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Electrokinetics tools to better characterize synthetic membranes and help understanding their behavior in contact with real fluids

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The objective of the present work is to help in the choice of a membrane material depending on its application. Still today, this choice is not sufficiently rationalized, probably because all the usable characteristics of a given membrane are not easily affordable. In order to better adapt the membrane material to its application we have developed some electro-kinetics tools in order to determine: (i) transference numbers of electrolytes solutions across ionic-exchange membranes used in electro dialysis (ED)

and (ii) streaming potential measurements in porous membranes (MF, UF) and also dense membranes (RO) for the diagnosis of internal fouling and/or the evaluation of apparition of micro porosities and isoelectric point displacement in RO/NF membranes.

Biography

Maxime Pontie is working as a Professor at the University of Angers since 2004. He received a DSc degree under Professors Lemordant and Rumeau in 1996 from the University Francois Rabelais in Tours, France. After a Post-doctoral research study under Professor R W Bowen, Swansea University of Wales, UK, with a research topic dedicated to mass transfer mechanism in nano-filtration. His current research interests are water desalination membrane processes with a way to intensify the processes in a sustainable development approach. He has over 100 publications that have been cited over 100 times, and his publication H-index is 35 and has been serving as an Editorial Board Member of reputed journals. He was a Board Member of the European Desalination Society from 2012 to 2017 and he is a Member of the French Membrane Society (CFM).

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