1. Record Nr. UNINA9910674025603321

Autore	Narducci Riccardo
Titolo	Ionic Conductive Polymers for Electrochemical Devices / / Riccardo Narducci
Pubbl/distr/stampa	Basel, Switzerland : , : MDPI - Multidisciplinary Digital Publishing Institute, , 2022
Descrizione fisica	1 online resource (176 pages)
Disciplina	671.734
Soggetti	Electrochemical metallizing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	Increasing levels of pollution and climate change are pushing the scientific community towards more sustainable solutions for the conversion and storage of energy. This book is dedicated to ionic conductive polymers, fundamental components of devices such as fuel cells (FCs), redox flow batteries (RFBs), and electrolyzers that can help to significantly decrease the amount of greenhouse gases emission. The book focuses on commercial polymers such as Nafion, a benchmark for proton-conducting membranes, acid doped polybenzimidazole (PBI), or blended membranes containing hyperbranched poly(arylene ether sulfone (PAES))/Linear poly(phenylene oxide) (PPO) as anion exchange membranes (AEMs). Promising and low-cost sulfonated aromatic polymers (SAP), or solid polymer blend electrolytes (SPBEs) based on natural chitosan (CS) and methylcellulose (MC). This book is also reports some strategies to enhance mechanical stability, such as cross-linking (XL), or several techniques, including classical casting methods or electrospinning (ES). I am confident that this book will serve to further stimulate advances in this research area, in both the sectors of membranes and catalysts, the first is essential for the long-term functioning of the system, and the second for a drastic reduction in costs, especially in fuel cells.