1. Record Nr. UNINA9910557610903321

Autore	Birke Kai Peter
Titolo	Battery Systems and Energy Storage beyond 2020
Pubbl/distr/stampa	Basel, : MDPI - Multidisciplinary Digital Publishing Institute, 2022
Descrizione fisica	1 online resource (338 p.)
Soggetti	Research & information: general
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	Currently, the transition from using the combustion engine to electrified vehicles is a matter of time and drives the demand for compact, high-energy-density rechargeable lithium ion batteries as well as for large stationary batteries to buffer solar and wind energy. The future challenges, e.g., the decarbonization of the CO2-intensive transportation sector, will push the need for such batteries even more. The cost of lithium ion batteries has become competitive in the last few years, and lithium ion batteries are expected to dominate the battery market in the next decade. However, despite remarkable progress, there is still a strong need for improvements in the performance of lithium ion batteries. Further improvements are not only expected in the field of electrochemistry but can also be readily achieved by improved manufacturing methods, diagnostic algorithms, lifetime prediction methods, the implementation of artificial intelligence, and digital twins. Therefore, this Special Issue addresses the progress in battery and energy storage development by covering areas that have been less focused on, such as digitalization, advanced cell production, modeling, and prediction aspects in concordance with progress in new materials and pack design solutions.