Battery interface classification

What is battery interface ontology (battinfo)?
Welcome to the Battery Interface Ontology (BattINFO),a semantic resourcewith essential terms and relationships to describe battery cells,materials,methods,and data. Here's a simple example:

What is a battery system?
Battery system is an "Energy storage devicethat includes cells or cell assemblies or battery pack (s) as well as electrical circuits and electronics (e.g.,BCU,contactors)" [20]. Chassis/body in white (BiW) is the outer shell of the battery electric vehicle (BEV) [21](p. 3).

What is the Delimitation of (battery) system architectures?
In this publication,the delimitation of (battery) system architectures is methodologically based on the number and combination of main system levels. 2.1. System Levels Up to now,a precise differentiation and overview between the individual (battery) system architectures has not been made on a scientific basis.

What is a battery ontology?
BattINFO provides an analogous subclass ChemicalPhenomenon to describe a chemical process and ElectrochemicalPhenomenon to describe a chemical phenomenon that is accompanies by the flow of electric current. A battery ontology must include some description of chemical and electrochemical reactions.

How are battery modules connected in series?
To achieve the required battery pack voltage,several battery modules are connected in series to a battery string[7](pp. 31-32). To increase capacity,serial strings of battery modules can be connected in parallel to form a larger battery pack [8](p. 300).

What is a battery module?
" Battery module means a set of battery cellsthat are connected together or encapsulated within an outer casing to protect the cells against external impact,and which is meant to be used either stand-alone or in combination with other modules" [16](p. 64).

The interface between the electrode and the electrolyte, the current collector and the electrode, the active material and the additives - all affects the performance of the battery. Even slight modifications in the electrode structure, the solid-electrolyte interphase (SEI) or the processing conditions can lead to a drastic change in the battery performance.

The Battery Interface Ontology (BattINFO) is an ontology of batteries and their interfaces developed for the Battery Interface Genome - Materials Acceleration Platform project (BIG ...

Such a brief overview underlines one general pitfall of the field: the solid interphase forming at the

electrode/electrolyte interface is the most tangible of all the events occurring at battery ...

granular insights into the formation process and characteristics of battery interfaces at the molecular level and harnessing AI to extract patterns from voluminous data sets. It showcases the utility of such techniques in electrolyte design and battery life prediction and introduces a novel perspective on battery interface mechanisms.

The Battery Interface working group continues to follow and analyze the feedback of its members and whole ecosystem. The information will be used to develop the standard further as needed. Technical Q& As - Battery Interface v1.00 Q. What does BIF v1.00 specify? A. The BIF v1.00 specification defines a single-wire communication interface

MIPI Battery Interface (BIF) is the first comprehensive battery communication interface standard for mobile devices. BIF is a robust, scalable and cost-effective single-wire communication interface between the mobile terminal and smart or low cost batteries. BIF improves mobile terminal safety and performance by providing

The Battery Interface Ontology (BattINFO) is defined as a domain ontology of the Elementary Multiperspective Material Ontology (EMMO). The EMMO is a multidisciplinary top- and middle ...

2) Consider a thyristor-based battery interface with a class D DC-DC converter as shown below. The grid voltage is 220 VLL and 60 Hz. The rated battery voltage is 200 V and the rated charging and discharging current (Id) has an average ...

Battery Interface Genome - Materials Acceleration Platform 1 . D7.2 - Initial Version of the Battery Ontology . VERSION . VERSION DATE 1.0.0 26 February, 2021 . ... Likewise, an ElectrochemicalReaction class is created and categorized as an ElectrochemicalPhenomenon with the definition, "Any process either caused or accompanied by

Question: Consider a thyristor-based battery interface with a class "D" DC-DC Converter as shown below. The grid voltage is 220 V and 60 Hz. The rated battery voltage is 200 V and the rated charging and discharging current (Id) ...

Jung, W, Chon, Y, Kim, D & Cha, H 2014, Powerlet: An active battery interface for smartphones. in UbiComp 2014 - Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing. UbiComp 2014 - Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing, Association for Computing Machinery, ...

Web: https://www.agro-heger.eu