

João Paulo COSAS FERNANDES

1. Liste de publications dans des journaux avec comité de lecture

1. **Cosas Fernandes, J. P.**; Federico, C. E.; Lentzen, E.; Valle, N.; Basterra-Beroiz, B.; Weydert, M.; Quintana, R. AFM-nanoSIMS Correlative Microscopy on Multiphase Elastomeric Systems: Nanomechanical Properties and Elemental Distribution at the Nanoscale. *Polymer Testing*, 121, 107996, 2023. <https://doi.org/10.1016/j.polymertesting.2023.107996>
2. **Cosas Fernandes, J. P.**; Federico, C. E.; Basterra-Beroiz, B.; Weydert, M.; Quintana, R. Revealing phase-specific properties of elastomeric blends and their chemical structure at the nanoscale by AFM. *Polymer*, 257, 125299, 2022. <https://doi.org/10.1016/j.polymer.2022.125299>
3. Candau, N.; **Cosas Fernandes, J. P.**; Vasmer, E.; Maspoch, M. L. Cellulose Nanocrystals as Nucleating Agents for the Strain Induced Crystallization in Natural Rubber. *Soft Matter*, 18 (45), 8663-8674, 2022. <https://doi.org/10.1039/D2SM01291J>
4. Candau, N.; Vives, E.; Renna, A. I. F.; Oguz, O.; Corvec, G.; Federico, C. E.; **Cosas Fernandes, J. P.**; Stoclet, G.; Maspoch, M. L. Observation of heterogeneities in elastocaloric natural/wastes rubber composites. *Express Polymer Letters*, 16 (12), 1331-1347, 2022. <https://doi.org/10.3144/expresspolymlett.2022.96>
5. Enganati, S. K.; Yan, C.; **Cosas Fernandes, J. P.**; Zielinski, B.; Gillick, J.; Addiego, F.; Ruch, D.; Mertz, G. Thermally induced structural changes of resorcinol formaldehyde latex adhesive used in cord-rubber composites. *Int. J. Adhes. Adhes.* 2022, 103224. <https://doi.org/10.1016/j.ijadhadh.2022.103224>
6. Possari, L.T.; **Cosas Fernandes, J.P.**; Bettini, S. H. P. Compatibility and interphase properties of poly(butylene succinate-co-adipate) (PBSA)/Kraft lignin films assessed by nanomechanical analyses. *Polymer*, 254, 2022, 125065. <https://doi.org/10.1016/j.polymer.2022.125065>
7. Moretto, E.; **Cosas Fernandes, J.P.**; Staropoli, M.; Rogé, V.; Steiner, P.; Duez, B.; Lenoble, D.; Thomann, J-S. Dual-silane pre-modified silica nanoparticles – Synthesis and impact on tire tread compound mechanical and curing properties. *ACS Omega* 2022, 7, 21, 1792-17702. <https://doi.org/10.1021/acsomega.2c00665>
8. **Cosas Fernandes, J. P.**; Federico, C. E.; Lentzen, E.; Valle, N.; Basterra-Beroiz, B.; Weydert, M.; Quintana, R. Viscoelastic Properties and Sulfur Distribution at the Nanoscale in Binary Elastomeric Blends: Toward Phase-Specific Cross-Link Density Estimations. *Appl. Polym. Mater.* 2021, 3 (7), 3287–3297. <https://doi.org/10.1021/acsapm.1c00032>.
9. Enganati, S. K.; Addiego, F.; **Fernandes, J. P. C.**; Koutsawa, Y.; Zielinski, B.; Ruch, D.; Mertz, G. Multiscale Characterization of the Interfacial Region in Flexible Rubber Composites: Initial Structure and Evolution upon Thermal Treatment. *Polym. Test.* 2021, 98 (June), 107203. <https://doi.org/10.1016/j.polymertesting.2021.107203>.
10. Wolf, A.; **Fernandes, J. P. C.**; Yan, C.; Dieden, R.; Poorters, L.; Weydert, M.; Verge, P. An Investigation on the Thermally Induced Compatibilization of SBR and α -Methylstyrene/Styrene Resin. *Polymers (Basel)*. 2021, 13 (8), 1–17. <https://doi.org/10.3390/polym13081267>.
11. Trejo-Machin, A.; **Cosas Fernandes, J. P.**; Puchot, L.; Balko, S.; Wirtz, M.; Weydert, M.; Verge, P. Synthesis of Novel Benzoxazines Containing Sulfur and Their Application in Rubber Compounds. *Polymers (Basel)*. 2021, 13 (8). <https://doi.org/10.3390/polym13081262>.
12. Huynh, N.; **Cosas Fernandes, J. P.**; Mareau, V. H.; Gonon, L.; Pouget, S.; Jouneau, P. H.; Porcar, L.; Mendil-Jakani, H. Unveiling the Multiscale Morphology of Chemically Stabilized Proton Exchange Membranes for Fuel Cells by Means of Fourier and Real Space Studies. *Nanoscale Adv.* 2021, 3 (9), 2567–2576. <https://doi.org/10.1039/d1na00005e>.

