



SYSTEM INTEGRATION

Flexible printed energy storage (FlexEn)

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A suitable, printed rechargeable store of energy is required to complement energy harvesting and provide the power for the many large-area printed electronics devices that are being under development. We have previously developed a printable zinc based chemistry which is rechargeable (ACS Appl. Mater. Interfaces, 2014, 6 (23), pp 20752) and is a promising candidate for a printed energy store with high energy density. The objective of the FlexEn project was to formulate these newly developed electrodes for screen printing and demonstrate the viability of printing to produce rechargeable batteries which can be easily integrated with other printed devices.

All the electrode components used in zinc based batteries have been formulated into screen printable pastes, with optimised rheology and particle size, and printing tests conducted in a commercial printing press have demonstrated their electrochemical performance in a battery configuration, however there remains further work to be done to improve the cyclability.

The project has contributed to attracting investor interest in our battery capabilities, resulting in the formation of a start-up company Zinergy, that is developing printed, flexible batteries (www.zinergy-energy.com).

