

Suzana Nunes

Publications in Scientific Journals (updated in March 2025)

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(2010-2024, King Abdullah University of Science and Technology, Saudi Arabia)[117-308]

- [1] S.P. Nunes, F. Galembeck, Preparation and characterization of cellulose acetate membranes for osmosedimentation, *Journal of Polymer Science: Polymer Letters Edition* 21(1) (1983) 49-55.
- [2] S.P. Nunes, A.T.N. Pires, F. Galembeck, Concentration of dextran and gamma-globulin by osmocentrifugation *Chemica Scripta* 23(5) (1984) 233-239.
- [3] A.T. Pires, S.P. Nunes, F. Galembeck, Osmosedimentation: Approach to sedimentation equilibrium under gravity, *Journal of Colloid and Interface Science* 98(2) (1984) 489-493.
- [4] S.P. Nunes, F. Galembeck, Percoll and Ficoll self-generated density gradients by low-speed osmocentrifugation, *Analytical Biochemistry* 146(1) (1985) 48-51.
- [5] S.P. Nunes, F. Galembeck, N. Barelli, Cellulose acetate membranes for osmosedimentation: Performance and morphological dependence on preparation conditions, *Polymer* 27(6) (1986) 937-943.
- [6] S.P. Nunes, A.A. Winkler-Hechenleitner, F. Galembeck, A New Centrifugal Ultrafiltration Device, *Separation Science and Technology* 21(8) (1986) 823-830.
- [7] S. Nunes, F. Galembeck, Osmosedimentation: a study using the linear approximation of non-equilibrium thermodynamics, *Journal of Irreversible Thermodynamics* 12 (1987) 205-212. <https://doi.org/10.1515/jnet.1987.12.3.205>.
- [8] L. Jelic, S. Nunes, E. Paul, B. Wolf, On the cooccurrence of demixing and thermoreversible gelation of polymer solutions. 1. Experimental observations, *Macromolecules* 20(8) (1987) 1943-1947.
- [9] S. Nunes, B. Wolf, On the cooccurrence of demixing and thermoreversible gelation of polymer solutions. 3. Overall view, *Macromolecules* 20(8) (1987) 1952-1957.
- [10] S. Nunes, B. Wolf, H. Jeberien, On the cooccurrence of demixing and thermoreversible gelation of polymer solutions. 2. Thermodynamic background, *Macromolecules* 20(8) (1987) 1948-1951.
- [11] S. Nunes, R.A. da Costa, S.P. Barbosa, G.R. Almeida, F. Galembeck, Tracking degradation and pyrolysis of EPDM insulators, *IEEE Transactions on Electrical Insulation* 24(1) (1989) 99-105.
- [12] S.P. Nunes, P. Alves, F. Galembeck, A low-cost, small-scale polymer mixer, *Journal of Chemical Education* 67(11) (1990) 982.
- [13] D.F. Siqueira, F. Galembeck, S.P. Nunes, Adhesion and morphology of PVDF/PMMA and compatibilized PVDF/PS interfaces, *Polymer* 32(6) (1991) 990-998.
- [14] E.C. Muniz, P.A. Vasquez, R.E. Bruns, S.P. Nunes, B. Wolf, Polymer-polymer miscibility evaluation by acoustic emission, *Die Makromolekulare Chemie, Rapid Communications* 13(1) (1992) 45-53.

- [15] S.P. Nunes, K.V. Peinemann, Ultrafiltration membranes from PVDF/PMMA blends, *Journal of Membrane Science* 73(1) (1992) 25-35.
- [16] C. Blicke, K.-V. Peinemann, S.P. Nunes, Ultrafiltration membranes from poly (ether sulfonamide)/poly (ether imide) blends, *Journal of Membrane Science* 79(1) (1993) 83-91.
- [17] D.F. Siqueira, R.E. Bruns, S.P. Nunes, Optimization of polymer blends using statistical mixture analysis, *Polymer Networks & Blends* 3(2) (1993) 63-69.
- [18] D.F. Siqueira, S.P. Nunes, Compatibilization of PVDF/PS blends with styrene and methyl methacrylate random and blockcopolymers, *Polymer Networks & Blends* 3(1) (1993) 45-50.
- [19] E. Muniz, M. Pellegrini, S.P. Nunes, Preferential wetting of oligomeric ethylene glycol/propylene glycol blends on solid surfaces, *Acta Polymerica* 45(2) (1994) 110-114.
- [20] E.C. Muniz, S.P. Nunes, B. Wolf, Shear influence on the phase separation of oligomer blends, *Macromolecular Chemistry and Physics* 195(4) (1994) 1257-1271.
- [21] D. Siqueira, S. Nunes, B. Wolf, Solution properties of a diblock copolymer in a selective solvent of marginal quality. 1. Phase diagram and rheological behavior, *Macromolecules* 27(4) (1994) 1045-1050.
- [22] D. Siqueira, S. Nunes, B. Wolf, Solution properties of a diblock copolymer in a selective solvent of marginal quality. 2. Characterization of micelles and surface tension, *Macromolecules* 27(16) (1994) 4561-4565.
- [23] D.F. Siqueira, S.P. Nunes, Morphology of block copolymers in a selective environment, *Polymer* 35(3) (1994) 490-495.
- [24] S.P. Nunes, M.L. Sforça, K.-V. Peinemann, Dense hydrophilic composite membranes for ultrafiltration, *Journal of Membrane Science* 106(1-2) (1995) 49-56.
- [25] K.F. Silveira, I.V.P. Yoshida, S.P. Nunes, Phase separation in PMMA/silica sol-gel systems, *Polymer* 36(7) (1995) 1425-1434.
- [26] S. Nunes, J. Schultz, K.-V. Peinemann, Silicone membranes with silica nanoparticles, *Journal of Materials Science Letters* 15 (1996) 1139-1141.
- [27] S.P. Nunes, T. Inoue, Evidence for spinodal decomposition and nucleation and growth mechanisms during membrane formation, *Journal of Membrane Science* 111(1) (1996) 93-103.
- [28] R. Zoppi, C. Fonseca, M.-A. De Paoli, S. Nunes, Solid electrolytes based on poly (amide 6-b-ethylene oxide), *Solid State Ionics* 91(1-2) (1996) 123-130.
- [29] I. Nascimento, R. Bruns, D. Siqueira, S. Nunes, Application of statistical mixture models for ternary polymer blends, *Journal of the Brazilian Chemical Society* 8 (1997) 587-595.
- [30] S.P. Nunes, Recent advances in the controlled formation of pores in membranes, *Trends in Polymer Science* 6(5) (1997) 187-192.
- [31] M. Sforça, S. Nunes, K.-V. Peinemann, Composite nanofiltration membranes prepared by in situ polycondensation of amines in a poly (ethylene oxide-b-amide) layer, *Journal of Membrane Science* 135(2) (1997) 179-186.
- [32] L. Tröger, H. Hünnefeld, S. Nunes, M. Oehring, D. Fritsch, Structural characterization of catalytically active metal nanoclusters in poly (amide imide) films with high metal loading, *The Journal of Physical Chemistry B* 101(8) (1997) 1279-1291.
- [33] L. Tröger, H. Hünnefeld, S. Nunes, M. Oehring, D. Fritsch, Structural characterization of catalytically active metal clusters in polymer membranes, *Zeitschrift für Physik D Atoms, Molecules and Clusters* 40 (1997) 81-83.
- [34] L. Troger, S. Nunes, M. Oehring, H. Hünnefeld, D. Fritsch, Local structure of catalytically active metal clusters in polymer membranes, *Le Journal de Physique IV* 7(C2) (1997) C2-875-C2-877.
- [35] M.M. Werlang, M.A. De Araújo, S.P. Nunes, I.V.P. Yoshida, Blends of organosilicon polymers with polystyrene and poly (2, 6-dimethyl-1, 4-phenylene oxide), *Journal of Polymer Science Part B: Polymer Physics* 35(16) (1997) 2609-2616.
- [36] R. Zoppi, C. De Castro, I. Yoshida, S. Nunes, Hybrids of SiO₂ and poly (amide 6-b-ethylene oxide), *Polymer* 38(23) (1997) 5705-5712.

- [37] R. Zoppi, C. Fonseca, M.A. De Paoli, S. Nunes, Hybrid electrolytes of poly (ethylene oxide) copolymers/LiClO₄/SiO₂: thermal analysis, mechanical properties and chemometric study of ionic conductivity, *Acta Polymerica* 48(5-6) (1997) 193-198.
- [38] E. Carone, M. Felisberti, S. Pereira Nunes, Blends of poly (methyl methacrylate) and polyamides, *Journal of Materials Science* 33 (1998) 3729-3735.
- [39] J.F. Maggioni, S.P. Nunes, A.T.N. Pires, A. Eich, R. Horst, B. Wolf, Phase diagrams of the system tetrahydrofuran/ γ -butyrolactone/poly (ether imide) and determination of interaction parameters, *Polymer* 39(21) (1998) 5133-5138.
- [40] K.-V. Peinemann, J. Maggioni, S. Nunes, Poly (ether imide) membranes obtained from solution in cosolvent mixtures, *Polymer* 39(15) (1998) 3411-3416.
- [41] M.M. Werlang, M.A.d. Araújo, S.P. Nunes, I.V.P. Yoshida, Miscibilidade de blendas de poliestireno com polímeros de silício, *Polímeros* 8 (1998) 77-81.
- [42] R. Zoppi, S. Nunes, Hybrids of poly (ethylene oxide-co-epichlorhydrin) and silica: phase separation, morphology and thermal properties, *Polymer* 39(25) (1998) 6195-6203.
- [43] R. Zoppi, S. Nunes, Electrochemical impedance studies of hybrids of perfluorosulfonic acid ionomer and silicon oxide by sol-gel reaction from solution, *Journal of Electroanalytical Chemistry* 445(1-2) (1998) 39-45.
- [44] R. Zoppi, I. Yoshida, S. Nunes, Hybrids of perfluorosulfonic acid ionomer and silicon oxide by sol-gel reaction from solution: Morphology and thermal analysis, *Polymer* 39(6-7) (1998) 1309-1315.
- [45] S. Nunes, K. Peinemann, K. Ohlrogge, A. Alpers, M. Keller, A. Pires, Membranes of poly (ether imide) and nanodispersed silica, *Journal of Membrane Science* 157(2) (1999) 219-226.
- [46] M. Sforça, I. Yoshida, S. Nunes, Organic-inorganic membranes prepared from polyether diamine and epoxy silane, *Journal of Membrane Science* 159(1-2) (1999) 197-207.
- [47] R. Zoppi, S. Contant, E. Duek, F. Marques, M. Wada, S. Nunes, Porous poly (L-lactide) films obtained by immersion precipitation process: morphology, phase separation and culture of VERO cells, *Polymer* 40(12) (1999) 3275-3289.
- [48] E. Carone Jr, U. Kopcak, M. Goncalves, S. Nunes, In situ compatibilization of polyamide 6/natural rubber blends with maleic anhydride, *Polymer* 41(15) (2000) 5929-5935.
- [49] J. Maggioni, A. Eich, B. Wolf, S. Nunes, On the viscosity of moderately concentrated solutions of poly (ether imide) in a mixed solvent of marginal quality, *Polymer* 41(12) (2000) 4743-4746.
- [50] R. Zoppi, S. Das Neves, S. Nunes, Hybrid films of poly (ethylene oxide-b-amide-6) containing sol-gel silicon or titanium oxide as inorganic fillers: effect of morphology and mechanical properties on gas permeability, *Polymer* 41(14) (2000) 5461-5470.
- [51] M.L. Sforça, I.V. Yoshida, C.P. Borges, S.P. Nunes, Hybrid membranes based on SiO₂/polyether-b-polyamide: Morphology and applications, *Journal of Applied Polymer Science* 82(1) (2001) 178-185.
- [52] A. Dyck, D. Fritsch, S. Nunes, Proton-conductive membranes of sulfonated polyphenylsulfone, *Journal of Applied Polymer Science* 86(11) (2002) 2820-2827.
- [53] S. Nunes, B. Ruffmann, E. Rikowski, S. Vetter, K. Richau, Inorganic modification of proton conductive polymer membranes for direct methanol fuel cells, *Journal of Membrane Science* 203(1-2) (2002) 215-225.
- [54] D. Gomes, S.P. Nunes, Synthesis and Characterization of Poly (arylene ether oxadiazole) Telechelics, *Macromolecular Chemistry and Physics* 204(17) (2003) 2130-2141.
- [55] D. Gomes, S.P. Nunes, J.C. Pinto, C. Borges, Synthesis and characterization of flexible polyoxadiazole films through cyclodehydration of polyhydrazides, *Polymer* 44(13) (2003) 3633-3639.
- [56] K. Jakoby, K. Peinemann, S.P. Nunes, Palladium-Catalyzed Phosphonation of Polyphenylsulfone, *Macromolecular Chemistry and Physics* 204(1) (2003) 61-67.
- [57] C. Karthikeyan, M. Schossig, E. Radovanovic, M. Goncalves, H. Wittich, K. Schulte, S. Nunes, Aligned Nafion® nanocomposites: Preparation and morphological characterization, *Macromolecular Materials and Engineering* 288(2) (2003) 175-180.

