Special Issue

Molecular Precursor Method for Lithium Ion Batteries using Thin-Film Materials

Message from the Guest Editor

In 1996, Prof. Mitsunobu Sato's work was focused on the thin film fabrication of various metal oxides and phosphate compounds using coating solutions, including stable metal complexes, which is called the molecular precursor method (MPM). The method is based on the preparation of precursor solutions involving anionic metal complexes and appropriate alkylammonium cation. The stability, homogeneity, miscibility, coatability and other characteristics of the precursor solutions, which can be used for various coating methods, are practically advantageous, in contrast to the conventional sol–gel method. The MPM represents a facile procedure for thin-film fabrication of various metal oxides or phosphates, which are useful as electron and/or ion conductors, and semiconductors such as In2O3, ZnO, LiCoO2, Li4Ti5O12, TiO2, and Cu2O. The MPM is used to develop many functional materials by surface modification of various substrates such as glasses, metals and ceramics, through chemical fabrication of thin films. One of the advantages of this method is its low-cost, due to the chemical process used which saves both resource and production energy...

Guest Editor

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