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Commercial perfluorosulfonic acid membranes for

vanadium redox flow battery: effect of ion-exchange capacity and membrane internal structure

Jiří Vrána^a, Jiří Charvát^a, Petr Mazúr^b, Petr Bělský^b, Jan Dundálek^a, Jaromír Pocedič^b, Juraj Kosek^{a,b,*}

^a Department of Chemical Engineering, University of Chemistry and Technology, Prague,

Technická 5, 166 28 Prague 6, Czech Republic

^b New Technologies - Research Centre, University of West Bohemia,

Univerzitní 8, 306 14 Pilsen, Czech Republic

*Corresponding author, juraj.kosek@vscht.cz, +420 220 443 296

Highlights

- Permeation of vanadium ions through tested membrane follows $V^{2+} > VO^{2+} > VO_2^{+} > VO_2^$
- Ion-exchange capacity and morphology rules membrane conductivity and permeability
- Inner morphology dependency on the length of polymeric side-chain observed by SAXS

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