- [58] M. Ponce, L. Prado, B. Ruffmann, K. Richau, R. Mohr, S. Nunes, Reduction of methanol permeability in polyetherketone-heteropolyacid membranes, *Journal of Membrane Science* 217(1-2) (2003) 5-15.
- [59] B. Ruffmann, H. Silva, B. Schulte, S. Nunes, Organic/inorganic composite membranes for application in DMFC, *Solid State Ionics* 162 (2003) 269-275.
- [60] A. Taeger, C. Vogel, D. Lehmann, D. Jehnichen, H. Komber, J. Meier-Haack, N. Ochoa, S. Nunes, K.-V. Peinemann, Ion exchange membranes derived from sulfonated polyaramides, *Reactive and Functional Polymers* 57(2-3) (2003) 77-92.
- [61] M. Ponce, L.d.A. Prado, V. Silva, S. Nunes, Membranes for direct methanol fuel cell based on modified heteropolyacids, *Desalination* 162 (2004) 383-391.
- [62] L.d.A. Prado, H. Wittich, K. Schulte, G. Goerigk, V.M. Garamus, R. Willumeit, S. Vetter, B. Ruffmann, S. Nunes, Anomalous small-angle X-ray scattering characterization of composites based on sulfonated poly (ether ether ketone), zirconium phosphates, and zirconium oxide, *Journal of Polymer Science Part B: Polymer Physics* 42(3) (2004) 567-575.
- [63] V. Silva, B. Ruffmann, H. Silva, A. Mendes, M. Madeira, S. Nunes, Zirconium oxide modified sulfonated poly (ether ether ketone) membranes for direct methanol fuel cell applications, *Materials Science Forum*, Trans Tech Publ, 2004, pp. 587-591.
- [64] S. Vetter, S. Nunes, Synthesis and characterization of new sulfonated poly (arylene ether 1, 3, 4-oxadiazole) s, *Reactive and Functional Polymers* 61(2) (2004) 171-182.
- [65] D. Gomes, S.P. Nunes, K.-V. Peinemann, Membranes for gas separation based on poly (1-trimethylsilyl-1-propyne)-silica nanocomposites, *Journal of Membrane Science* 246(1) (2005) 13-25.
- [66] C. Karthikeyan, S. Nunes, L. Prado, M. Ponce, H. Silva, B. Ruffmann, K. Schulte, Polymer nanocomposite membranes for DMFC application, *Journal of Membrane Science* 254(1-2) (2005) 139-146.
- [67] C. Karthikeyan, S. Nunes, K. Schulte, Ionomer-silicates composite membranes: Permeability and conductivity studies, *European Polymer Journal* 41(6) (2005) 1350-1356.
- [68] A.d.A. Luís, M. Ponce, S. Funari, K. Schulte, V. Garamus, R. Willumeit, S. Nunes, SAXS/WAXS characterization of proton-conducting polymer membranes containing phosphomolybdic acid, *Journal of Non-crystalline Solids* 351(27-29) (2005) 2194-2199.
- [69] L.A.d.A. Prado, G. Goerigk, M. Ponce, V. Garamus, H. Wittich, R. Willumeit, K. Schulte, S. Nunes, Characterization of proton-conducting organic-inorganic polymeric materials by ASAXS, *Journal of Polymer Science Part B: Polymer Physics* 43(21) (2005) 2981-2992.
- [70] L.d.A. Prado, C. Karthikeyan, K. Schulte, S. Nunes, I.L. De Torriani, Organic modification of layered silicates: structural and thermal characterizations, *Journal of Non-Crystalline Solids* 351(12-13) (2005) 970-975.
- [71] J. Roeder, H. Silva, S.P. Nunes, A.T. Pires, Mixed conductive blends of SPEEK/PANI, *Solid State Ionics* 176(15-16) (2005) 1411-1417.
- [72] V. Silva, B. Ruffmann, H. Silva, Y. Gallego, A. Mendes, L. Madeira, S. Nunes, Proton electrolyte membrane properties and direct methanol fuel cell performance: I. Characterization of hybrid sulfonated poly (ether ether ketone)/zirconium oxide membranes, *Journal of Power Sources* 140(1) (2005) 34-40.
- [73] V. Silva, B. Ruffmann, S. Vetter, A. Mendes, L. Madeira, S. Nunes, Characterization and application of composite membranes in DMFC, *Catalysis Today* 104(2-4) (2005) 205-212.
- [74] V. Silva, J. Schirmer, R. Reissner, B. Ruffmann, H. Silva, A. Mendes, L. Madeira, S. Nunes, Proton electrolyte membrane properties and direct methanol fuel cell performance: II. Fuel cell performance and membrane properties effects, *Journal of Power Sources* 140(1) (2005) 41-49.
- [75] V. Silva, S. Weisshaar, R. Reissner, B. Ruffmann, S. Vetter, A. Mendes, L. Madeira, S. Nunes, Performance and efficiency of a DMFC using non-fluorinated composite membranes operating at low/medium temperatures, *Journal of Power Sources* 145(2) (2005) 485-494.

- [76] S. Vetter, B. Ruffmann, I. Buder, S. Nunes, Proton conductive membranes of sulfonated poly (ether ketone ketone), *Journal of Membrane Science* 260(1-2) (2005) 181-186.
- [77] V. Abetz, T. Brinkmann, M. Dijkstra, K. Ebert, D. Fritsch, K. Ohlrogge, D. Paul, K.V. Peinemann, S. Pereira-Nunes, N. Scharnagl, Developments in membrane research: from material via process design to industrial application, *Advanced Engineering Materials* 8(5) (2006) 328-358.
- [78] V. Antonucci, A.S. Aricò, V. Baglio, J. Brunea, I. Buder, N. Cabello, M. Hogarth, R. Martin, S. Nunes, Membranes for portable direct alcohol fuel cells, *Desalination* 200(1-3) (2006) 653-655.
- [79] D. Gomes, I. Buder, S.P. Nunes, Sulfonated silica-based electrolyte nanocomposite membranes, *Journal of Polymer Science Part B: Polymer Physics* 44(16) (2006) 2278-2298.
- [80] D. Gomes, I. Buder, S.P. Nunes, Novel proton conductive membranes containing sulfonated silica, *Desalination* 199(1-3) (2006) 274-276.
- [81] D. Gomes, K.-V. Peinemann, S. Nunes, W. Kujawski, J. Kozakiewicz, Gas transport properties of segmented poly (ether siloxane urethane urea) membranes, *Journal of Membrane Science* 281(1-2) (2006) 747-753.
- [82] C.S. Karthikeyan, S.P. Nunes, L. Prado, K. Schulte, Impact of Functionalization of Nanoparticles on the Barrier Properties of Ionomer-nanocomposite Membranes for DMFC, *ECS Transactions* 3(1) (2006) 1297.
- [83] C.S. Karthikeyan, S.P. Nunes, K. Schulte, Permeability and conductivity studies on ionomer-polysilsesquioxane hybrid materials, *Macromolecular Chemistry and Physics* 207(3) (2006) 336-341.
- [84] C.S. Karthikeyan, S.P. Nunes, K. Schulte, Barrier Properties of Poly (benzimidazole)-Layered Silicates Nanocomposite Materials, *Advanced Engineering Materials* 8(10) (2006) 1010-1015.
- [85] E. Parceró, R. Herrera, S.P. Nunes, Phosphonated and sulfonated poly(henyl)sulfone membranes for fuel cell application, *Journal of Membrane Science* 285(1-2) (2006) 206-213.
- [86] J. Roeder, V. Zucolotto, S. Shishatskiy, J.R. Bertolino, S.P. Nunes, A.T. Pires, Mixed conductive membrane: Aniline polymerization in an acid SPEEK matrix, *Journal of Membrane Science* 279(1-2) (2006) 70-75.
- [87] S. Shishatskiy, C. Nistor, M. Popa, S.P. Nunes, K.-V. Peinemann, Comparison of asymmetric and thin-film composite membranes having Matrimid 5218 selective layer, *Desalination* 1(199) (2006) 193-194.
- [88] S. Shishatskiy, C. Nistor, M. Popa, S.P. Nunes, K.V. Peinemann, Polyimide asymmetric membranes for hydrogen separation: influence of formation conditions on gas transport properties, *Advanced Engineering Materials* 8(5) (2006) 390-397.
- [89] V. Silva, A. Mendes, L. Madeira, S. Nunes, Proton exchange membranes for direct methanol fuel cells: Properties critical study concerning methanol crossover and proton conductivity, *Journal of Membrane Science* 276(1-2) (2006) 126-134.
- [90] V. Silva, B. Ruffmann, H. Silva, V. Silva, A. Mendes, L. Madeira, S. Nunes, Zirconium oxide hybrid membranes for direct methanol fuel cells—Evaluation of transport properties, *Journal of Membrane Science* 284(1-2) (2006) 137-144.
- [91] V. Silva, B. Ruffmann, S. Vetter, M. Boaventura, A. Mendes, L. Madeira, S. Nunes, Mass transport of direct methanol fuel cell species in sulfonated poly (ether ether ketone) membranes, *Electrochimica Acta* 51(18) (2006) 3699-3706.
- [92] V. Silva, V. Silva, A. Mendes, L. Madeira, S. Nunes, Pre-treatment effect on the transport properties of sulfonated poly (ether ether ketone) membranes for DMFC applications, *Desalination* 200(1-3) (2006) 645-647.
- [93] S. Vetter, V. Abetz, G. Goerigk, I. Buder, S.P. Nunes, Polyetherketones for fuel cell application, *Desalination* 199(1-3) (2006) 289-290.
- [94] Y. Álvarez-Gallego, S.P. Nunes, A.E. Lozano, J.G. de la Campa, J. De Abajo, Synthesis and properties of novel polyimides bearing sulfonated benzimidazole pendant groups, *Macromolecular Rapid Communications* 28(5) (2007) 616-622.

