# Fast Ion Transport in Solids

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# **Fast Ion Transport In Solids**

Minko Balkanski, Roger J. Elliott

### **Fast Ion Transport In Solids:**

Fast Ion Transport in Solids B. Scrosati, A. Magistris, C.M. Mari, G. Mariotto, 2012-12-06 The main motivation for the organization of the Advanced Research Workshop in Belgirate was the promotion of discussions on the most recent issues and the future perspectives in the field of Solid State lonics The location was chosen on purpose since Belgirate was the place were twenty years ago also then under the sponsorship of NATO the very first international meeting on this important and interdisciplinary field took place That meeting was named Fast Ion Transport in Solids and gathered virtually everybody at that time having been active in any aspect of motion of ions in solids The original Belgirate Meeting made for the first time visible the technological potential related to the phenomenon of the fast ionic transport in solids and accordingly the field was given the name Solid State lonics This field is now expanded to cover a wide range of technologies which includes chemical sensors for environmental and process control electrochromic windows mirrors and displays fuel cells high performance rechargeable batteries for stationary applications and electrotraction chemotronics semiconductor ionics water electrolysis cells for hydrogen economy and other applications The main idea for holding an anniversary meeting was that of discussing the most recent issues and the future perspectives of Solid State lonics just twenty years after it has started at the same location on the lake Maggiore in North Italy Fast Ion Transport in Solids P. Vashishta, J. N. Mundy, G. K. Fast Ion Transport in Solids J. E. Ruiz-Díaz, 1985 Shenov, 1979 **Fast Ion Transport in Solids** W. van Gool,1973

Fast Ion Transport in Solids J. E. Ruiz-Díaz, 1985 **Fast ion transport in solids** W. van Gool, 1973 Processes in Solid State Ionics M. Kleitz, J. Dupuy, 2012-12-06 The idea of an Advanced Study Institute on the theme of electrode reactions on solid electrolytes was put forward by Dr J Dupuy at the meeting of the International Society for Electrochemistry in Eindhoven in September 1973 Through Dr Dupuy the Solid State Physics Department of Lyons University offered the Institute possibilities of accommodation in Corsica that seemed particularly tempting The subject matter appealed to a number of people for a variety of reasons A great deal of development work on applications comes up against interface phenomena which appreciably reduce anticipated performances Numerous potential applications of specific electrodes or gauges appear that would benefit from a more systematic approach From a more fundamental viewpoint interface phenomena on ionic crystals are the subject of indepen dent investigations in quite distinct research fields such as solid state physics and electrochemistry. The choice of an interpretation from among the different models available is very often not a straightforward matter and an attempt to promote a synthesis by bringing together the proponents of the various schools could not fail to be rewarding An Investigation of Fast Ion Transport in Solids Using Conductivity and N.M.R. (Fast Ion Transport in Solids). Alan V. Chadwick, David S. Hope, George Jaroskiewicz, John H. Strange, KENT UNIV CANTERBURY (England), 1980 The lanthanide fluorides and mixtures of these fluorides exhibit fast ion conduction A study has been made of ionic transport in single crystals of LaF3 systems using electrical conductivity and N M R techniques

Analysing the conductivity results in terms of Schottky disorder yield values of the defect formation and migration enthalpies as 2 12 and 0 28 eV respectively At low temperatures the study of oriented crystals showed the conductivity to the c axis was twice that 1 to the c axis The N M R relaxation time T1 T10 and T2 exhibited a complex behaviour A model was developed to interpret these results on the basis of non equivalent F sites in the lattice Single crystals of La1 x Srx F3 x are good F ion conductors better than would have been expected from previous publications A full discussion of the results has been presented along with suggestions for future work Author **Fast Ion Transport in Solids** ,1973 Fast Ion Transport in Solids W. van Gool,1973 **Ionic and Mixed Conducting Ceramics 6** Mogens Mogensen, 2008-12 The papers included in this issue of ECS Transactions were originally presented in the symposium Ionic and Mixed Conducting Ceramics 6 held during the 213th meeting of The Electrochemical Society in Phoenix Arizona from May 18 to 23 2008 Fast Ion **Fast Ion Transport in Solids** John B. Bates, Gregory C. Farrington, 1981 **Transport in Solids** ,1972 Fast ion transport in solids: Electrodes and electrolytes: proceedings of an International Conference, Lake Geneva, Wisconsin, USA, May 21-25, 1979 P. Vashishta, J. N. Mundy, 1979 **Fast Ion Transport in Solids** ,1979 Abstracts for the 47 invited papers and 111 contributed papers presented in poster sessions are given in this publication along with the program schedule Papers deal with both basic research and applications the most important of the latter being electric batteries RWR

Atomic Diffusion in Disordered Materials Minko Balkanski, Roger J. Elliott, 1998 This book describes a body of work whose ultimate goal is to optimize the design of microbatteries It focuses on the fundamental properties of the structure and atomic diffusion in glassy materials which optimize the properties of the electrolyte Experimental results and their phenomenological description of lithium borate glasses are extensively covered Other chapters discuss the effects of barriers between the electrodes and the electrolyte and the book culminates with a description of actual progress in making applications of these materials to batteries sensors and other devices **FAST ION TRANSPORT IN SOLIDS**:

# ELECTRODES AND ELECTROLYTES; PROCEEDINGS OF THE INTERNAT. CONFERENCE ON FAST ION TRANSPORT IN SOLIDS, ELECTRODES AND ELECTROLYTES, LAKE GENEVA, WISC., U.S.A., MAY 21-25, 1979

,1979 Solid State Electrochemistry Peter G. Bruce,1997-06-12 This book describes for the first time in a modern text the fundamental principles on which solid state electrochemistry is based In this sense it is in contrast to other books in the field which concentrate on a description of materials Topics include solid ceramic electrolytes glasses polymer electrolytes intercalation electrodes interfaces and applications. The different nature of ionic conductivity in ceramic glassy and polymer electrolytes is described as are the thermodynamics and kinetics of intercalation reactions. The interface between solid electrolytes and electrodes is discussed and contrasted with the more conventional liquid state electrochemistry. The text provides an essential foundation of understanding for postgraduates or others entering the field for the first time and will also be of value in advanced undergraduate courses.

Fast Ion Transport in Solids Willem van Gool,1973

Fast Ion

 $Transport\ in\ Solids, Solid\ State\ Batteries\ and\ Devices\ , 1973$ 

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### **Fast Ion Transport In Solids Introduction**

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