

THE LIVING BATTERY

AN IMMERSE PROJECT FOR NANOBIONYC



Led by Dr. Stephen O'Brien, Professor and Chair of Chemistry at CCNY, this guided mini-project will explore the properties of a battery, the challenges associated with its production, and potential ways to develop new technologies for more sustainable models.

JUNE 15-16

**Room 4102
The Science Center at GC**

Scan or click
to register!



The Living Battery
An Immerse Project for NanoBioNYC, June 15-16.

A guided project in understanding bioinspired approaches to materials science problems in energy storage

Batteries are an essential part of modern living because so many dependable electronic devices rely on them as a source of power. They have also allowed for many new inventions, in transportation, in communications and in leisure. Like anything manufactured at a mass scale across the globe, the battery manufacturing process presents environmental problems. In the long term, scientists and engineers can help present new ideas, and develop new technologies for more environmentally sustainable batteries.

This is a guided mini-project to help you understand what a battery is, what the problems associated with batteries are, and how we might, in the future, come up with solutions to address these problems. The approach examined here is “bioinspired”. Active research and “your input” will be required at every juncture. We will ask a series of questions, Relying on you to answer them. The use of search engines/ internet research, your own experience, logic and skepticism are all encouraged.

First we ask about batteries – what is a battery, what are the applications, what types of batteries there are and what the environmental or geopolitical concerns are. We will then speak to how these concerns might be resolved. After we have taken a “market” look at batteries we will ask the harder technical and scientific question about how a battery works. We will ask generally how a battery works and examine one specific and important technology, the lithium-ion battery, LIB. We will then look at bioinspired approaches as a means to come up with a new battery concept, and examine how a bioinspired approach might be taken, using the principles of biology and analogy with living things, to improve or ultimately even perhaps replace the LIB.

WORKSHOP PROGRAM

June 15:

9:00 AM Introduction to the project

9:30 AM Group organization

10:00 AM Collective and Group based work through of project materials and background.

12:30 PM Lunch

2:00 PM Bioinspired battery solution projects, research and materials selection and design

5:00 PM Wrap-up

6:00 – 8:00 PM Working dinner

June 16:

10:00 AM - 12.30 PM – Group presentations and discussion

12:30 PM Lunch