- [95] D. Gomes, J. Roeder, M.L. Ponce, S.P. Nunes, Characterization of partially sulfonated polyoxadiazoles and oxadiazole-triazole copolymers, *Journal of Membrane Science* 295(1-2) (2007) 121-129.
- [96] R. Gosalawit, S. Chirachanchai, S. Shishatskiy, S.P. Nunes, Krytox-Montmorillonite-Nafion® nanocomposite membrane for effective methanol crossover reduction in DMFCs, *Solid State Ionics* 178(29-30) (2007) 1627-1635.
- [97] J. Roeder, D. Gomes, M.L. Ponce, V. Abetz, S.P. Nunes, Protonation of sulfonated poly (4, 4'-diphenylether-1, 3, 4-oxadiazole) membranes, *Macromolecular Chemistry and physics* 208(5) (2007) 467-473.
- [98] V. Silva, V. Silva, A. Mendes, L. Madeira, H. Silva, J. Michaelmann, B. Ruffmann, S. Nunes, Pre-treatment Effect on the Sulfonated Poly (ether ether ketone) Membrane Transport Properties and Direct Methanol Fuel Cell Performance, *Separation Science and Technology* 42(13) (2007) 2909-2925.
- [99] Y. Alvarez-Gallego, B. Ruffmann, V. Silva, H. Silva, A.E. Lozano, J.G. de la Campa, S.P. Nunes, J. de Abajo, Sulfonated polynaphthalimides with benzimidazole pendant groups, *Polymer* 49(18) (2008) 3875-3883.
- [100] S. Amancio-Filho, J. Roeder, S. Nunes, J. Dos Santos, F. Beckmann, Thermal degradation of polyetherimide joined by friction riveting (FricRiveting). Part I: Influence of rotation speed, *Polymer Degradation and Stability* 93(8) (2008) 1529-1538.
- [101] D. Gomes, R. Marschall, S.P. Nunes, M. Wark, Development of polyoxadiazole nanocomposites for high temperature polymer electrolyte membrane fuel cells, *Journal of Membrane Science* 322(2) (2008) 406-415.
- [102] D. Gomes, S.P. Nunes, Fluorinated polyoxadiazole for high-temperature polymer electrolyte membrane fuel cells, *Journal of Membrane Science* 321(1) (2008) 114-122.
- [103] D. Gomes, J. Roeder, M.L. Ponce, S.P. Nunes, Single-step synthesis of sulfonated polyoxadiazoles and their use as proton conducting membranes, *Journal of Power Sources* 175(1) (2008) 49-59.
- [104] R. Gosalawit, S. Chirachanchai, S. Shishatskiy, S.P. Nunes, Sulfonated montmorillonite/sulfonated poly (ether ether ketone)(SMMT/SPEEK) nanocomposite membrane for direct methanol fuel cells (DMFCs), *Journal of Membrane Science* 323(2) (2008) 337-346.
- [105] M. Jithunsa, K. Tashiro, S.P. Nunes, S. Chirachanchai, Preparation of 4 (5)-vinylimidazole-co-acrylic acid copolymer and thermal performances related to applicability as PEM fuel cells, *Polymer Degradation and Stability* 93(7) (2008) 1389-1395.
- [106] C. Nistor, S. Shishatskiy, M. Popa, S.P. Nunes, Composite membranes with cross-linked Matrimid selective layer for gas separation *Environmental Engineering & Management Journal (EEMJ)* 7(6) (2008).
- [107] S.H. Pezzin, N. Stock, S. Shishatskiy, S.P. Nunes, Modification of proton conductive polymer membranes with phosphonated polysilsesquioxanes, *Journal of Membrane Science* 325(2) (2008) 559-569. <https://doi.org/10.1016/j.memsci.2008.08.010>.
- [108] M. Ponce, M. Boaventura, D. Gomes, A. Mendes, L. Madeira, S. Nunes, Proton conducting membranes based on benzimidazole sulfonic acid doped sulfonated poly (oxadiazole-triazole) copolymer for low humidity operation, *Fuel Cells* 8(3-4) (2008) 209-216.
- [109] M.L. Ponce, D. Gomes, S.P. Nunes, One-pot synthesis of high molecular weight sulfonated poly (oxadiazole-triazole) copolymers for proton conductive membranes, *Journal of Membrane Science* 319(1-2) (2008) 14-22.
- [110] K. Prehn, R. Adelung, M. Heinen, S.P. Nunes, K. Schulte, Catalytically active CNT-polymer-membrane assemblies: From synthesis to application, *Journal of Membrane Science* 321(1) (2008) 123-130.
- [111] V.F. Silva, V.B. Silva, R. Reissner, S. Vetter, A. Mendes, L. Madeira, S. Nunes, Non-fluorinated membranes thickness effect on the DMFC performance, *Separation Science and Technology* 43(8) (2008) 1917-1932.

- [112] A.d.A. Luis, M.L. Ponce, G. Goerigk, S.S. Funari, V.M. Garamus, R. Willumeit, K. Schulte, S.P. Nunes, Analysis of proton-conducting organic-inorganic hybrid materials based on sulphonated poly (ether ether ketone) and phosphotungstic acid via SAXS and WAXS, *Journal of Non-crystalline Solids* 355(1) (2009) 6-11. <https://doi.org/10.1016/j.jnoncrysol.2008.09.036>.
- [113] H. Maab, M. Schieda, W. Yave, S. Shishatskiy, S. Nunes, SPEEK/Polyimide Blends for Proton Conductive Membranes Presented at the 1st CARISMA Conference, Progress MEA 2008, La Grande Motte, 21st-24th September 2008, *Fuel Cells* 9(4) (2009) 401-409. <https://doi.org/10.1002/fuce.200800121>.
- [114] H. Maab, S. Shishatskiy, S.P. Nunes, Preparation and characterization of bilayer carbon/polymer membranes, *Journal of Membrane Science* 326(1) (2009) 27-35. <https://doi.org/10.1016/j.memsci.2008.09.014>.
- [115] C. Nistor, S. Shishatskiy, M. Popa, S. Nunes, Organic-inorganic CO₂ selective membranes prepared by the Sol-Gel process, *Separation Science and Technology* 44(14) (2009) 3392-3411. <https://doi.org/10.1080/01496390903212698>.
- [116] P. Totsatitpaisan, S.P. Nunes, K. Tashiro, S. Chirachanchai, Investigation of the role of benzimidazole-based model compounds on thermal stability and anhydrous proton conductivity of sulfonated poly (ether ether ketone), *Solid State Ionics* 180(9-10) (2009) 738-745. <https://doi.org/10.1016/j.ssi.2009.02.032>.
- [117] M. Boaventura, M. Ponce, L. Brandao, A. Mendes, S. Nunes, Proton conductive membranes based on doped sulfonated polytriazole, *International Journal of Hydrogen Energy* 35(21) (2010) 12054-12064. <https://doi.org/10.1016/j.ijhydene.2010.08.123>.
- [118] H. Maab, S.P. Nunes, Modified SPEEK membranes for direct ethanol fuel cell, *Journal of Power Sources* 195(13) (2010) 4036-4042. <https://doi.org/10.1016/j.jpowsour.2010.01.005>.
- [119] S.P. Nunes, R. Sougrat, B. Hooghan, D.H. Anjum, A.R. Behzad, L. Zhao, N. Pradeep, I. Pinnau, U. Vainio, K.-V. Peinemann, Ultraporous films with uniform nanochannels by block copolymer micelles assembly, *Macromolecules* 43(19) (2010) 8079-8085. <https://doi.org/10.1021/ma101531k>.
- [120] M.L. Ponce, J. Roeder, D. Gomes, S.P. Nunes, Stability of sulfonated polytriazole and polyoxadiazole membranes, *Asia-Pacific Journal of Chemical Engineering* 5(1) (2010) 235-241. <https://doi.org/10.1002/apj.370>.
- [121] S. Shishatskiy, J.R. Pauls, S.P. Nunes, K.-V. Peinemann, Quaternary ammonium membrane materials for CO₂ separation, *Journal of Membrane Science* 359(1-2) (2010) 44-53. <https://doi.org/10.1016/j.memsci.2009.09.006>.
- [122] M.E. Vanegas, R. Quijada, S.P. Nunes, W. Yave, Syndiotactic polypropylene copolymer membranes and their performance for oxygen separation, *Journal of Membrane Science* 348(1-2) (2010) 34-40. <https://doi.org/10.1016/j.memsci.2009.10.033>.
- [123] W. Yave, A. Car, S.S. Funari, S.P. Nunes, K.-V. Peinemann, CO₂-philic polymer membrane with extremely high separation performance, *Macromolecules* 43(1) (2010) 326-333. <https://doi.org/10.1021/ma901950u>.
- [124] M. Jithunsa, K. Tashiro, S.P. Nunes, S. Chirachanchai, Poly (acrylic acid-co-4-vinylimidazole)/Sulfonated poly (ether ether ketone) blend membranes: A role of polymer chain with proton acceptor and donor for enhancing proton transfer in anhydrous system, *International Journal of Hydrogen Energy* 36(16) (2011) 10384-10391.
- [125] S.P. Nunes, A.R. Behzad, B. Hooghan, R. Sougrat, M. Karunakaran, N. Pradeep, U. Vainio, K.-V. Peinemann, Switchable pH-responsive polymeric membranes prepared via block copolymer micelle assembly, *ACS Nano* 5(5) (2011) 3516-3522. <https://doi.org/10.1021/nn200484v>.
- [126] S.P. Nunes, M. Karunakaran, N. Pradeep, A.R. Behzad, B. Hooghan, R. Sougrat, H. He, K.-V. Peinemann, From micelle supramolecular assemblies in selective solvents to isoporous membranes, *Langmuir* 27(16) (2011) 10184-10190.

