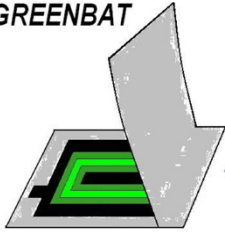


GREENBAT



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Imperial College  
London

SEVENTH FRAMEWORK  
PROGRAMME

## GREENBAT

## FP7: Contract No. 224582

**GREEN and SAFE thin film BAtteries for flexible cost efficient energy storage**

The aim of the project is to design a printable Li-Ion-Cell. In addition to the electrochemical aspects the production technology shall be covered leading to a pilot production



### Sheet-to-Sheet production

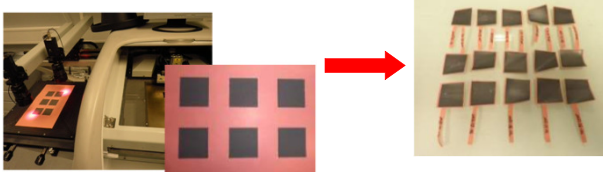


#### Screen printing of water based inks:

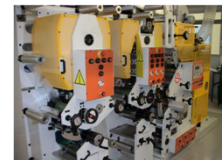
- patterned positive electrodes on Al



- patterned negative electrodes on Cu with printed PVdF based membrane

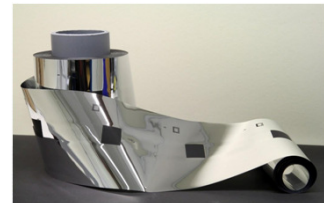


### Roll-to-Roll production

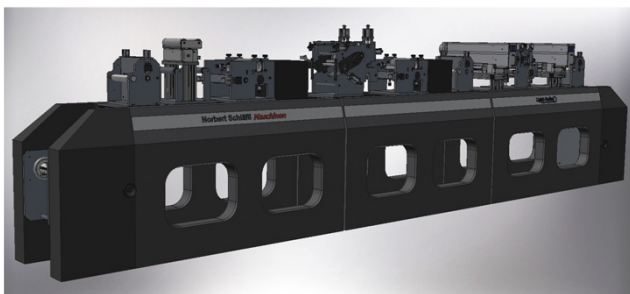


Rotary screen printing of negative and positive electrodes on Cu and Al substrates (ROKO pilot printing machine)

Calendering of printed electrodes (PICO pilot printing machine)

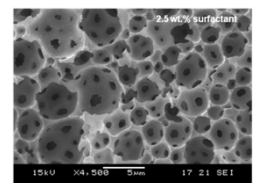
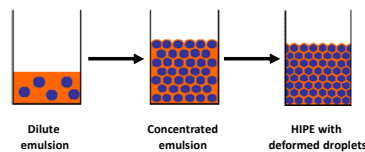


### Schläfli hybrid pilot printing machine for Roll-to-Roll production

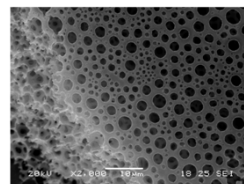


### New Separator PolyHIPE

In situ printable highly porous separator membranes from polymerisable emulsions (polyHIPEs)



PolyHIPE pore structure



PolyHIPE membrane



PolyHIPE deposited onto electrode