

**Fluorous, Ion-containing Block Copolymers: Model Polymers for Investigating  
the Role of Morphology on Proton Conduction**

Steven Holdcroft

Department of Chemistry, Simon Fraser University, Burnaby, BC, Canada, V5A 1S6  
and  
National Research Council of Canada, Institute for Fuel Cell Innovation, 3250 East Mall,  
Vancouver, BC, Canada V6T 1W5

In order to predict the performance of a proton exchange membranes in a fuel cell and to design application-specific materials it is necessary to develop a fuller understanding the physico-chemical attributes of the solid polymer electrolyte. This necessarily requires the undertaking of rigorous, systematic studies on representative materials that possess known and controllable structures and morphologies. In this presentation the synthesis and properties of several series of novel ionic, block copolymers are described.