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Research Interests

Polymer Science and Engineering:

(a) Design of Polymer :Materials:

Condensation Polymerization of Polyimide

Condensation Polymerization of Polyester

Condensation Polymerization of Polyamide

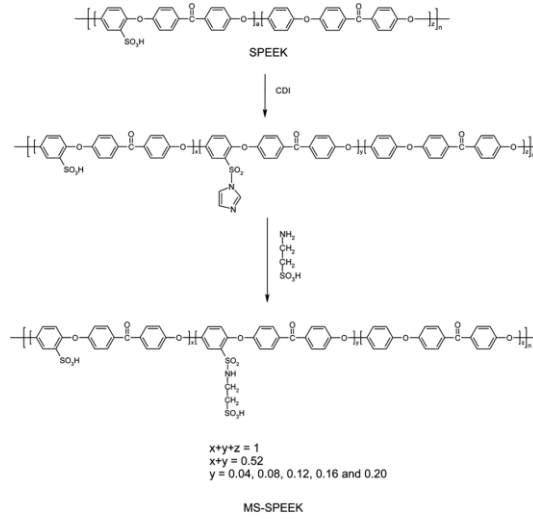
Condensation Polymerization of PEEK

Condensation Polymerization of PSF

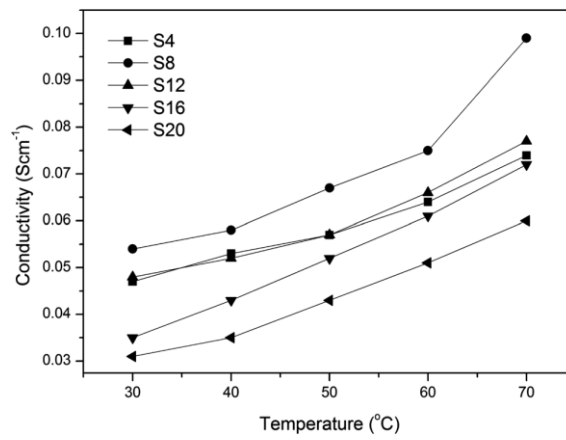
(b) Design of Electrolyte Materials for Direct Methanol Fuel Cell and PEMFC

Representative Publications

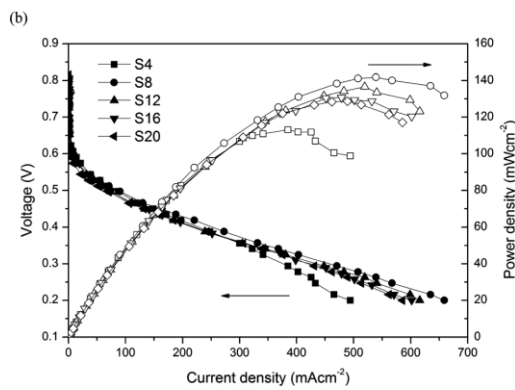
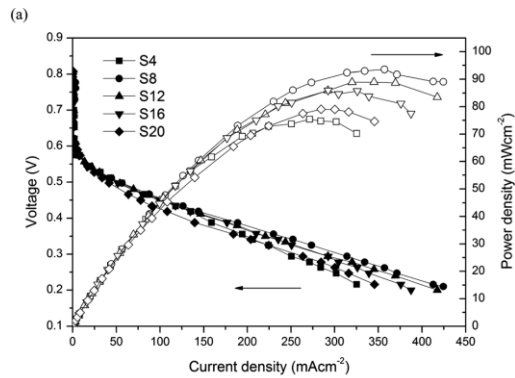
1. Lin, Chien-Kung*; Tsai, Jie-Cheng, 2012, The effect of the side-chain ratio on main-chain-type and side-chain-type sulfonated poly(ether ether ketone) for direct methanol fuel cell applications, *Journal of Materials Chemistry*, 22, 9244-9252.
 2. Lin, Chien-Kung*; Kuo, Jen-Feng; Chen, Chuh-Yung; Fang, Jing-Jing, 2012, Investigation of bifurcated hydrogen bonds within the thermotropic liquid crystalline polyurethanes, *Polymer*, 53, 254-258.
 3. Tsai, Jie-Cheng; Lin, Chien-Kung*, 2011, Preparation of main-chain-type and side-chain-type SPEEK membranes for direct methanol fuel cell applications, *Journal of Power Sources*, 196, 9308-9316.
 4. Lin, Chien-Kung*; Wu I-Der, 2011, Investigating the effect of interaction behavior on the ionic conductivity of Polyester/LiClO₄ blend systems, *Polymer*, 52, 4106-4113
 5. Tsai, Jie-Cheng; Lin, Chien-Kung*, 2011, Effect of PTFE content in gas diffusion layer based on Nafion® /PTFE membrane for low humidity proton exchange membrane fuel cell, *Journal of the Taiwan Institute of Chemical Engineers*, 42, 945-951.
 6. Tsai, Jie-Cheng; Lin, Chien-Kung*, 2011, Acid-base blend membranes based on Nafion® /aminated SPEEK for reducing methanol permeability, *Journal of the Taiwan Institute of Chemical Engineers*, 42, 281-285.
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The preparation of MS-SPEEK via the post-aromatic substitution reaction of SPEEK.



The proton conductivity of MS-SPEEKs



The performance curves of MS-SPEEKs at (a) 60 °C and (b) 70 °C.