

Contents

1	Neutron Applications in Materials for Energy: An Overview	1
	Vanessa K. Peterson and Gordon J. Kearley	

Part I Energy Generation

2	Catalysis	17
	Hervé Jobic	
3	Carbon Dioxide Separation, Capture, and Storage in Porous Materials	33
	Anita Das, Deanna M. D'Alessandro and Vanessa K. Peterson	
4	Materials for the Nuclear Energy Sector	61
	Michael Law, David G. Carr and Sven C. Vogel	
5	Chalcopyrite Thin-Film Solar-Cell Devices.	83
	Susan Schorr, Christiane Stephan and Christian A. Kaufmann	
6	Organic Solar Cells.	109
	Mohamed Zbiri, Lucas A. Haverkate, Gordon J. Kearley, Mark R. Johnson and Fokko M. Mulder	

Part II Energy Storage

7	Lithium-Ion Batteries	139
	Neeraj Sharma and Marnix Wagemaker	
8	Hydrogen Storage Materials	205
	Juergen Eckert and Wiebke Lohstroh	

Part III Energy Use

9	Neutron Scattering of Proton-Conducting Ceramics	243
	Maths Karlsson	
10	Neutron Techniques as a Probe of Structure, Dynamics, and Transport in Polyelectrolyte Membranes	273
	Kirt A. Page, Joseph A. Dura, Sangcheol Kim, Brandon W. Rowe and Antonio Faraone	
	Glossary of Abbreviations	303

Neutron Applications in Materials for Energy

Kearley, G.J.; Peterson, V.K. (Eds.)

2015, X, 306 p. 166 illus., 81 illus. in color., Hardcover

ISBN: 978-3-319-06655-4