1. Record Nr.   UNINA9911007155703321

   Autore   Wang Shunli

   Titolo   AI for Status Monitoring of Utility Scale Batteries

   Pubbl/distr/stampa   Stevenage : , : Institution of Engineering & Technology, , 2023
                        ©2022

   ISBN   1-83724-508-8
                        1-5231-5354-7
                        1-83953-739-6

   Edizione   [1st ed.]

   Descrizione fisica   1 online resource (385 pages)

   Collana   Energy Engineering

   Altri autori (Persone)   LiuKailong
                            WangYujie
                            StroeDaniel-I (Daniel Ioan)
                            FernandezCarlos (Lecturer in Analytical Chemistry)
                            GuerreroJosep M

   Disciplina   006.31

   Soggetti   Machine learning

   Lingua di pubblicazione   Inglese

   Formato   Materiale a stampa

   Livello bibliografico   Monografia

   Nota di contenuto   Cover -- Halftitle Page -- Series Page -- Title Page -- Copyright --
                        Contents -- About the Authors -- Foreword -- Preface -- List of
                        contributors -- 1   Introduction --   1.1   Motivation for
                        utility-scale battery deployment --   1.2   Definition of AI in the
                        context of battery management --   1.3   Advantages of using AI for
                        battery management -- 2   Utility--scale lithium--ion battery system
                        characteristics --   2.1   Overview of lithium-ion batteries --
                            2.1.1   Battery working principle --   2.1.2   Principles
                        of status monitoring of utility-scale batteries --   2.2   Lithium-ion
                        batteries --   2.2.1   Lithium iron phosphate batteries --
                            2.2.2   Lithium cobaltate oxide batteries --   2.2.3
                            Lithium manganese oxide batteries --   2.3   Large
                        capacity lithium-ion batteries --   2.3.1   Application areas of
                        utility-scale batteries --   2.3.2   Characteristics of utility-scale
                        battery systems --   2.3.3   Operational challenges of utility-scale
                        battery systems -- 3   AI--based equivalent modeling and parameter
                        identification --   3.1   Overview of battery equivalent circuit

modeling -- 3.2 Modeling types and concepts -- 3.3 Equivalent circuit modeling methods

---

Sommario/riassunto   Utility-scale Li-ion batteries are poised to play key roles for the clean energy system, but their failure has severe effects. AI can help with their monitoring and management. This work covers machine learning, neural networks, and deep learning, for battery modeling.