Progress in Solid-Oxide Fuel Cell Technology

Message from the Guest Editor

Alternative methods to generate electricity with high efficiency, minimum greenhouse gases and less reliance on fossil fuels need to be sought to sustain a growing society. Fuel cells have been shown as a potential candidate for various applications, such as stationary and portable devices. This Special Issue discusses the development of solid oxide fuel cell (SOFC) technology, one of many types of fuel cells found in the market. SOFC offers many practical advantages despite the lower open circuit voltage as the expensive precious metals can be replaced by more earth-abundant oxides and it is more tolerant towards carbon monoxide. In addition, fuel cell-combined heat and power applications can achieve even higher efficiency. We invite scientists working in the area of to contribute:

- Material selection and design (cathode, electrolyte, anode, interconnect, sealant)
- Electrochemical, material and mechanical characterization
- Stack configuration and design
- Transport (ion, electron, mass transport)
- Reliability and degradation
- Modelling
- Application of solid oxide fuel cells

Keyword: solid oxide fuel cell, electrochemistry, ion and electron transport