- [127] B.P. Tripathi, M. Schieda, V.K. Shahi, S.P. Nunes, Nanostructured membranes and electrodes with sulfonic acid functionalized carbon nanotubes, *Journal of Power Sources* 196(3) (2011) 911-919. <https://doi.org/10.1016/j.jpowsour.2010.08.110>.
- [128] R.M. Dorin, D.b.S. Marques, H. Sai, U. Vainio, W.A. Phillip, K.-V. Peinemann, S.P. Nunes, U. Wiesner, Solution small-angle X-ray scattering as a screening and predictive tool in the fabrication of asymmetric block copolymer membranes, *ACS Macro Letters* 1(5) (2012) 614-617.
- [129] H. Maab, L. Francis, A. Al-Saadi, C. Aubry, N. Ghaffour, G. Amy, S.P. Nunes, Synthesis and fabrication of nanostructured hydrophobic polyazole membranes for low-energy water recovery, *Journal of Membrane Science* 423 (2012) 11-19.
- [130] L. Francis, H. Maab, A. AlSaadi, S. Nunes, N. Ghaffour, G.L. Amy, Fabrication of electrospun nanofibrous membranes for membrane distillation application, *Desalination and Water Treatment* 51(7-9) (2013) 1337-1343.
- [131] R. Hilke, N. Pradeep, P. Madhavan, U. Vainio, A.R. Behzad, R. Sougrat, S.P. Nunes, K.-V. Peinemann, Block copolymer hollow fiber membranes with catalytic activity and pH-response, *ACS Applied Materials & Interfaces* 5(15) (2013) 7001-7006.
- [132] H. Maab, A. Al Saadi, L. Francis, S. Livazovic, N. Ghafour, G.L. Amy, S.P. Nunes, Polyazole hollow fiber membranes for direct contact membrane distillation, *Industrial & Engineering Chemistry Research* 52(31) (2013) 10425-10429. <https://doi.org/10.1016/j.memsci.2013.05.038>
- [133] H. Maab, S.P. Nunes, Porous polyoxadiazole membranes for harsh environment, *Journal of Membrane Science* 445 (2013) 127-134.
- [134] P. Madhavan, K.-V. Peinemann, S.P. Nunes, Complexation-tailored morphology of asymmetric block copolymer membranes, *ACS Applied Materials & Interfaces* 5(15) (2013) 7152-7159. <https://doi.org/10.1021/am401497m>.
- [135] L. Malaeb, K.P. Katuri, B.E. Logan, H. Maab, S.P. Nunes, P.E. Saikaly, A hybrid microbial fuel cell membrane bioreactor with a conductive ultrafiltration membrane biocathode for wastewater treatment, *Environmental Science & Technology* 47(20) (2013) 11821-11828. <https://doi.org/10.1021/es4030113>.
- [136] D.S. Marques, U. Vainio, N.M. Chaparro, V.M. Calo, A.R. Bezahd, J.W. Pitera, K.-V. Peinemann, S.P. Nunes, Self-assembly in casting solutions of block copolymer membranes, *Soft Matter* 9(23) (2013) 5557-5564. <https://doi.org/10.1039/c3sm27475f>.
- [137] S.P. Nunes, A.R. Behzad, K.-V. Peinemann, Self-assembled block copolymer membranes: From basic research to large-scale manufacturing, *Journal of Materials Research* 28(19) (2013) 2661-2665.
- [138] S.P. Nunes, A. Car, From charge-mosaic to micelle self-assembly: block copolymer membranes in the last 40 years, *Industrial & Engineering Chemistry Research* 52(3) (2013) 993-1003.
- [139] X. Qiu, H. Yu, M. Karunakaran, N. Pradeep, S.P. Nunes, K.-V. Peinemann, Selective separation of similarly sized proteins with tunable nanoporous block copolymer membranes, *ACS Nano* 7(1) (2013) 768-776. <https://doi.org/10.1021/nn305073e>.
- [140] L. Francis, N. Ghaffour, A.S. Alsaadi, S.P. Nunes, G.L. Amy, PVDF hollow fiber and nanofiber membranes for fresh water reclamation using membrane distillation, *Journal of Materials Science* 49 (2014) 2045-2053.
- [141] L. Francis, N. Ghaffour, A.S. Alsaadi, S.P. Nunes, G.L. Amy, Performance evaluation of the DCMD desalination process under bench scale and large scale module operating conditions, *Journal of Membrane Science* 455 (2014) 103-112.
- [142] R. Hilke, N. Pradeep, A.R. Behzad, S.P. Nunes, K.-V. Peinemann, Block copolymer/homopolymer dual-layer hollow fiber membranes, *Journal of Membrane Science* 472 (2014) 39-44. <https://doi.org/10.1016/j.memsci.2014.08.031>.
- [143] T.A. Jalal, I.D.C. Prada, R. Tayouo, E.P. Giannelis, S.P. Nunes, Reactive phase inversion for manufacture of asymmetric poly (ether imide sulfone) membranes, *Reactive and Functional Polymers* 85 (2014) 1-10.

- [144] M. Karunakaran, S.P. Nunes, X. Qiu, H. Yu, K.-V. Peinemann, Isoporous PS-b-PEO ultrafiltration membranes via self-assembly and water-induced phase separation, *Journal of Membrane Science* 453 (2014) 471-477. <https://doi.org/10.1016/j.memsci.2013.11.015>.
- [145] P. Madhavan, P.-Y. Hong, R. Sougrat, S.P. Nunes, Silver-enhanced block copolymer membranes with biocidal activity, *ACS Applied Materials & Interfaces* 6(21) (2014) 18497-18501. <https://doi.org/10.1021/am505594c>.
- [146] D.S. Marques, R.M. Dorin, U. Wiesner, D.-M. Smilgies, A.R. Behzad, U. Vainio, K.-V. Peinemann, S.P. Nunes, Time-resolved GISAXS and cryo-microscopy characterization of block copolymer membrane formation, *Polymer* 55(6) (2014) 1327-1332. <https://doi.org/10.1016/j.polymer.2013.11.010>.
- [147] N. Moreno, S. Nunes, V.M. Calo, Restrictions in model reduction for polymer chain models in dissipative particle dynamics, *Procedia Computer Science* 29 (2014) 728-739. <https://doi.org/10.1016/j.procs.2014.05.065>.
- [148] S. Munirasu, S.P. Nunes, Porous asymmetric SiO₂-g-PMMA nanoparticles produced by phase inversion, *Journal of Materials Science* 49 (2014) 7399-7407. <https://doi.org/10.1007/s10853-014-8434-6>.
- [149] Y. Treekamol, M. Schieda, L. Robitaille, S.M. MacKinnon, A. Mokrini, Z. Shi, S. Holdcroft, K. Schulte, S.P. Nunes, Nafion®/ODF-silica composite membranes for medium temperature proton exchange membrane fuel cells, *Journal of Power Sources* 246 (2014) 950-959. <https://doi.org/10.1016/j.jpowsour.2013.01.178>.
- [150] H. Yu, X. Qiu, S.P. Nunes, K.-V. Peinemann, Biomimetic block copolymer particles with gated nanopores and ultrahigh protein sorption capacity, *Nature Communications* 5(1) (2014) 4110. <https://doi.org/10.1038/ncomms5110>.
- [151] H. Yu, X. Qiu, S.P. Nunes, K.V. Peinemann, Self-assembled isoporous block copolymer membranes with tuned pore sizes, *Angewandte Chemie International Edition* 53(38) (2014) 10072-10076. <https://doi.org/10.1002/anie.201404491>.
- [152] S. Chisca, P. Duong, A.-H. Emwas, R. Sougrat, S.P. Nunes, Crosslinked copolyazoles with a zwitterionic structure for organic solvent resistant membranes, *Polymer Chemistry* 6(4) (2015) 543-554. <https://doi.org/doi10.1039/c4py01293c>.
- [153] P.H. Duong, S. Chisca, P.-Y. Hong, H. Cheng, S.P. Nunes, T.-S. Chung, Hydroxyl functionalized polytriazole-co-polyoxadiazole as substrates for forward osmosis membranes, *ACS Applied Materials & Interfaces* 7(7) (2015) 3960-3973. <https://doi.org/10.1021/am508387d>.
- [154] T.A. Jalal, N.S. Bettahalli, N.L. Le, S.P. Nunes, Hydrophobic Hyflon AD/Poly (vinylidene fluoride) membranes for butanol dehydration via pervaporation, *Industrial & Engineering Chemistry Research* 54(44) (2015) 11180-11187. <https://doi.org/10.1021/acs.iecr.5b02754>.
- [155] S. Livazovic, Z. Li, A.R. Behzad, K.-V. Peinemann, S.P. Nunes, Cellulose multilayer membranes manufacture with ionic liquid, *Journal of Membrane Science* 490 (2015) 282-293. <https://doi.org/10.1016/j.memsci.2015.05.009>.
- [156] P. Madhavan, R. Sougrat, A.R. Behzad, K.-V. Peinemann, S.P. Nunes, Ionic liquids as self-assembly guide for the formation of nanostructured block copolymer membranes, *Journal of Membrane Science* 492 (2015) 568-577. <https://doi.org/10.1016/j.memsci.2015.04.036>.
- [157] N. Moreno, S.P. Nunes, V.M. Calo, Consistent model reduction of polymer chains in solution in dissipative particle dynamics: Model description, *Computer Physics Communications* 196 (2015) 255-266. <https://doi.org/10.1016/j.cpc.2015.06.012>.
- [158] N. Moreno, S.P. Nunes, K.-V. Peinemann, V.M. Calo, Topology and shape control for assemblies of block copolymer blends in solution, *Macromolecules* 48(21) (2015) 8036-8044. <https://doi.org/10.1021/acs.macromol.5b01891>.
- [159] M. Shi, G. Printsypar, O. Iliev, V.M. Calo, G.L. Amy, S.P. Nunes, Water flow prediction for membranes using 3D simulations with detailed morphology, *Journal of Membrane Science* 487 (2015) 19-31. <https://doi.org/10.1016/j.memsci.2015.03.036>.

- [160] Y. Xie, R. Sougrat, S.P. Nunes, Synthesis and characterization of polystyrene coated iron oxide nanoparticles and asymmetric assemblies by phase inversion, *Journal of Applied Polymer Science* 132(5) (2015). <https://doi.org/10.1002/app.41368>
- [161] Y. Xie, R. Tayouo, S.P. Nunes, Low fouling polysulfone ultrafiltration membrane via click chemistry, *Journal of Applied Polymer Science* 132(21) (2015). <https://doi.org/10.1002/app.41549>.
- [162] H. Yu, X. Qiu, N. Moreno, Z. Ma, V.M. Calo, S.P. Nunes, K.V. Peinemann, Self-assembled asymmetric block copolymer membranes: bridging the gap from ultra-to nanofiltration, *Angewandte Chemie* 127(47) (2015) 14143-14147. <https://doi.org/10.1002/anie.201505663>.
- [163] N.S. Bettahalli, R. Lefers, N. Fedoroff, T. Leiknes, S.P. Nunes, Triple-bore hollow fiber membrane contactor for liquid desiccant based air dehumidification, *Journal of Membrane Science* 514 (2016) 135-142. <https://doi.org/10.1016/j.memsci.2016.04.059>.
- [164] H. Cheng, Y. Xie, L.F. Villalobos, L. Song, K.-V. Peinemann, S. Nunes, P.-Y. Hong, Antibiofilm effect enhanced by modification of 1, 2, 3-triazole and palladium nanoparticles on polysulfone membranes, *Scientific Reports* 6(1) (2016) 24289. <https://doi.org/10.1038/srep24289>.
- [165] P.H. Duong, S.P. Nunes, T.-S. Chung, Dual-skinned polyamide/poly (vinylidene fluoride)/cellulose acetate membranes with embedded woven, *Journal of Membrane Science* 520 (2016) 840-849. <https://doi.org/10.1016/j.memsci.2016.08.047>.
- [166] K.P. Katuri, N.M.S. Bettahalli, X. Wang, G. Matar, S. Chisca, S.P. Nunes, P. Saikaly, A Microfiltration Polymer-Based Hollow-Fiber Cathode as a Promising Advanced Material for Simultaneous Recovery of Energy and Water, *Advanced Materials* 28 (2016) 9504-9511. <https://doi.org/10.1002/adma.201603074>.
- [167] D. Kim, N.L. Le, S.P. Nunes, The effects of a co-solvent on fabrication of cellulose acetate membranes from solutions in 1-ethyl-3-methylimidazolium acetate, *Journal of Membrane Science* 520 (2016) 540-549. <https://doi.org/10.1016/j.memsci.2016.08.015>.
- [168] D. Kim, N. Moreno, S.P. Nunes, Fabrication of polyacrylonitrile hollow fiber membranes from ionic liquid solutions, *Polymer Chemistry* 7(1) (2016) 113-124. <https://doi.org/10.1039/c5py01344e>.
- [169] D. Kim, O.R. Salazar, S.P. Nunes, Membrane manufacture for peptide separation, *Green Chemistry* 18(19) (2016) 5151-5159. <https://doi.org/10.1039/c6gc01259k>.
- [170] N.L. Le, N. Bettahalli, S.P. Nunes, T.-S. Chung, Outer-selective thin film composite (TFC) hollow fiber membranes for osmotic power generation, *Journal of Membrane Science* 505 (2016) 157-166. <https://doi.org/10.1016/j.memsci.2016.01.027>.
- [171] N.L. Le, S.P. Nunes, Materials and membrane technologies for water and energy sustainability, *Sustainable Materials and Technologies* 7 (2016) 1-28. <https://doi.org/10.1016/j.susmat.2016.02.001>.
- [172] R. Lefers, N.M.S. Bettahalli, S.P. Nunes, N. Fedoroff, P.A. Davies, T. Leiknes, Liquid desiccant dehumidification and regeneration process to meet cooling and freshwater needs of desert greenhouses, *Desalination and Water Treatment* 57(48-49) (2016) 23430-23442. <https://doi.org/10.1080/19443994.2016.1173383>.
- [173] H. Lu, Z. Xue, P. Saikaly, S.P. Nunes, T.R. Bluver, W.-T. Liu, Membrane biofouling in a wastewater nitrification reactor: Microbial succession from autotrophic colonization to heterotrophic domination, *Water Research* 88 (2016) 337-345. <https://doi.org/10.1016/j.watres.2015.10.013>.
- [174] P. Madhavan, B. Sutisna, R. Sougrat, S.P. Nunes, Photoresponsive nanostructured membranes, *RSC Advances* 6(79) (2016) 75594-75601. <https://doi.org/10.1039/c6ra14317b>.
- [175] G. Matar, G. Gonzalez-Gil, H. Maab, S. Nunes, P. Le-Clech, J. Vrouwenvelder, P.E. Saikaly, Temporal changes in extracellular polymeric substances on hydrophobic and hydrophilic membrane surfaces in a submerged membrane bioreactor, *Water Research* 95 (2016) 27-38. <https://doi.org/10.1016/j.watres.2016.02.064>.
- [176] S.P. Nunes, Block copolymer membranes for aqueous solution applications, *Macromolecules* 49(8) (2016) 2905-2916. <https://doi.org/10.1021/acs.macromol.5b02579>.

