Microbial electrochemistry opens new doors for sustainable environmental technology

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The interaction between microbes and electrodes has been studied for decades, leading to many interesting fundamental discoveries but scarce outlets for application. This is however changing with a number of recent breakthroughs in applied research in the field. This seminar offers an overview of the latest achievements and work in progress at the Advanced Water Management Centre in the field of microbial electrochemical technology. For example, the concept of a microbial fuel cell for the recovery of valuable nutrients from source-separated urine may supply crop growers with renewable fertilisers and will potentially revolutionise the way domestic wastewater is treated; a novel hydrogen-producing biocathode has led to the development of high rate systems for nitrate and sulfate removal from waste streams; the discovery of electrochemical activity of cyanobacteria can be exploited towards the early detection of toxic blooms.