Special Issue

Polymer Nanocomposite Dielectrics for Energy Storage and Electrocaloric Effect

Message from the Guest Editor

Polymer-ceramic matrix composites or composite dielectrics with electrocaloric effect have been attracting intensive attention as an alternative refrigeration mechanism compared to conventional compressor-based refrigerators and air conditioners, where polymer-ceramic matrix composites integrating the merits of ferroelectric polymers with high breakdown strength and ferroelectric ceramics with desired dielectric permittivity achieve the largely enhanced electrocaloric effect performance. Therefore, high performance electrocaloric effect will focus on deciding high piezoelectricity ferroelectric ceramic filler, polymer matrix, and high thermal conducting filler to fabricate polymer-ceramic matrix composite dielectrics. To successfully accomplish the design of high-performance polymer-ceramic matrix composite dielectrics and electrocaloric effect cooling devices for advanced refrigeration system/equipment, crucial research directions in terms of material synthesis, structural configuration, property characterization and device/chip integration are either individually studied or systematically considered in polymer-ceramic matrix composites.

Guest Editor

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I would like to invite you to contribute to the success of the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

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