- [177] Y.K. Ong, G.M. Shi, N.L. Le, Y.P. Tang, J. Zuo, S.P. Nunes, T.-S. Chung, Recent membrane development for pervaporation processes, *Progress in Polymer Science* 57 (2016) 1-31. <https://doi.org/10.1016/j.progpolymsci.2016.02.003>.
- [178] M. Shi, G. Printsypar, P.H. Duong, V.M. Calo, O. Iliev, S.P. Nunes, 3D morphology design for forward osmosis, *Journal of Membrane Science* 516 (2016) 172-184. <https://doi.org/10.1016/j.memsci.2016.05.061>.
- [179] G. Sundaramoorthi, M. Hadwiger, M. Ben-Romdhane, A.R. Behzad, P. Madhavan, S.P. Nunes, 3D membrane imaging and porosity visualization, *Industrial & Engineering Chemistry Research* 55(12) (2016) 3689-3695. <https://doi.org/10.1021/acs.iecr.6b00387>.
- [180] B. Sutisna, G. Polymeropoulos, V. Musteata, K.-V. Peinemann, A. Avgeropoulos, D.-M. Smilgies, N. Hadjichristidis, S.P. Nunes, Design of block copolymer membranes using segregation strength trend lines, *Molecular Systems Design & Engineering* 1(3) (2016) 278-289. <https://doi.org/10.1039/c6me00033a>.
- [181] B. Sutisna, G. Polymeropoulos, E. Mygiakis, V. Musteata, K.-V. Peinemann, D.-M. Smilgies, N. Hadjichristidis, S.P. Nunes, Artificial membranes with selective nanochannels for protein transport, *Polymer Chemistry* 7(40) (2016) 6189-6201. <https://doi.org/10.1039/c6py01401a>.
- [182] L.F. Villalobos, S. Chisca, H. Cheng, P.-Y. Hong, S. Nunes, K.-V. Peinemann, In situ growth of biocidal AgCl crystals in the top layer of asymmetric polytriazole membranes, *RSC Advances* 6(52) (2016) 46696-46701. <https://doi.org/10.1039/c6ra08090a>.
- [183] L.F. Villalobos, Y. Xie, S.P. Nunes, K.V. Peinemann, Polymer and membrane design for low temperature catalytic reactions, *Macromolecular rapid communications* 37(8) (2016) 700-704. <https://doi.org/10.1002/marc.201500735>.
- [184] Y. Xie, N. Moreno, V.M. Calo, H. Cheng, P.-Y. Hong, R. Sougrat, A.R. Behzad, R. Tayouo, S.P. Nunes, Synthesis of highly porous poly (tert-butyl acrylate)-b-polysulfone-b-poly (tert-butyl acrylate) asymmetric membranes, *Polymer Chemistry* 7(18) (2016) 3076-3089. <https://doi.org/10.1039/c6py00215c>.
- [185] H. Yu, X. Qiu, A.R. Behzad, V. Musteata, D.-M. Smilgies, S.P. Nunes, K.-V. Peinemann, Asymmetric block copolymer membranes with ultrahigh porosity and hierarchical pore structure by plain solvent evaporation, *Chemical Communications* 52(81) (2016) 12064-12067. <https://doi.org/10.1039/c6cc06402g>.
- [186] S. Al-Gharabli, M.O. Mavukkandy, J. Kujawa, S.P. Nunes, H.A. Arafat, Activation of PVDF membranes through facile hydroxylation of the polymeric dope, *Journal of Materials Research* 32(22) (2017) 4219-4231. <https://doi.org/10.1557/jmr.2017.403>.
- [187] S. Chisca, G. Falca, V.E. Musteata, C. Boi, S.P. Nunes, Crosslinked polytriazole membranes for organophilic filtration, *Journal of Membrane Science* 528 (2017) 264-272. <https://doi.org/10.1016/j.memsci.2016.12.060>.
- [188] S. Chisca, M. Torsello, M. Avanzato, Y. Xie, C. Boi, S.P. Nunes, Highly porous polytriazole ion exchange membranes cast from solutions in non-toxic cosolvents, *Polymer* 126 (2017) 446-454. <https://doi.org/10.1016/j.polymer.2017.04.002>.
- [189] P.H. Duong, P.Y. Hong, V. Musteata, K.V. Peinemann, S.P. Nunes, Thin film polyamide membranes with photoresponsive antibacterial activity, *Chemistry Select* 2(22) (2017) 6612-6616.
- [190] P.H. Duong, J. Zuo, S.P. Nunes, Dendrimeric thin-film composite membranes: free volume, roughness, and fouling resistance, *Industrial & Engineering Chemistry Research* 56(48) (2017) 14337-14349.
- [191] D. Kim, S.P. Nunes, Poly (ether imide sulfone) membranes from solutions in ionic liquids, *Industrial & Engineering Chemistry Research* 56(50) (2017) 14914-14922.
- [192] D. Kim, H. Vovusha, U. Schwingenschlöggl, S.P. Nunes, Polyethersulfone flat sheet and hollow fiber membranes from solutions in ionic liquids, *Journal of Membrane Science* 539 (2017) 161-171.
- [193] N.L. Le, D. Kim, S.P. Nunes, Evolution of regular geometrical shapes in fiber lumens, *Scientific Reports* 7(1) (2017) 9171.

- [194] N.L. Le, S.P. Nunes, Ethylene glycol as bore fluid for hollow fiber membrane preparation, *Journal of Membrane Science* 533 (2017) 171-178.
- [195] N.L. Le, M. Quilitzsch, H. Cheng, P.-Y. Hong, M. Ulbricht, S.P. Nunes, T.-S. Chung, Hollow fiber membrane lumen modified by polyzwitterionic grafting, *Journal of Membrane Science* 522 (2017) 1-11. <https://doi.org/10.1016/j.memsci.2016.08.038>.
- [196] N.L. Le, M. Ulbricht, S.P. Nunes, How do polyethylene glycol and poly (sulfobetaine) hydrogel layers on ultrafiltration membranes minimize fouling and stay stable in cleaning chemicals?, *Industrial & Engineering Chemistry Research* 56(23) (2017) 6785-6795.
- [197] D.K. Mahalingam, D. Kim, S.P. Nunes, Polyethersulfone/Graphene Oxide Ultrafiltration Membranes from Solutions in Ionic Liquid, *MRS Advances* 2(46) (2017) 2505-2511.
- [198] B. Pulido, C. Waldron, M. Zolotukhin, S.P. Nunes, Porous polymeric membranes with thermal and solvent resistance, *Journal of Membrane Science* 539 (2017) 187-196.
- [199] Y. Xie, B. Sutisna, S.P. Nunes, Membranes prepared by self-assembly and chelation assisted phase inversion, *Chemical Communications* 53(49) (2017) 6609-6612.
- [200] M. Arslan, T.C. Bicak, B.A. Pulido, S.P. Nunes, Y. Yagci, Post modification of acetylene functional poly (oxindole biphenylene) by photoinduced CuAAC, *European Polymer Journal* 100 (2018) 298-307.
- [201] V.M. Calo, O. Iliev, S.P. Nunes, G. Printsypar, M. Shi, Cell-element simulations to optimize the performance of osmotic processes in porous membranes, *Computers & Mathematics with Applications* 76(2) (2018) 361-376.
- [202] S. Chisca, V.-E. Musteata, R. Sougrat, A.R. Behzad, S.P. Nunes, Artificial 3D hierarchical and isotropic porous polymeric materials, *Science Advances* 4(5) (2018) eaat0713.
- [203] C. Cuevas, D. Kim, K.P. Katuri, P. Saikaly, S.P. Nunes, Electrochemically active polymeric hollow fibers based on poly (ether-b-amide)/carbon nanotubes, *Journal of Membrane Science* 545 (2018) 323-328.
- [204] P.H. Duong, D.H. Anjum, K.-V. Peinemann, S.P. Nunes, Thin porphyrin composite membranes with enhanced organic solvent transport, *Journal of Membrane Science* 563 (2018) 684-693.
- [205] P.H. Duong, K. Daumann, P.-Y. Hong, M. Ulbricht, S.P. Nunes, Interfacial polymerization of zwitterionic building blocks for high-flux nanofiltration membranes, *Langmuir* 35(5) (2018) 1284-1293.
- [206] D. Kim, S. Livazovic, G. Falca, S.P. Nunes, Oil–water separation using membranes manufactured from cellulose/ionic liquid solutions, *ACS Sustainable Chemistry & Engineering* 7(6) (2018) 5649-5659.
- [207] R. Lefers, N.S. Bettahalli, N. Fedoroff, S.P. Nunes, T. Leiknes, Vacuum membrane distillation of liquid desiccants utilizing hollow fiber membranes, *Separation and Purification Technology* 199 (2018) 57-63.
- [208] D.K. Mahalingam, S. Wang, S.P. Nunes, Graphene oxide liquid crystal membranes in protic ionic liquid for nanofiltration, *ACS Applied Nano Materials* 1(9) (2018) 4661-4670.
- [209] V. Musteata, B. Sutisna, G. Polymeropoulos, A. Avgeropoulos, F. Meneau, K.-V. Peinemann, N. Hadjichristidis, S.P. Nunes, Self-assembly of polystyrene-b-poly (2-vinylpyridine)-b-poly (ethylene oxide) triblock terpolymers, *European Polymer Journal* 100 (2018) 121-131.
- [210] V.-E. Musteata, S. Chisca, F. Meneau, D.-M. Smilgies, S.P. Nunes, Carboxyl-functionalized nanochannels based on block copolymer hierarchical structures, *Faraday Discussions* 209 (2018) 303-314.
- [211] B. Pulido, S. Chisca, S.P. Nunes, Solvent and thermal resistant ultrafiltration membranes from alkyne-functionalized high-performance polymers, *Journal of Membrane Science* 564 (2018) 361-371.
- [212] B. Sutisna, P. Bilalis, V. Musteata, D.-M. Smilgies, K.-V. Peinemann, N. Hadjichristidis, S.P. Nunes, Self-assembled membranes with featherlike and lamellar morphologies containing α -helical polypeptides, *Macromolecules* 51(20) (2018) 8174-8187.

