-economic viability and a range of applications and projects are set out where bioelectrical systems are already a reality such as robots, waste water treatment, biosensors or biohydrogen production.

Awards Won: