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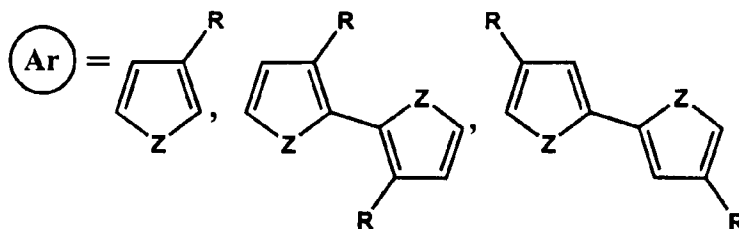
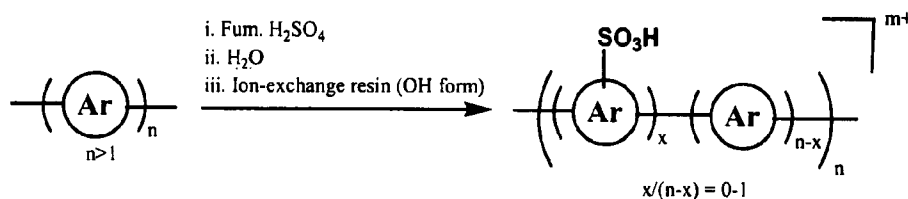
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(54) Title: SULFONATION OF CONDUCTING POLYMERS AND OLED, PHOTOVOLTAIC, AND ESD DEVICES



(57) Abstract: Conducting polymer systems for hole injection or transport layer applications including a composition comprising: a water soluble or water dispersible regioregular polythiophene comprising (i) at least one organic substituent, and (ii) at least one sulfonate substituent comprising sulfonate sulfur bonding directly to the polythiophene backbone. The polythiophene can be water soluble, water dispersible, or water swellable. They can be self-doped. The organic substituent can be an alkoxy substituent, or an alkyl substituent. OLED, PLED, SMOLED, PV, and ESD applications can be used.

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