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Sommario/riassunto	Device and Materials Modeling in PEM Fuel Cells is a specialized text that compiles the mathematical details and results of both device and materials modeling in a single volume. Proton exchange membrane (PEM) fuel cells will likely have an impact on our way of life similar to the integrated circuit. The potential applications range from the micron scale to large scale industrial production. Successful integration of PEM fuel cells into the mass market will require new materials and a deeper understanding of the balance required to maintain various operational states. This book contains articles from scientists who contribute to fuel cell models from both the materials and device perspectives. Topics such as catalyst layer performance and operation, reactor dynamics, macroscopic transport, and analytical models are covered under device modeling. Materials modeling include subjects relating to the membrane and the catalyst such as proton conduction, atomistic structural modeling, quantum molecular dynamics, and molecular-level modeling of the anode and cathode electrocatalysts. Device and Materials Modeling in PEM Fuel Cells is ideal for professionals and researchers working with fuel cells, as well as electrical engineers and graduate students performing computational materials research,

applied mathematics, and molecular physics.