



US 20220127450A1

(19) **United States**

(12) **Patent Application Publication**
Fujimoto

(10) **Pub. No.: US 2022/0127450 A1**

(43) **Pub. Date: Apr. 28, 2022**

(54) **POLY(PHENYLENE) WITH HIGH ION SELECTIVITY FOR USE IN ANION EXCHANGE MEMBRANES**

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(21) Appl. No.: **17/569,777**

(22) Filed: **Jan. 6, 2022**

Related U.S. Application Data

(62) Division of application No. 16/578,629, filed on Sep. 23, 2019.

Publication Classification

(51) **Int. Cl.**
C08L 65/02 (2006.01)
C08G 61/10 (2006.01)
B01J 41/09 (2006.01)
(52) **U.S. Cl.**
CPC *C08L 65/02* (2013.01); *C08G 61/10* (2013.01); *C08G 2261/143* (2013.01); *C08G 2261/148* (2013.01); *B01J 41/09* (2017.01)

(57) **ABSTRACT**

A method for synthesizing a poly(phenylene) with high ion selectivity comprises dissolving an alkyl halide poly(phenylene) in a polar aprotic solvent to form a nonaqueous solution and adding an anhydrous nucleophile to the nonaqueous solution to replace the halide of the alkyl halide poly(phenylene) with a cationic group of the nucleophile. The poly(phenylene) can be used in anion exchange membranes.

