

## Emerging Technologies & Innovation TAG

Hosted by Isle Utilities

IWA Brisbane

Session 2: Tuesday 11th of October 2016

Conference room 12

*Chairman: Ignaz Worm – Managing Director Europe, Isle Utilities*

*Jury:*

- *Mal Shepherd, Industry General Manager Utilities, John Holland*
- *Henrik Werchmeister, Market Manager VCS Denmark*
- *Glen T. Daigger, Distinguished Fellow, IWA*
- *Brian Krishna, Sales & Industry Marketing Director Xylem*
- *Sudhir Murthy, Innovations Chief for the District of Columbia Water and Sewer Authority*

### Agenda

**10:00 Introduction by Isle** **Isle Utilities**

**10:05 Kick off by Mal Shepherd** **John Holland**

**10:10 Hydro-dis** **Mark Carey**

The Hydro-dis® system is a unique water disinfection technique that uses the electrocatalytic break down of water to instantly destroy waterborne micro-organisms including micro-flora, while simultaneously converting chloride ions into chlorine leaving a measured residual disinfection in the treated water. This gives a secondary disinfection ensuring sustained microbiological control. The Hydro-dis® system replaces traditional disinfection techniques such as chemical dosing (Sodium Hypochlorite and Chlorine Gas), Ultra Violet irradiation and Ozonisation with a cost effective, environmentally friendly, modular and portable system. This refined and improved technology can now be applied to a wide variety of water use applications ranging from drinking water through to wastewater and any application in between. The Hydro-dis® technology removes the need to transport and store hazardous chemicals around the country. Specialist applications include the control of biofilms & algal blinding of bore columns, disinfection of water storage's and ornamental water bodies.

**10:35 Emefcy - MABR** **Ronen Shechter**

The systems developed by Emefcy produce electricity directly from the treatment of different types of wastewater. This conversion is made possible by use of microbial fuel cell (MFC) technology. Emefcy's Electrogenic Bioreactor (EBR) revolutionizes the economics of wastewater treatment by generating power instead of consuming power, utilizing electrogenic bacteria to produce electricity from wastewater while treating the wastewater. Rather than using energy to treat wastewater, Emefcy harvests renewable energy directly from the wastewater and feeds it to the grid. The fuel cell operates by catalytically separating component electrons and protons from the reactant fuel at the anode, and forcing the electrons to travel through a circuit, hence converting them to electrical power. Electricity can also be produced directly from degradation of organic matter in a microbial fuel cell (MFC). Microbial fuel cells may use wastewater as a fuel, or more generally a dilute solution of a variety of organic materials in water.

**11:00 Metaflush** **Tony Lake**

Virtually all toilet cisterns contain valves that directly control the flushing process, or are necessary to prime or control a siphonic system which empties the cistern and flushes the toilet. Valves can leak and therefore need constant monitoring for correct operation if water wastage is to be avoided. Recent studies indicate that 10% of toilet cisterns are leaking with the average rate being 400 litres per day. Improving water use efficiency and reducing water consumption have become primary objectives of the water supply industry, yet efforts to improve the performance of the toilet flushing process have been centered on refining existing flush valve design and reducing the total volume of water used when flushing, simpler and more robust options for achieving controlled flushing. MetaFLUSH® is a radical new design of a valveless toilet flushing system that is simple, robust, is logical to operate, has dual flush capability, is easy to maintain, and cannot leak.

**11:25 Closing** **Isle Utilities**