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for bioelectrocatalytic conversion of greenhouse gases into valuable products.

Sommario/riassunto

This book is the first in a two-volume set devoted to bioelectrochemical systems (BESs) and the opportunities that they may offer in providing a green solution to growing energy demands worldwide. In this first volume, established research professionals explain the underlying principles and processes of BESs, providing a thorough introduction to these systems before proceeding to address the roles of cathode catalysts and biocatalysts, biofilms, heterotrophic denitrification, and nanotechnology approaches. This volume forms a sound foundation for understanding the potential industrial applications of this technology, which include in particular the generation of high-value chemicals and energy using organic wastes. These applications are the focus of the second volume, where readers will find up-to-date information on microbial fuel cells and the use of microbial biofilm- and algae-based bioelectrochemical systems for bioremediation and co-generation of valuable chemicals. The book isdesigned for a broad audience, including undergraduates, postgraduates, energy researchers/scientists, policymakers, and anyone else interested in the latest developments in this field.