Ion transport numbers in charged porous membranes

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Charged porous media are a fundamental part in many applications related to energy generation, such reverse electrodialysis or membrane fuel cells, or for separation processes, such electrodialysis or reverse osmosis. One of their main properties is the membrane permselectivity since it largely determines the performance of the process. The permselectivity depends on the ion transport numbers involved on the membrane process, which are therefore parameters often used to evaluate and compare different charged porous membranes. Moreover, ion transport numbers appear as important parameters in non-equilibrium thermodynamics frameworks to describe membrane processes involving charged porous media. This makes its experimental determination of great interest for the study of charged porous membranes. In this work, the influence of the temperature on the ion transport number of a charged porous membrane is analyzed.