

Springer

1.  
Auflage1st ed. 2017, XIX, 600 p.  
249 illus., 196 illus. in color.**Gedrucktes Buch**

Hardcover

**Gedrucktes Buch**

Hardcover

ISBN 978-3-319-42389-0

£ 129,99 | CHF 177,00 | 149,99 € |  
164,99 € (A) | 160,49 € (D)

lieferbar

**Rabattgruppe**

Science (SC)

**Produktkategorie**

Monographie

**Reihe**

Topics in Applied Physics

**Other renditions**

Softcover

ISBN 978-3-319-82568-7

**Chemie : Elektrochemie**

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# Dynamics of Glassy, Crystalline and Liquid Ionic Conductors

**Experiments, Theories, Simulations**

- Co-authored by three experts in the field
- Covers the fundamentals of ionic conductors and their applications in various fields
- Makes possible for newcomers to grasp the past history, current status and frontier of the field
- Uses as material for teaching graduate or undergraduate course in academic institutions

This book discusses the physics of the dynamics of ions in various ionically conducting materials, and applications including electrical energy generation and storage. The experimental techniques for measurements and characterization, molecular dynamics simulations, the theories of ion dynamics, and applications are all addressed by the authors, who are experts in their fields. The experimental techniques of measurement and characterization of dynamics of ions in glassy, crystalline, and liquid ionic conductors are introduced with the dual purpose of introducing the reader to the experimental activities of the field, and preparing the reader to understand the physical quantities derived from experiments. These experimental techniques include calorimetry, conductivity relaxation, nuclear magnetic resonance, light scattering, neutron scattering, and others. Methods of molecular dynamics simulations are introduced to teach the reader to utilize the technique for practical applications to specific problems. The results elucidate the dynamics of ions on some issues that are not accessible by experiments. The properties of ion dynamics in glassy, crystalline and liquid ionic conductors brought forth by experiments and simulations are shown to be universal, i.e. independent of physical and chemical structure of the ionic conductor as long as ion-ion interaction is the dominant factor.

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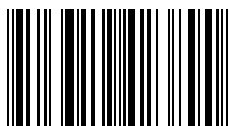
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