**Catmat team develop outreach experiment boxes for the virtual CoCoMAD20 festival**

The current COVID-19 pandemic has introduced challenges to maintain our battery education engagement program. To this end we have been actively developing ways to move our activities to support virtual events, so as to continue our goal of inspiring the next generation of battery researchers, as well as to inform non-scientific audiences about battery technology.

In July 2020, we developed resources for the CoCoMAD20 festival. The event itself has been taking place annually in the local community park in Cotteridge not far from the University of Birmingham, with the introduction of the science field in recent years. To maintain our commitment to this local event, science experimental boxes for low income backgrounds were developed, consisting of 100 packs for secondary schools students, in addition, to producing online resources to be aired live on the festival day of Saturday July 4th 2020. The online resources of the demonstrations and experiment activities were made live, not only to support students who received boxes, but to also allow other families to participate too.

Within the collection of experiments, two battery themed practicals were developed to engage with the secondary school students with an introduction to rechargeable Li-ion batteries using 'Battery Jenga'[1], followed by a recycling battery experiment produced by Dr Gavin Harper (ReLiB project). The 'Battery Jenga' practical provided students with a blank jenga set, enabling it to be decorated with the provided electrode stickers, in addition to a work booklet to work through the key battery operation characteristics.

The work booklet and supporting video can be found here: https://www.cocomad.online/scienceactivities/sciencebox8, whilst further guides and supporting videos can be found on the Slater Group website and (https://www.prslaterchem.com/battery-jenga) and on the Group's YouTube channel, respectively.

To coincide with the delivery of the science boxes, Elizabeth Driscoll, Dr Gavin Harper and Prof. Peter Slater joined the 'Ask the Scientist' session on zoom, to run and support the demonstrations.

The science boxes were co-funded by a Royal Society of Chemistry outreach grant and The Faraday Institution's CATMAT and ReLiB projects.


*Figure 1: Photo of aspects of the battery experiment, with battery jenga and pencils supplied by the Faraday Institution.*

*Figure 2: Photo of students taking part in the day's activities.*

(1) Driscoll, E. H.; Hayward, E. C.; Patchett, R.; Anderson, P. A.; Slater, P. R. The Building Blocks of Battery Technology: Using Modified Tower Block Game Sets to Explain and Aid the Understanding of Rechargeable Li-Ion Batteries. *J. Chem. Educ.* **2020**. https://doi.org/10.1021/acs.jchemed.0c00282.