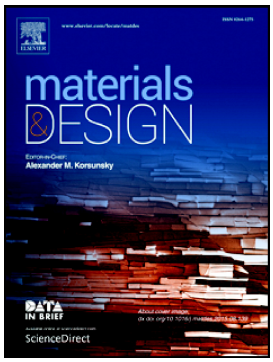
Accepted Manuscript



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PII: S0264-1275(18)30749-4
DOI: doi:10.1016/j.matdes.2018.09.047
Reference: JMADE 7408

To appear in: *Materials & Design*

Received date: 22 July 2018
Revised date: 26 September 2018
Accepted date: 27 September 2018

Please cite this article as: Yafei Xiao, Wenjuan Huang, Kaijun Xu, Mingxin Li, Minmin Fan, Ke Wang , Preparation of anion exchange membrane with branch polyethyleneimine as main skeleton component. Jmade (2018), doi:10.1016/j.matdes.2018.09.047

Preparation of Anion Exchange Membrane with Branch Polyethyleneimine as Main Skeleton Component

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Abstract: A series of anion exchange membranes (AEMs) consisting of polyvinyl alcohol/branched polyethyleneimine (PVA/BPEI) were simply prepared by casting method using glutaraldehyde (GA) as crosslinking agent, then quaternized with benzyl chloride and alkalized in KOH solution. Subsequently, the comparative analysis was performed to select the optimal ratio of PVA to BPEI and crosslinking degree of AEMs. The structure and properties of AEMs were verified by FT-IR, XRD, TGA, mechanical analysis, water uptake test, swelling ratio test, ion exchange capacity (IEC) test, ionic conductivity measurement, and alkaline/oxidative stability test. The results showed that the maximum value of ionic conductivity was 86.0 mS/cm at 80 ℃ with IEC value of 2.35 meq/g. Moreover, the AEM had

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