- [213] B. Sutisna, G. Polymeropoulos, V. Musteata, R. Sougrat, D.M. Smilgies, K.V. Peinemann, N. Hadjichristidis, S.P. Nunes, Functionalized nanochannels from self-assembled and photomodified poly (Styrene-*b*-Butadiene-*b*-Styrene), *Small* 14(18) (2018) 1701885.
- [214] J. Xu, N.S. Bettahalli, S. Chisca, M.K. Khalid, N. Ghaffour, R. Vilagines, S.P. Nunes, Polyoxadiazole hollow fibers for produced water treatment by direct contact membrane distillation, *Desalination* 432 (2018) 32-39.
- [215] F.H. Akhtar, H. Vovushua, L.F. Villalobos, R. Shevate, M. Kumar, S.P. Nunes, U. Schwingenschlögl, K.-V. Peinemann, Highways for water molecules: Interplay between nanostructure and water vapor transport in block copolymer membranes, *Journal of Membrane Science* 572 (2019) 641-649.
- [216] J. Alvarez, G. Saudino, V. Musteata, P. Madhavan, A. Genovese, A.R. Behzad, R. Sougrat, C. Boi, K.-V. Peinemann, S.P. Nunes, 3D analysis of ordered porous polymeric particles using complementary electron microscopy methods, *Scientific Reports* 9(1) (2019) 13987.
- [217] S.L. Aristizábal, S. Chisca, B.A. Pulido, S.P. Nunes, Preparation of PEEK membranes with excellent stability using common organic solvents, *Industrial & Engineering Chemistry Research* 59(12) (2019) 5218-5226.
- [218] G. Falca, V.-E. Musteata, A.R. Behzad, S. Chisca, S.P. Nunes, Cellulose hollow fibers for organic resistant nanofiltration, *Journal of Membrane Science* 586 (2019) 151-161.
- [219] T. Huang, G. Sheng, P. Manchanda, A.H. Emwas, Z. Lai, S.P. Nunes, K.-V. Peinemann, Cyclodextrin polymer networks decorated with subnanometer metal nanoparticles for high-performance low-temperature catalysis, *Science Advances* 5(11) (2019) eaax6976. <https://doi.org/10.1126/sciadv.aax697>.
- [220] N.L. Le, B.A. Pulido, S.P. Nunes, Fabrication of Hollow Fiber Membranes Using Highly Viscous Liquids as Internal Coagulants, *Industrial & Engineering Chemistry Research* 58(49) (2019) 22343-22349. <https://doi.org/10.1021/acs.iecr.9b05136>.
- [221] R.M. Lefers, N.S. Bettahalli, N.V. Fedoroff, N. Ghaffour, P.A. Davies, S.P. Nunes, T. Leiknes, Hollow fibre membrane-based liquid desiccant humidity control for controlled environment agriculture, *Biosystems Engineering* 183 (2019) 47-57. <https://doi.org/doi.org/10.1016/j.biosystemseng.2019.04.010>.
- [222] D.K. Mahalingam, S. Wang, S.P. Nunes, Stable graphene oxide cross-linked membranes for organic solvent nanofiltration, *Industrial & Engineering Chemistry Research* 58(51) (2019) 23106-23113. <https://doi.org/10.1021/acs.iecr.9b05169>.
- [223] P. Manchanda, S. Chisca, L. Upadhyaya, V.-E. Musteata, M. Carrington, S.P. Nunes, Diffusion-induced in situ growth of covalent organic frameworks for composite membranes, *Journal of Materials Chemistry A* 7(45) (2019) 25802-25807. <https://doi.org/10.1039/c9ta11191c>.
- [224] B.A. Pulido, O.S. Habboub, S.L. Aristizabal, G. Szekely, S.P. Nunes, Recycled poly (ethylene terephthalate) for high temperature solvent resistant membranes, *ACS Applied Polymer Materials* 1(9) (2019) 2379-2387. <https://doi.org/10.1021/acsapm.9b00493>.
- [225] B. Sutisna, V. Musteata, B. Pulido, T. Puspasari, D.-M. Smilgies, N. Hadjichristidis, S.P. Nunes, High flux membranes, based on self-assembled and H-bond linked triblock copolymer nanospheres, *Journal of Membrane Science* 585 (2019) 10-18. <https://doi.org/10.1016/j.memsci.2019.04.045>.
- [226] S. Wang, D. Mahalingam, B. Sutisna, S.P. Nunes, 2D-dual-spacing channel membranes for high performance organic solvent nanofiltration, *Journal of Materials Chemistry A* 7(19) (2019) 11673-11682. <https://doi.org/10.1039/c8ta10872b>.
- [227] S. Wustoni, S. Wang, J.R. Alvarez, T.C. Hidalgo, S.P. Nunes, S. Inal, An organic electrochemical transistor integrated with a molecularly selective isoporous membrane for amyloid- β detection, *Biosensors and Bioelectronics* 143 (2019) 111561. <https://doi.org/10.1016/j.bios.2019.111561>.
- [228] M. Arslan, B.A. Pulido, S.P. Nunes, Y. Yagci, Functionalization of Poly (oxindole biphenylene) membranes by photoinduced thiol-yne click chemistry, *Journal of Membrane Science* 598 (2020) 117673. <https://doi.org/10.1016/j.memsci.2019.117673>.

- [229] S. Chisca, T. Marchesi, G. Falca, V.-E. Musteata, T. Huang, E. Abou-Hamad, S.P. Nunes, Organic solvent and thermal resistant polytriazole membranes with enhanced mechanical properties cast from solutions in non-toxic solvents, *Journal of Membrane Science* 597 (2020) 117634. <https://doi.org/10.1016/j.memsci.2019.117634>.
- [230] A.Y. Gebreyohannes, L. Upadhyaya, L.P. Silva, G. Falca, P.J. Carvalho, S.P. Nunes, Hollow fibers with encapsulated green amino acid-based ionic liquids for dehydration, *ACS Sustainable Chemistry & Engineering* 8(48) (2020) 17763-17771. <https://doi.org/10.1021/acssuschemeng.0c06001>.
- [231] T. Huang, B.A. Moosa, P. Hoang, J. Liu, S. Chisca, G. Zhang, M. AlYami, N.M. Khashab, S.P. Nunes, Molecularly-porous ultrathin membranes for highly selective organic solvent nanofiltration, *Nature Communications* 11(1) (2020) 5882. <https://doi.org/10.1038/s41467-020-19404-6>.
- [232] T. Huang, T. Puspasari, S.P. Nunes, K.V. Peinemann, Ultrathin 2D-layered cyclodextrin membranes for high-performance organic solvent nanofiltration, *Advanced Functional Materials* 30(4) (2020) 1906797. <https://doi.org/10.1002/adfm.201906797>.
- [233] J. Liu, S. Wang, T. Huang, P. Manchanda, E. Abou-Hamad, S.P. Nunes, Smart covalent organic networks (CONs) with “on-off-on” light-switchable pores for molecular separation, *Science Advances* 6(34) (2020) eabb3188. <https://doi.org/10.1126/sciadv.abb3188>.
- [234] D.K. Mahalingam, G. Falca, L. Upadhya, E. Abou-Hamad, N. Batra, S. Wang, V. Musteata, P.M. da Costa, S.P. Nunes, Spray-coated graphene oxide hollow fibers for nanofiltration, *Journal of Membrane Science* 606 (2020) 118006. <https://doi.org/10.1016/j.memsci.2020.118006>.
- [235] S.P. Nunes, Can fouling in membranes be ever defeated?, *Current Opinion in Chemical Engineering* 28 (2020) 90-95. <https://doi.org/10.1016/j.coche.2020.03.006>.
- [236] S.P. Nunes, P.Z. Culfaz-Emecen, G.Z. Ramon, T. Visser, G.H. Koops, W. Jin, M. Ulbricht, Thinking the future of membranes: Perspectives for advanced and new membrane materials and manufacturing processes, *Journal of Membrane Science* 598 (2020) 117761. <https://doi.org/10.1016/j.memsci.2019.117761>.
- [237] C. Ong, G. Falca, T. Huang, J. Liu, P. Manchanda, S. Chisca, S.P. Nunes, Green synthesis of thin-film composite membranes for organic solvent nanofiltration, *ACS Sustainable Chemistry & Engineering* 8(31) (2020) 11541-11548. <https://doi.org/10.1021/acssuschemeng.0c02320>.
- [238] A. Sabirova, F. Pisig Jr, N. Rayapuram, H. Hirt, S.P. Nunes, Nanofabrication of isoporous membranes for cell fractionation, *Scientific Reports* 10(1) (2020) 6138. <https://doi.org/10.1038/s41598-020-62937-5>.
- [239] F. Shi, J. Sun, J. Wang, M. Liu, S. Wang, X. Cao, Z. Yan, Y. Li, S.P. Nunes, Exploration of the synergy between 2D nanosheets and a non-2D filler in mixed matrix membranes for gas separation, *Frontiers in Chemistry* 8 (2020) 58. <https://doi.org/10.3389/fchem.2020.00058>.
- [240] F. Shi, Q. Tian, J. Wang, Q. Wang, F. Shi, Y. Li, S.P. Nunes, Carbon quantum dot-enabled tuning of the microphase structures of poly (ether-b-amide) membrane for CO₂ separation, *Industrial & Engineering Chemistry Research* 59(33) (2020) 14960-14969. <https://doi.org/10.1021/acs.iecr.0c03432>.
- [241] M. Sorci, C.C. Woodcock, D.J. Andersen, A.R. Behzad, S. Nunes, J. Plawsky, G. Belfort, Linking microstructure of membranes and performance, *Journal of Membrane Science* 594 (2020) 117419. <https://doi.org/10.1016/j.memsci.2019.117419>.
- [242] F. Topuz, M.A. Abdulhamid, S.P. Nunes, G. Szekely, Hierarchically porous electrospun nanofibrous mats produced from intrinsically microporous fluorinated polyimide for the removal of oils and non-polar solvents, *Environmental Science: Nano* 7(5) (2020) 1365-1372. <https://doi.org/10.1039/d0en00084a>.
- [243] L. Upadhyaya, A.Y. Gebreyohannes, F.H. Akhtar, G. Falca, V. Musteata, D.K. Mahalingam, R. Almansoury, K.C. Ng, S.P. Nunes, NEXART[™]-coated hollow fibers for air dehumidification, *Journal of Membrane Science* 614 (2020) 118450. <https://doi.org/10.1016/j.memsci.2020.118450>.

