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Sommario/riassunto	This book provides a comprehensive review of the latest modelling developments in flow batteries, as well as some new results and

insights. Flow batteries have long been considered the most flexible answer to grid scale energy storage, and modelling is a key component in their development. Recent modelling has moved beyond macroscopic methods, towards mesoscopic and smaller scales to select materials and design components. This is important for both fundamental understanding and the design of new electrode, catalyst and electrolyte materials. There has also been a recent explosion in interest in machine learning for electrochemical energy technologies. The scope of the book includes these latest developments and is focused on advanced techniques, rather than traditional modelling paradigms. The aim of this book is to introduce these concepts and methods to flow battery researcher, but the book would have a much broader appeal since these methods also employed in other battery and fuel cell systems and far beyond. The methods will be described in detail (necessary fundamental material in Appendices). The book appeals to graduate students and researchers in academia/industry working in electrochemical systems, or those working in computational chemistry/machine learning wishing to seek new application areas. .