

Battery performance in technicolor – photonic material circuitry and 3D printed batteries for probing electrochemical energy storage mechanisms and cell performance

Taking inspiration from material structures in nature that reflect certain colours such as butterfly wings, beetle husks and peacock feathers, this project will impose this type of ordered structure on new battery materials so that they can be monitored by carefully mapping out any changes in reflected colour to link it to specific details about how the material stores charge and behaves in a battery.

This will allow us to screen new energy storage materials more quickly and help define the different conditions that are optimum for more sustainable materials in rechargeable batteries and other energy storage devices – whether it's faster charging, longer lifetime, quick power delivery or higher energy.

Developing the best rechargeable batteries with sustainable methods represents a major technological challenge for this new century. Batteries will be central to how our society shifts away from fossil fuel powered interaction, mobility and living.

Quick Facts

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Researchers: Colm O'Dwyer

Contact Us

Email: c.odwyer@ucc.ie