- [244] S. Wang, J. Liu, B. Pulido, Y. Li, D. Mahalingam, S.P. Nunes, Oriented zeolitic imidazolate framework (ZIF) nanocrystal films for molecular separation membranes, *ACS Applied Nano Materials* 3(4) (2020) 3839-3846. <https://doi.org/10.1021/acsanm.0c00570>.
- [245] S. Wang, L. Yang, G. He, B. Shi, Y. Li, H. Wu, R. Zhang, S. Nunes, Z. Jiang, Two-dimensional nanochannel membranes for molecular and ionic separations, *Chemical Society Reviews* 49(4) (2020) 1071-1089. <https://doi.org/10.1039/c9cs00751b>.
- [246] Z. Yan, M. Zhang, F. Shi, B. Zhu, M. Liu, S. Wang, Y. Li, S.P. Nunes, Enhanced CO₂ separation in membranes with anion-cation dual pathways, *Journal of CO₂ Utilization* 38 (2020) 355-365. <https://doi.org/10.1016/j.jcou.2020.02.016>.
- [247] F. Alduraiei, P. Manchanda, B. Pulido, G. Szekely, S.P. Nunes, Fluorinated thin-film composite membranes for nonpolar organic solvent nanofiltration, *Separation and Purification Technology* 279 (2021) 119777. <https://doi.org/10.1016/j.seppur.2021.119777>.
- [248] F. Algarni, V.E. Musteata, G. Falca, S. Chisca, N. Hadjichristidis, S.P. Nunes, Thermo-responsive membranes from blends of PVDF and PNIPAM-b-PVDF block copolymers with linear and star architectures, *Macromolecules* 54(21) (2021) 10235-10250. <https://doi.org/10.1021/acs.macromol.1c01372>.
- [249] A.S. Almansouri, L. Upadhyaya, S.P. Nunes, K.N. Salama, J. Kosel, An assistive magnetic skin system: Enabling technology for quadriplegics, *Advanced Engineering Materials* 23(1) (2021) 2000944. <https://doi.org/10.1002/adem.202000944>.
- [250] S.L. Aristizábal, O.S. Habboub, B.A. Pulido, E. Cetina-Mancilla, L.I. Olvera, M. Forster, S.P. Nunes, U. Scherf, M.G. Zolotukhin, One-step, room temperature synthesis of well-defined, organo-soluble multifunctional aromatic polyimides, *Macromolecules* 54(23) (2021) 10870-10882. <https://doi.org/10.1021/acs.macromol.1c01768>.
- [251] M. Di Vincenzo, A. Tiraferri, V.-E. Musteata, S. Chisca, M. Deleanu, F. Ricceri, D. Cot, S.P. Nunes, M. Barboiu, Tunable membranes incorporating artificial water channels for high-performance brackish/low-salinity water reverse osmosis desalination, *Proceedings of the National Academy of Sciences* 118(37) (2021) e2022200118. <https://doi.org/10.1073/pnas.2022200118>.
- [252] M. Di Vincenzo, A. Tiraferri, V.-E. Musteata, S. Chisca, R. Sougrat, L.-B. Huang, S.P. Nunes, M. Barboiu, Biomimetic artificial water channel membranes for enhanced desalination, *Nature Nanotechnology* 16(2) (2021) 190-196. <https://doi.org/10.1038/s41565-020-00796-x>.
- [253] R. Esposito, V. Musteata, S. Chisca, S.P. Nunes, Rheology of Polytriazole/ZIF-8 Solutions and Dynamics of Mixed-Matrix Composite Films, *ACS Applied Polymer Materials* 3(12) (2021) 6045-6055. <https://doi.org/10.1021/acsapm.1c00501>.
- [254] G. Falca, V.E. Musteata, S. Chisca, M.N. Hedhili, C. Ong, S.P. Nunes, Naturally extracted hydrophobic solvent and self-assembly in interfacial polymerization, *ACS Applied Materials & Interfaces* 13(37) (2021) 44824-44832. <https://doi.org/10.1021/acsami.1c07584>.
- [255] A.Y. Gebreyohannes, T. Geens, A. Kubarev, M. Roefsaers, W. Naessens, T. Swusten, T. Verbiest, I. Nopens, S.P. Nunes, I. Vankelecom, Fluorescence-assisted real-time study of magnetically immobilized enzyme stability in a crossflow membrane bioreactor, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 610 (2021) 125687. <https://doi.org/10.1016/j.colsurfa.2020.125687>.
- [256] T. Huang, M. Alyami, N.M. Kashab, S.P. Nunes, Engineering membranes with macrocycles for precise molecular separations, *Journal of Materials Chemistry A* 9(34) (2021) 18102-18128. <https://doi.org/10.1039/d1ta02982g>.
- [257] D. Kim, S.P. Nunes, Green solvents for membrane manufacture: Recent trends and perspectives, *Current Opinion in Green and Sustainable Chemistry* 28 (2021) 100427. <https://doi.org/10.1016/j.cogsc.2020.100427>.
- [258] A. Koklu, S. Wustoni, V.-E. Musteata, D. Ohayon, M. Moser, I. McCulloch, S.P. Nunes, S. Inal, Microfluidic integrated organic electrochemical transistor with a nanoporous membrane for

amyloid- β detection, ACS Nano 15(5) (2021) 8130-8141. <https://doi.org/10.1021/acsnano.0c09893>.

[259] N.L. Le, P.H. Duong, B.A. Pulido, S.P. Nunes, Zwitterionic triamine monomer for the fabrication of thin-film composite membranes, Industrial & Engineering Chemistry Research 60(1) (2021) 583-592. <https://doi.org/10.1021/acs.iecr.0c04738>.

[260] J.W. Maina, J.M. Pringle, J.M. Razal, S. Nunes, L. Vega, F. Gallucci, L.F. Dumée, Strategies for integrated capture and conversion of CO₂ from dilute flue gases and the atmosphere, ChemSusChem 14(8) (2021) 1805-1820. <https://doi.org/10.1002/cssc.202100010>.

[261] G.K. Matar, M. Ali, S. Bagchi, S. Nunes, W.-T. Liu, P.E. Saikaly, Relative importance of stochastic assembly process of membrane biofilm increased as biofilm aged, Frontiers in Microbiology 12 (2021) 708531. <https://doi.org/10.3389/fmicb.2021.708531>.

[262] R. Mazzei, A.Y. Gebreyohannes, E. Papaioannou, S.P. Nunes, I.F. Vankelecom, L. Giorno, Enzyme catalysis coupled with artificial membranes towards process intensification in biorefinery-a review, Bioresource Technology 335 (2021) 125248. <https://doi.org/10.1016/j.biortech.2021.125248>.

[263] S.-H. Park, A. Alammar, Z. Fulop, B.A. Pulido, S.P. Nunes, G. Szekely, Hydrophobic thin film composite nanofiltration membranes derived solely from sustainable sources, Green Chemistry 23(3) (2021) 1175-1184. <https://doi.org/10.1039/d0gc03226c>.

[264] A. Sabirova, S. Wang, G. Falca, P.-Y. Hong, S.P. Nunes, Flexible isoporous air filters for high-efficiency particle capture, Polymer 213 (2021) 123278. <https://doi.org/10.1016/j.polymer.2020.123278>.

[265] Y.W. Sitotaw, N.G. Habtu, A.Y. Gebreyohannes, S.P. Nunes, T. Van Gerven, Ball milling as an important pretreatment technique in lignocellulose biorefineries: a review, Biomass Conversion and Biorefinery (2021) 1-24. <https://doi.org/10.1007/s13399-021-01800-7>.

[266] L. Upadhyaya, M. Semsarilar, D. Quemener, R. Fernández-Pacheco, G. Martinez, I.M. Coelho, S.P. Nunes, J.G. Crespo, R. Mallada, C.A. Portugal, Block copolymer-based magnetic mixed matrix membranes—Effect of magnetic field on protein permeation and membrane fouling, Membranes 11(2) (2021) 105. <https://doi.org/10.3390/membranes11020105>.

[267] D. Zou, S.P. Nunes, I.F. Vankelecom, A. Figoli, Y.M. Lee, Recent advances in polymer membranes employing non-toxic solvents and materials, Green Chemistry 23(24) (2021) 9815-9843. <https://doi.org/10.1039/d1gc03318b>.

[268] F. Alduraiei, S. Kumar, J. Liu, S.P. Nunes, G. Szekely, Rapid fabrication of fluorinated covalent organic polymer membranes for organic solvent nanofiltration, Journal of Membrane Science 648 (2022) 120345. <https://doi.org/10.1016/j.memsci.2022.120345>.

[269] B. Alhazmi, F. Alduraiei, P. Manchanda, S. Chisca, G. Szekely, S.P. Nunes, Naturally Derived Allylated Gallic Acid for Interfacially Polymerized Membranes, ACS Sustainable Chemistry & Engineering 10(41) (2022) 13585-13594. <https://doi.org/10.1021/acssuschemeng.2c02637>.

[270] S.L. Aristizábal, L. Upadhyaya, G. Falca, A.Y. Gebreyohannes, M.O. Aijaz, M.R. Karim, S.P. Nunes, Acid-free fabrication of polyaryletherketone membranes, Journal of Membrane Science 660 (2022) 120798. <https://doi.org/10.1016/j.memsci.2022.120798>.

[271] N.M. Batra, D.K. Mahalingam, P. Daggali, S.P. Nunes, P.M. Costa, Investigating the thermal stability of metallic and non-metallic nanoparticles using a novel graphene oxide-based transmission electron microscopy heating-membrane, Nanotechnology 33(25) (2022) 255701. <https://doi.org/10.1088/1361-6528/ac547c>.

[272] S. Chisca, N.S. Bettahalli, V.E. Musteata, S. Vasylevskyi, M.N. Hedhili, E. Abou-Hamad, M. Karunakaran, G. Genduso, S.P. Nunes, Thermal treatment of hydroxyl functionalized polytriazole and its effect on gas transport: From crosslinking to carbon molecular sieve, Journal of Membrane Science 642 (2022) 119963. <https://doi.org/10.1016/j.memsci.2021.119963>.

[273] S. Chisca, V.-E. Musteata, W. Zhang, S. Vasylevskyi, G. Falca, E. Abou-Hamad, A.-H. Emwas, M. Altunkaya, S.P. Nunes, Polytriazole membranes with ultrathin tunable selective layer for crude oil fractionation, Science 376(6597) (2022) 1105-1110. <https://doi.org/10.1126/science.abm7686>.

