2020 Battery New Materials Project

What is a sustainable battery?
Sustainable batteries with ultra-high performance and smart functionalities will play a critical role in powering Europe's transition from fossil fuels to renewable energies. Conventional lithium-ion batteries utilise a liquid electrolyte.

How can data be used for battery materials design & prediction?
The collected data can be used as a representative overview of battery material information that is contained within text of scientific papers. Public availability of these data will also enable battery materials design and prediction via data-science methods.

What is a solid-state lithium-ion battery?
Solid-state lithium-ion batteries,or lithium-metal solid-state batteries,use a solid electrolyte and lithium metal as the battery anode. These are garnering increasing attention for their promise of low cost,high performance and enhanced safety,yet they are far from achieving commercial viability.

Are carbonophosphates a cathode material for Li ion batteries?
Chen,H. et al. Carbonophosphates: a new family of cathode materials for li-ion batteries identified computationally. Chem. Mater. 24,2009-2016 (2012). Jain,A. et al. A computational investigation of Li9M3 (P2O7)3 (PO4) 2 (M = V,Mo) as cathodes for Li ion batteries. J. Electrochem. Soc. 159,A622-A633 (2012).

What is big-map - battery interface genome - materials acceleration platform?
Battery development in the past has followed a trial-and-error approach that has been successful but is also expensive and time consuming. The BIG-MAP (Battery Interface Genome - Materials Acceleration Platform) project will accelerate the speed of battery developmentby fundamentally changing the way we invent batteries.

Can a zinc-air battery dataset be used in modelling?
Lao-atiman et al. have created a zinc-air battery dataset for use in modelling23. The methods used to create these databases were faced with limitations; Severson et al. encountered limited sample diversity; Sendek et al. were confined to the use of empirical diversity. Another approach is to create a database from scientific literature.

joint research project "GrEEn--Green Electrochemical Energy Storage," a collaboration of several universities and research institutes developing a new battery concept based on sustainable materials and recycling approaches. Johannes Betz conducts ... impart certain battery materials with a strategic value.[11] Out of all cell constituents ...

The EU project BIG-MAP (Battery Interface Genome - Materials Acceleration Platform), aims at accelerating

the speed of battery development by changing the way of ...

The SOLiDIFY project proposes a unique manufacturing process and solid-electrolyte material to fabricate Lithium-metal solid-state batteries - known as Gen. 4b on the EU battery roadmap. The concept is based on a solid nanocomposite electrolyte or nano-SCE. It is ...

This paper shows how to overcome this problem, by using ChemDataExtractor 27 to automatically extract data from a huge collection of battery research papers, and thence ...

The Materials Project database established by MIT provides structural information and properties of more than 130,000 inorganic compounds (e.g., lithium-ion battery materials), which utilizes the huge database collected by density functional theory to predict the actual properties of simulated material models.

Siviour Battery Anode Material (BAM) Project Study (June 2020) delivered NPV of US$499 million based on Stage 1 production of 28,000tpa of PSG. Non-binding offtake agreements with ...

This part of the research initiative focusses on research and development of high-energy and high-power materials that lead lithium-ion batteries to the next generation.

1. 50,000 MT/year of new energy lithium cathode material project. On January 9, 2021, Fulin PM agreed that the subsidiary Jiangxi Shenghua New Material to build the 50,000 MT/year new energy lithium cathode materials project, with an estimated total investment of ...

Development of the Materials Project is supported by the U.S. Department of Energy (DOE) through its Office of Science, via the Basic Energy Sciences (BES) and Advanced Scientific Computing Research (ASCR) programs, and through its Office of Energy Efficiency and Renewable Energy (EERE), via the Battery Materials Research (BMR, formerly BATT) program.

Development and application of battery materials database Wu Si-Yuan Wang Yu-Qi Xiao Rui-Juan Chen Li-Quan ???? Citation: Acta Physica Sinica, 69, 226104 (2020) DOI: 10.7498/aps.69.20201542 ... Development of new lithium battery materials by material genome initiative ... ???????, ?????Materials Project,

HEALING BAT project aims to develop and implement self-healing concepts and materials in the critical battery components used in conventional Li-S batteries and extrapolate the ideas to develop a new class of self-healing structural batteries based on Li-S by investigating at the cell & component level.

Web: https://systemy-medyczne.pl