13. Baba, K.; Bengasi, G.; Loyer, F.; **Fernandes, J. P. C.**; El Assad, D.; De Castro, O.; Boscher, N. D. Fused Metalloporphyrin Thin Film with Tunable Porosity via Chemical Vapor Deposition. *ACS Appl. Mater. Interfaces* 2020, 12 (33), 37732–37740. <https://doi.org/10.1021/acsami.0c09630>.
14. Huynh, N.; **Fernandes, J. P. C.**; Bayle, P. A.; Bardet, M.; Espuche, E.; Dillet, J.; Perrin, J.-C.; El Kaddouri, A.; Lottin, O.; Mareau, V. H.; Mendil-Jakani, H.; Gonon, L. Sol-Gel Route: An Original Strategy to Chemically Stabilize Proton Exchange Membranes for Fuel Cell. *J. Power Sources* 2020, 462, 228164. <https://doi.org/10.1016/j.jpowsour.2020.228164>.
15. Bengasi, G.; Quéту, L.; Baba, K.; Ost, A.; **Cosas Fernandes, J.P.**; Grysan, P.; Heinze, K.; Boscher, N. Constitution and Conductivity of Metalloporphyrin Tapes. *Eur. J. Inorg. Chem.* 2020, 1938–1945. <https://doi.org/10.1002/ejic.202000243>.
16. Bengasi, G.; Desport, J. S.; Baba, K.; **Cosas Fernandes, J. P.**; De Castro, O.; Heinze, K.; Boscher, N. D. Molecular Flattening Effect to Enhance the Conductivity of Fused Porphyrin Tape Thin Films. *RSC Adv.* 2020, 10 (12), 7048–7057. <https://doi.org/10.1039/C9RA09711B>.
17. **Cosas Fernandes, J. P.**; Castro, L. D. C.; Mareau, V. H.; Pessan, L. A.; Gonon, L. New Insights on the Compatibilization of PA6/ABS Blends: A Co-Localized AFM-Raman Study. *Polymer (Guildf)*. 2018, 146, 151–160. <https://doi.org/10.1016/j.polymer.2018.05.012>.
18. **Cosas Fernandes, J. P.**; Mareau, V. H.; Gonon, L. Co-Localized AFM-Raman: A Powerful Tool to Optimize the Sol-Gel Chemistry of Hybrid Polymer Membranes for Fuel Cell. *Polym. (United Kingdom)* 2018, 137. <https://doi.org/10.1016/j.polymer.2018.01.014>.
19. **Fernandes, J. P. C.**; Mareau, V. H.; Gonon, L. AFM-Raman Colocalization Setup: Advanced Characterization Technique for Polymers. *Int. J. Polym. Anal. Charact.* 2017, 1–7. <https://doi.org/10.1080/1023666X.2017.1391740>.
20. **Fernandes, J. P. C.**; Gunnewiek, R. F. K.; Souto, P. M.; Kiminami, R. H. G. A. Monoqueima de Porcelanas Esmaltadas Em Forno de Micro-Ondas. *Cerâmica* 2013, 59 (352), 545–550. <https://doi.org/10.1590/S0366-69132013000400009>.