- [274] E.E. Ekanem, A. Sabirova, C. Callaghan, J.L. Scott, K.J. Edler, S.P. Nunes, D. Mattia, Production of sub-10 micrometre cellulose microbeads using isoporous membranes, *Journal of Membrane Science Letters* 2(1) (2022) 100024. <https://doi.org/10.1016/j.memlet.2022.100024>.
- [275] S. Li, R. Dong, V.-E. Musteata, J. Kim, N.D. Rangnekar, J. Johnson, B.D. Marshall, S. Chisca, J. Xu, S. Hoy, B. McCool, S.P. Nunes, Z. Jiang, A.G. Livingston, Hydrophobic polyamide nanofilms provide rapid transport for crude oil separation, *Science* 377(6614) (2022) 1555-1561. <https://doi.org/10.1126/science.abq0598>.
- [276] A. Sabirova, C.F. Florica, F. Pisig, A. Syed, U. Buttner, X. Li, S.P. Nunes, Nanoporous membrane fabrication by nanoimprint lithography for nanoparticle sieving, *Nanoscale Advances* 4(4) (2022) 1119-1124. <https://doi.org/10.1039/d1na00812a>.
- [277] S.L. Aristizábal, R. Lively, S.P. Nunes, Solvent and thermally stable polymeric membranes for liquid molecular separations: Recent advances, challenges, and perspectives, *Journal of Membrane Science* (2023) 121972. <https://doi.org/10.1016/j.memsci.2023.121972>.
- [278] S.L. Aristizábal, L. Upadhyaya, M. Tepper, H. Roth, M. Ramírez-Martínez, M. Wessling, S.P. Nunes, Poly (aryl ether ketone) hollow fibers preparation with acid resistant spinnerets, *Journal of Membrane Science* 674 (2023) 121436. <https://doi.org/10.1016/j.memsci.2023.121436>.
- [279] Y.S. Chang, P. Kumari, C.J. Munro, G. Szekely, L.F. Vega, S. Nunes, L.F. Dumée, Plasticization mitigation strategies for gas and liquid filtration membranes-A review, *Journal of Membrane Science* 666 (2023) 121125. <https://doi.org/10.1016/j.memsci.2022.121125>.
- [280] A.Y. Gebreyohannes, S.L. Aristizábal, L. Silva, E.A. Qasem, S. Chisca, L. Upadhyaya, D. Althobaiti, J.A. Coutinho, S.P. Nunes, A lignin-based membrane fabricated with a deep eutectic solvent, *Green Chemistry* 25 (2023) 4769-4780. <https://doi.org/10.1039/d3gc00658a>.
- [281] R. Górecki, C.C. Polo, T.A. Kalile, E.X. Miqueles, Y.R. Tonin, L. Upadhyaya, F. Meneau, S.P. Nunes, Ptychographic X-ray computed tomography of porous membranes with nanoscale resolution, *Communications Materials* 4(1) (2023) 68. <https://doi.org/10.1038/s43246-023-00396-x>.
- [282] T. Huang, Z. Su, K. Hou, J. Zeng, H. Zhou, L. Zhang, S.P. Nunes, Advanced stimuli-responsive membranes for smart separation, *Chemical Society Reviews* 52 (2023) 4173-4207. <https://doi.org/10.1039/d2cs00911k>.
- [283] X. Li, W. Lin, V. Sharma, R. Gorecki, M. Ghosh, B.A. Moosa, S. Aristizabal, S. Hong, N.M. Khashab, S.P. Nunes, Polycage membranes for precise molecular separation and catalysis, *Nature Communications* 14(1) (2023) 3112. <https://doi.org/10.1038/s41467-023-38728-7>.
- [284] K. Maqsood, A. Jamil, A. Ahmed, B. Sutisna, S. Nunes, M. Ulbricht, Blend membranes comprising polyetherimide and polyvinyl acetate with improved methane enrichment performance, *Chemosphere* 321 (2023) 138074. <https://doi.org/10.1016/j.chemosphere.2023.138074>.
- [285] K. Maqsood, A. Jamil, A. Ahmed, B. Sutisna, S. Nunes, M. Ulbricht, Effect of TiO₂ on Thermal, Mechanical, and Gas Separation Performances of Polyetherimide-Polyvinyl Acetate Blend Membranes, *Membranes* 13(8) (2023) 734. <https://doi.org/10.1016/j.chemosphere.2023.138074>.
- [286] M. Ramírez-Martínez, S.L. Aristizábal, G. Szekely, S.P. Nunes, Bio-based solvents for polyolefin dissolution and membrane fabrication: from plastic waste to value-added materials, *Green Chemistry* 25(3) (2023) 966-977. <https://doi.org/10.1039/d2gc03181g>.
- [287] F. Toniolo, H. Bristow, M. Babics, L.M. Loiola, J. Liu, A.A. Said, L. Xu, E. Aydin, T.G. Allen, M. Meneghetti, Efficient and reliable encapsulation for perovskite/silicon tandem solar modules, *Nanoscale* 15(42) (2023) 16984-16991. <https://doi.org/10.1039/d2nr06873g>.
- [288] L.P. Silva, E. Qasem, L. Upadhyaya, R. Esposito, R. Górecki, J.A. Coutinho, P.J. Carvalho, S.P. Nunes, Encapsulated Amino Acid-Based Ionic Liquid for CO₂ Separation Membranes, *ACS Sustainable Chemistry & Engineering* 12 (2024) 300-309. <https://doi.org/10.1021/acssuschemeng.3c05135>.
- [289] L. Upadhyaya, A.Y. Gebreyohannes, M.W. Shahzad, U.T. Syed, S.L. Aristizábal, R. Gorecki, S.P. Nunes, Polyphenol-coated hollow fiber system for energy-efficient dehumidification in air-conditioning, *Journal of Membrane Science* 692 (2024) 122215. <https://doi.org/10.1016/j.memsci.2023.122215>.

- [290] A.C. Zambrano, L.M. Loiola, A. Bukhamsin, R. Gorecki, G. Harrison, V. Mani, S. Fatayer, S.P. Nunes, K.N. Salama, Porous Laser-Scribed Graphene Electrodes Modified with Zwitterionic Moieties: A Strategy for Antibiofouling and Low-Impedance Interfaces, *ACS Applied Materials & Interfaces* (2024). <https://doi.org/10.1021/acsami.3c15849>.
- [291] L. Ranieri, R. Esposito, S.P. Nunes, J.S. Vrouwenvelder, L. Fortunato, Biofilm rigidity, mechanics and composition in seawater desalination pretreatment employing Ultrafiltration and Microfiltration membranes, *Water Research* (2024) 121282. <https://doi.org/10.1016/j.watres.2024.121282>.
- [292] A. Ben-Zvi, U. Taqui, G. Ramon, S.P. Nunes, Alternative materials for interfacial polymerization: recent approaches for greener membranes, *Green Chemistry* 26 (2024) 6237. <https://doi.org/10.1039/d4gc00466c>.
- [293] A. Yudhanto, G. Falca, M. Subah, S.P. Nunes, G. Lubineau, Time-dependent mechanical behavior analysis using Weibull models of cellulose hollow fiber membranes produced by green solvent, *Desalination* 592 (2024) 118168. <https://doi.org/10.1016/j.desal.2024.118168>.
- [294] U.T. Syed, L. Upadhyaya, L. Loiola, A.-H. Emwas, A. Volkov, S.P. Nunes, Thymol: Nature's solvent for sustainable hollow fiber fabrication, *Green Chemistry* (2024). <https://doi.org/10.1039/d4gc01961j>.
- [295] S. Hong, M. Di Vincenzo, A. Tiraferri, E. Bertozzi, R. Górecki, B. Davaasuren, X. Li, S.P. Nunes, Precision ion separation via self-assembled channels, *Nature Communications* 15(1) (2024) 3160. <https://doi.org/10.1038/s41467-024-47083-0>.
- [296] F. Alduraiei, M.A. Abdulhamid, A.Y. Gebreyohannes, L. Peeva, A. Livingston, S.P. Nunes, G. Szekely, Thin-film composite membranes with contorted monomer for high-flux isothermal refining, *Journal of Membrane Science* 700 (2024) 122712. <https://doi.org/10.1016/j.memsci.2024.122712>.
- [297] R. Mazzei, A.Y. Gebreyohannes, T. Poerio, V. Sansone, V. Musteata, L. Upadhyaya, L. Bruno, R. Gorecki, S.P. Nunes, L. Giorno, Dual enzyme compartmentalization in a pH-responsive membrane: A way to tune enzymatic reactions in biocatalytic membranes, *Journal of Membrane Science* 700 (2024) 122708. <https://doi.org/10.1016/j.memsci.2024.122708>.
- [298] S. Chisca, M.N. Hedhili, V.G. Samaras, J. Liu, S.P. Nunes, Sour to sweet crude oil with membranes, *Journal of Membrane Science* 701 (2024) 122716. <https://doi.org/10.1016/j.memsci.2024.122716>.
- [299] N. Moreno, S. Nunes, V. Calo, Morphological Transitions of Block Copolymer Micelles: Implications for Mesoporous Materials Ordering, *Macromolecular Theory and Simulations* (2024) 2400046. <https://doi.org/10.1002/mats.202400046>.
- [300] B. Alhazmi, G. Ignacz, M. Di Vincenzo, M.N. Hedhili, G. Szekely, S.P. Nunes, Ultraselective Macrocyclic Membranes for Pharmaceutical Ingredients Separation in Organic Solvents, *Nature Communications* 15(1) (2024) 7151. <https://doi.org/10.1038/s41467-024-51548-7>.
- [301] E. Qasem, L. Upadhyaya, X. Li, S.P. Nunes, Quaternized poly (phenylene oxide) membranes for natural gas processing, *Journal of Membrane Science* 709 (2024) 123099. <https://doi.org/10.1016/j.memsci.2024.123099>.
- [302] R. Esposito, M.A. Abdulhamid, L. Upadhyaya, A. Volkov, S.P. Nunes, Carboxyl-functionalized polyimide for polar/non-polar organic solvent separation by pervaporation, *Journal of Membrane Science* 713 (2025) 123277. <https://doi.org/10.1016/j.memsci.2024.123277>.
- [303] S. Van Buggenhout, G. Ignacz, S. Caspers, R. Dhondt, M. Lenaerts, N. Lenaerts, S.R. Hosseinabadi, I. Nulens, G. Koeckelberghs, Y. Ren, Open and FAIR data for nanofiltration in organic media: A unified approach, *Journal of Membrane Science* 713 (2025) 123356. <https://doi.org/10.1016/j.memsci.2024.123356>.
- [304] M. Ramírez-Martínez, S. Aristizabal, L. Upadhyaya, A.-H. Emwas, N. Hadjichristidis, S.P. Nunes, Recyclable Membranes through Reversible and Dynamic Crosslinking, *ACS Applied Polymer Materials* 6(21) (2024) 13120-13131. <https://doi.org/10.1021/acsapm.4c02286>.
- [305] R. Górecki, S. Bhaumik, E. Qasem, L. Loiola, A.H. Emwas, K. Ntetsikas, N. Hadjichristidis, S.P. Nunes, Well-Defined Block Copolymer Vitrimers Membranes, *Small* 21(3) (2025) 2409139. <https://doi.org/10.1002/sml.202409139>.

- [306] H. Zhang, K.W. Huang, H.N. Alshareef, S.P. Nunes, A Fifteen-Year Journey of Groundbreaking Research and Innovation at King Abdullah University of Science and Technology (KAUST)(Adv. Mater. 51/2024), Advanced Materials 36(51) (2024) 2470403. <https://doi.org/10.1002/adma.202470403>.
- [307] E. Qasem, L. Upadhyaya, U.T. Syed, R. Gorecki, L.P. Silva, P.J. Carvalho, S.P. Nunes, Hollow fibers with encapsulated ionic liquid for gas dehydration, Journal of Membrane Science 713 (2025) 123390. <https://doi.org/10.1016/j.memsci.2024.123390>.
- [308] M. Di Vincenzo, A. Tiraferri, R. Górecki, A. Martin, K. Gopalsamy, M. Malaguti, B. Davaasuren, M.N. Hedhili, S. Hong, G. Szekely, 2-Hydroxy-N-(diphenylmethyl) acetamide nanocomposite membranes for highly selective desalination, Journal of Membrane Science (2025) 123785. <https://doi.org/10.1016/j.memsci.2025.123785>.

Papers submitted:

G. Ignacz, M. I. Baig, K. Gopalsamy, A. Villa, S. Nunes, B. Ghanem, T. Shastry, S. K. Kumar, G. Szekely. Machine learning for unraveling the chemical diversity of interfacial polymerization for thin-film composite membranes.

L. Upadhyaya, B. Alhazmi, S. Hong, R. Górecki, M. Tepper, H. Roth, M. Wessling, G. Szekely, S. P. Nunes, Separation of Active Pharmaceutical Ingredients with Poly(Ether Ether Ketone) Hollow Fibers Spun with Acid-resistant Spinneret.

R. Esposito, M. Di Vincenzo, K. Gopalsamy, S. Ganesan, L. Upadhyaya, C. Grande, G. Szekely, S. P. Nunes, Tailoring Membrane Polarity for the Pervaporation of Polar/Non-Polar Solvent Mixtures.