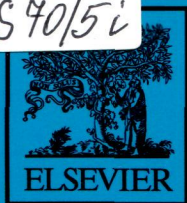


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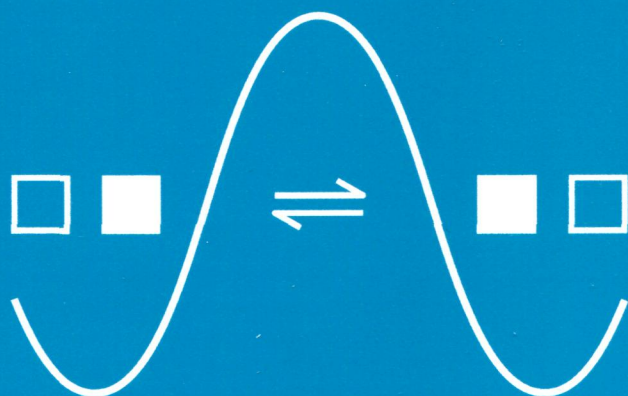
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Solid State Ionics

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Editorial Board

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Preparation of Li₂S–GeS₂ solid electrolyte thin films using pulsed laser deposition

Original Research Article

Pages 1-4

Yusuke Ito, Atsushi Sakuda, Takamasa Ohtomo, Akitoshi Hayashi, Masahiro Tatsumisago

Highlights

► Li₂S–GeS₂ solid electrolyte (SE) thin films were synthesized by PLD. ► Amorphous Li₂S–GeS₂ thin films showed high ionic conductivity of 10⁻⁴ S cm⁻¹. ► LiCoO₂ particles coated with SE thin films were prepared by PLD. ► All-solid-state cells with SE-coated LiCoO₂ particles operated at 25 °C.

Decoupling the effects of pressure and current in spark plasma sintering: Synthesis of CU_{0.9}V₂O₅

Original Research Article

Pages 5-10

Gauthier Jouan, Mickaël Dollé, Jean-Philippe Monchoux

Highlights

► Synthesis of Cu_{0.9}V₂O₅ by SPS is found to be much faster than by sealed quartz tubes. ► Role of current (I) and pressure (P) is studied by decoupling these parameters. ► No influence of I and P on synthesis kinetics is detected. ► Synthesis kinetics is dependent on contact between reacting powder particles.

Improvement of the sealing performance of sodium anode battery by an in-situ gradient modification method

Original Research Article

Pages 11-15

Gaoxiao Zhang, Zhaoyin Wen, Xiangwei Wu, Jingchao Zhang

Highlights

► Na-β"-Al₂O₃ film was prepared on α-Al₂O₃ surface by a gas-solid reaction. ► Gradient component distribution of the film was achieved by the in-situ process. ► The symmetry of the parts of the sodium battery to be sealed was realized. ► Reliability of the seal was substantially improved by the symmetrical design.

Electrical conductivity of Gd-doped ceria film fabricated by aerosol deposition method

Original Research Article

Pages 16-21

Hongyeul Bae, Jongjin Choi, Gyeong Man Choi

Highlights

► GDC films were deposited on various substrates using aerosol deposition (AD) method. ► The conductivity of GDC film on sapphire was comparable to that of a bulk sample. ► The P_{O_2} dependence was similar to that of GDC at higher temperature. ► The film fabricated by AD method may be used as an electrolyte for low temperature.

New structural lithium battery electrolytes using thiol-ene chemistry

Original Research Article

Pages 22-29

Markus Willgert, Maria H. Kjell, Göran Lindbergh, Mats Johansson

Highlights

► Solid PEG-methacrylate lithium ion electrolytes containing thio-ether segments ► Thiol-ene chemistry as a tool to design multifunctional electrolytes ► Mechanical performance of structural battery electrolytes

Li₄Ti₅O₁₂/Reduced Graphene Oxide composite as a high rate capability material for lithium ion batteries

Original Research Article

Pages 30-36

Qian Zhang, Wenjie Peng, Zhixing Wang, Xinhai Li, Xunhui Xiong, Huajun Guo, Zhiguo Wang, Feixiang Wu

Highlights

► It is the first time synthesizing Li₄Ti₅O₁₂/Reduced Graphene Oxide (LTO/RGO) composite by spray-drying. ► The network of RGO wrapping on Li₄Ti₅O₁₂ particles created a synergetic effect. ► The composite presented excellent rate performance.

AlF₃ coated LiV₃O₈ nanosheets with significantly improved cycling stability as cathode material for Li-ion battery

Original Research Article

Pages 37-42

Haiyan Wang, Yan Yu, Guanhua Jin, Yougen Tang, Suqin Liu, Dan Sun

Highlights

► AlF₃ was successfully coated on the surface of LiV₃O₈ nanosheets. ► AlF₃ coated LiV₃O₈ exhibited the significantly improved cycling stability. ► Electrochemical property of the coated one at elevated temperature was improved. ► AlF₃ layer could protect the bulk material well.

Spinel LiCrTiO₄ fibers as an advanced anode material in high performance lithium ion batteries

Original Research Article

Pages 43-47

Li Wang, Qizhen Xiao, Lijuan Wu, Gangtie Lei, Zhaohui Li

Highlights

► A simple electrospinning method has been developed to fabricate LiCrTiO_4 fibers. ► LiCrTiO_4 fibers as anode material for lithium-ion batteries ► A stable capacity of over 290 mAh g^{-1} is achieved after 50 cycles at 100 mA g^{-1} . ► LiCrTiO_4 anode exhibits good cycle performance and high rate capability.

Structure and conductivity of rutile niobium iron titanate

Original Research Article

Pages 48-53

Peter I. Cowin, Christophe T.G. Petit, Rong Lan, Carl J. Schaschke, Shanwen Tao

Highlights

► A rutile solid solution $\text{Fe}_x\text{Ti}_{1-2x}\text{Nb}_x\text{O}_{2-6}$ ($x < 0.3$) was synthesised. ► The conductivity of these compounds was noted to increase upon reduction. ► The compounds were not stable upon reduction with formation of a $(\text{Fe,Ti,Nb})_2\text{O}_3$. ► Reduction at higher temperature causes significant increases in conductivity.

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