bridging the gaps
Sustainable Urban Spaces

Open Programme

UCL

The UCL Electrochemical Innovation Lab and Network

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What is Electrochemical Technology?

Electrochemical systems are central to some of the most promising technologies for applications relevant to sustainable cities, such as: distributed energy, combined heat and power (CHP), micro-generation, load balancing for power grids, low carbon manufacturing processes and solar power. In the automotive sector, the technologies responsible for electric vehicles are predominantly electrochemical (batteries and supercapacitors), and if it transpires that a hydrogen economy presents the most sustainable solution for our energy future, then, again, electrochemical systems will be at the heart of it (fuel cells and electrolysers).

Figure 1: Illustration of the range of applications for electrochemical technology

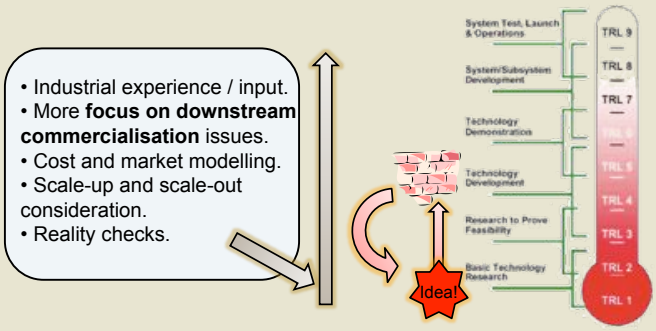

Figure 2: EIL concept for early engagement with industry to facilitate development and demonstration later in the innovation process

The UCL Electrochem Network

UCL has traditionally been strong in the area or electrochemical technology; there are currently over 20 academics working in this area or developing materials for electrochemical systems. The ElectrochemNet is a mechanism to raise awareness of the electrochemical research going on at UCL between research groups and externally as well as acting as a mechanism for encouraging collaboration and formulation of grant ideas and proposals. Contact d.brett@ucl.ac.uk to get involved.

A New Model for Open Innovation

In order to see our ideas through to working technologies, it is recognised that there is a need to engage with industry in technological developments that are still at an early stage, whilst needing an industrial perspective to develop those technologies into robust, engineered products. Our radical solution was to devise a mechanism with an industrial perspective at the early stage of development (TRL 1-3) in order to identify likely challenges at TRL 4-6. In this way, the Electrochemical Innovation Lab would perform world class scientific and engineering research and make an early identification of those opportunities with potential for commercialization. Once identified, those opportunities would be fast-tracked using the commercial networks now an integral part of the EIL. In adopting this approach, the 'traditional' model of reaching the end of an EPSRC project and then asking whether there is anything commercial resulting is replaced by a model that uses industrial expertise to ask those questions early on, with a view to accelerating the downstream commercialisation (Fig. 2).

Electrochemical Innovation Lab