2. Liste de publications dans des actes de congrès avec comité de lecture

1. Fuentes, C.A., Federico, C., Mertz, G., **Cosas Fernandes, J.P.**, Ramharter, K., Van Vuure, A.W. Improvement of Interfacial Adhesion in Bamboo Fibre Polymer Composites by Ultraviolet Light Treatment. *Fiber Society 2022 Spring Conference - Fibers for a Greener Society: From Fundamentals to Advanced Applications*, 2022, pp. 53
2. Possari, L. T.; Rigolin, T. R. ; Bretas, R. E. S.; **Fernandes, J. P. C.**; Bettini, S. H. P. Comportamento mecânico e viscoelástico de filmes de poli(succinato-co-adipato de butileno) (PBSA) e lignina Kraft. In: *Anais do 24º Congresso Brasileiro de Engenharia e Ciência dos Materiais*, 2022, Águas de Lindóia. (Mechanical and Viscoelastic Properties of Poly(Butylene Succinate-Co-Adipate)/Kraft Lignin Films)
3. **Cosas Fernandes, J.P.**, Costa Nascimento, C., Ambrósio, J.D. Avaliação por Reometria de Torque do Processamento do Compósito LDPE/LUFFA Modificado Quimicamente. In: *Anais do 13º Congresso Brasileiro de Polímeros*. São Carlos-SP: Editora Cubo, v.1, p.1, 2015 (Evaluation by Torque Rheometry of a Chemically Modified LDPE/Luffa Composite)

4. Communications Orales

Envergure internationale :

1. 36th International Conference of the Polymer Processing Society (PPS) – Montreal, Canada (online) – 2021
Titre: Revealing the phase-specific mechanical properties and chemical structure of elastomeric blends by Atomic Force Microscopy techniques. J.P. Cosas Fernandes, C.E. Federico, B. Basterra-Beroiz, M. Weydert, R. Quintana.
2. 8th Multifrequency AFM Conference – Madrid, Spain (online) – 2020
Titre: Phase-specific viscoelastic properties and sulfur distribution at nanoscale in binary elastomeric blends. J.P. Cosas Fernandes, C.E. Federico, B. Basterra-Beroiz, M. Weydert, R. Quintana.
3. European Materials Research Society (E-MRS) 2017 Fall Meeting – Warsaw, Poland – 2017.
Titre: Co-localized AFM-Raman on cryo-ultramicrotomed membrane cross-sections: A powerful tool to Optimize Hybrid PEM for Fuel Cell. J.P. Cosas Fernandes, V.H. Mareau, L. Gonon.
4. 32nd International Conference of the Polymer Processing Society (PPS) – Lyon, France – 2016
Titre: A new process to convert proton exchange membranes into high performances and reliable hybrid membranes for fuel cell. J.P. Cosas Fernandes, V.H. Mareau, L. Gonon.
5. European Polymer Conference (EUPOC) – Gargnano, Italy - 2015
Titre: A new chemical stabilizing strategy for better performances and durability of PEMFC.
L. Gonon, J.P. Cosas Fernandes, I. Zamanillo, V.H. Mareau, H. Mendil-Jakani

Envergure nationale :

1. Forum des microscopies à sonde locale 2023 – Obernai, France – 2023
Titre : Adhesion at the interface of nanocellulosic surfaces measured via colloidal probe force microscopy. João P. Cosas Fernandes, Sandra Tapin-Lingua, Fleur Rol, Hugues Bonnet, Christine Lancelon-Pin, Laurent Heux, Yoshiharu Nishiyama, Franck Dahlem.
2. Journée PolyNat 2022 – Aix-Les-Bains, France – 2022
Titre: Caractérisation Locale de l'Adhésion à l'interface d'objets (nano)Cellulosiques. João P. Cosas Fernandes, Sandra Tapin-Lingua, Fleur Rol, Hugues Bonnet, Christine Lancelon-Pin, Laurent Heux, Yoshiharu Nishiyama, Franck Dahlem.
3. 4^{ème} réunion plénière du GdR 3652 du CNRS HySPàC – Grenoble, France – 2018
Titre: Hybridation par voie sol-gel : une approche prometteuse pour optimiser les performances et la durabilité des membranes PEMFC. N. Huynh, J.P. Cosas Fernandes, L. Gonon, V.H. Mareau, H. Mendil-Jakani, E. Espuche, M. Bardet, J. Dillet, J.C. Perrin, O. Lottin.
4. 44^{ème} Colloque National du Groupe Français des Polymères (GFP) – Belvaux, Luxembourg - 2015
Titre: Co-localized AFM-Raman setup: a powerful tool to combine multi-technique and multiscale characterizations of polymer membranes. J.P. Cosas Fernandes, V.H. Mareau, L. Gonon
5. IV Congresso de Iniciação em Desenvolvimento Tecnológico e Inovação da UFSCar – São Carlos, Brésil - 2011
Titre: Avaliação das Propriedades Mecânicas de Porcelanas Esmaltadas Sinterizadas em Forno de Micro-ondas. J.P. Cosas Fernandes, R.F.K. Gunnewiek, P. M. de Souto, Ruth H. G. A. Kiminami.
6. III Congresso de Iniciação em Desenvolvimento Tecnológico e Inovação da UFSCar – São Carlos, Brésil – 2010
Titre: Queima de Porcelanas Esmaltadas por Micro-ondas. J.P. Cosas Fernandes, P. M. de Souto, Ruth H. G. A. Kiminami.

