SynthesisCell

Bulk Cell for mg Quantities

- **Fast electrochemical synthesis of reference materials, metabolites, degradants, etc.**
- **Complete electrolysis of electroactive species in solution**
- **Various large surface working electrodes**
- **Use for small-scale electrosynthesis studies (up to 80 mL)**

The SynthesisCell™ is designed for small-scale electrosynthesis of mg quantities of compounds that are difficult to synthesize by other methods, e.g., wet chemistry. Typical compounds that can be synthesized are metabolites, degradants, and almost any type of Redox products.

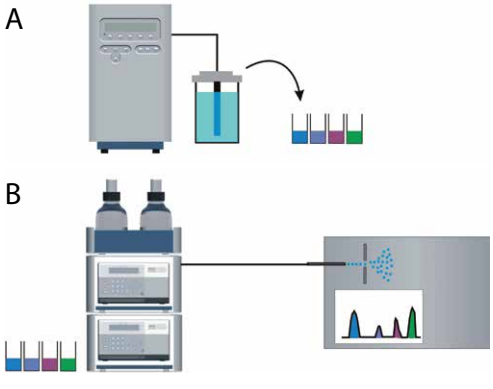
The large surface-area of the working electrode and active stirring of the bulk solution assures for compete electrolysis of any electroactive compound and the generation of Redox products in approximately 1 hour. Various large surface-area working electrodes such as carbon based, or Magic Diamond™ (Boron Doped Diamond, BDD) are available for increased selectivity and maximum yield.

The cell is controlled via the ROXY Potentiostat. The progress of the reaction and as well as the concentration of synthesis products can be monitored by taking aliquots over time and analyzing them by flow injection MS or LC/MS.

Schematics Synthesis and Reaction Monitoring

ROXY Potentiostat with SynthesisCell (A).
Manual collection of 500 µL aliquot samples taken in 10 min intervals over 1 hr.

LC/MS analysis of collected aliquots for reaction monitoring and synthesis optimization (B).



SynthesisCell™ – Synthesis of mg Quantities

ROXY with SynthesisCell

After optimization of the synthesis parameters such as the initial concentration, solvents, applied potential, synthesis time, pH and electrode material the experiment can be repeated under optimized conditions and the bulk solution can be purified by (semi)-preparative HPLC to isolate the compound(s) of interest.

ROXY Potentiostat with 80 mL SynthesisCell

Specifications SynthesisCell™ (Bulk Cell for mg Quantities)

Cell type	Three electrode synthesis cell, consisting of working electrode (WE), reference electrode (RE) and auxiliary electrode (AUX)
Cell volume	Up to 80 mL of sample solution in glass reaction vessel
	Optional: Water-jacketed reaction vessel (for cooling exothermic reactions)
Working electrodes (WE)	Tubular smooth Glassy Carbon (SGC), flat smooth Magic Diamond (MD), tubular mesh platinum (PT)
Reference electrode (RE)	Pd/H2 reference electrode, HyREF **Optional**: Ag/AgCl reference electrode
Auxiliary electrode (AUX)	Coiled platinum wire in glass isolation tube
Port plug	Access port for sample collection, dispensing of reagents, or venting of cell
Electric connections	Cell cables for use with ROXY Potentiostat

Part no	Description
206.0037	Complete SynthesisCell, consisting of 80 mL reaction vessel with Teflоncap, WE (tubular reticulated Glassy Carbon), RE (HyREF) and AUX electrodes, stir bar, electrode cables, etc., all parts included for immediate use with ROXY Potentiostat.
Optional	
206.0300	Water-jacketed reaction vessel
206.0305	Tubular smooth Glassy Carbon (SGC) working electrode
206.0306	Flat smooth Magic Diamond (MD) working electrode
206.0322	Tubular mesh Pt (PT) working electrode
206.0314	Ag/AgCl reference electrode
Spare Parts	
206.0304	Tubular reticulated Glassy Carbon (RGC) working electrode
206.0310	Auxiliary Pt electrode in glass tube
206.0900	Glass reaction vessel, 80 mL

Antec Scientific (USA)
info@AntecScientific.com
www.AntecScientific.com
T 888 572 0012

Antec Scientific (worldwide)
info@AntecScientific.com
www.AntecScientific.com
T +31 71 5813333

Antec® Scientific