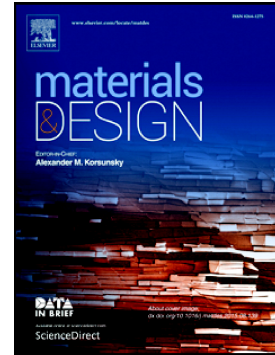


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Preparation of Anion Exchange Membrane with Branch Polyethyleneimine as Main Skeleton Component

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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 °C with IEC value of 2.35 meq/g. Moreover, the AEM had

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