Séminaires invités :

1. Titre: « Introduction to AFM modes and applications » dans le cadre du cours «Materials and Surfaces Characterization » , Katholieke Universiteit Leuven (KUL), invité par Dr. Carlos Fuentes Rojas, 12 octobre 2021, Leuven, Belgique (en ligne).
2. Titre: « Correlative microscopy and its application in multiphase polymer systems », Laboratoire Procédés et Ingénierie en Mécanique et Matériaux (PIMM), invité par Dr. Guillaume Miquelard-Garnier, 6 octobre 2022, Paris, France.
3. Titre: « Introduction to AFM modes and its application in composite characterization » dans le cadre du cours «Materials and Surfaces Characterization » , Katholieke Universiteit Leuven (KUL), invité par Dr. Carlos Fuentes Rojas, 25 novembre 2022, Leuven, Belgique (en ligne).
4. Titre: « Atomic Force Microscopy characterization of multiphase polymer systems », Departamento de Engenharia de Materiais (DEMa), Universidade Federal de São Carlos (UFSCar), invité par Dr Lucas Staffa, 30 août 2023, São Carlos, Brésil.

5. Communications par Poster

Envergure Internationale :

1. International Rubber Conference (DKT IRC) – Nuremberg, Germany -2022
Titre : Revealing the phase-specific chemical structure of PI/BR blends by nano-spectroscopy with AFM-IR. Cosas Fernandes, J. P.; Federico, C. E.; Basterra-Beroiz, B.; Weydert, M.; Quintana, R.
2. International Conference on Advanced Energy Materials (AEM) – Guildford, England - 2017
Titre: Stabilized hybrid membranes for long-lived fuel cell. N. Huynh, J.P. Cosas Fernandes, L. Gonon, V.H. Mareau, H. Mendil-Jakani, E. Espuche, M. Bardet, J. Dillet, J.C. Perrin, O. Lottin.
3. 32nd International Conference of the Polymer Processing Society (PPS) – Lyon, France – 2016
Titre: AFM-Raman Co-localization setup: Advanced characterization technique for polymers. J.P. Cosas Fernandes, V.H. Mareau, L. Gonon.
4. 4th International Soft Matter Conference (ISMC) – Grenoble, France - 2016
Title: Advanced multitechnique characterization strategy: Cryo-ultramicrotomy allied with AFM-Raman and Electron Microscopy. J.P. Cosas Fernandes, V.H. Mareau, L. Gonon
5. European Polymer Conference (EUPOC) – Gargnano, Italy - 2015
Titre: Co-localized AFM-Raman setup: a powerful tool to study PEMFC membrane stabilization by active nano-networks. J.P. Cosas Fernandes, V.H. Mareau, L. Gonon

Envergure Nationale:

1. Forum des microscopies à sonde locale 2023 – Obernai, France – 2023
Titre : Infrared photo-induced force microscopy on nanocomposites with sulfonated cellulose nanocrystals for fuel cell applications. João P. Cosas Fernandes, Oussama Hamzah, Maxime Gondrexon, Hakima Mendil-Jakani, Vincent H. Mareau, Laurent Gonon, Padraic O'reilly, Sung Park, Bruno Jean, Yoshiharu Nishiyama, Laurent Heux, Franck Dahlem.
2. 4ème réunion plénière du GdR 3652 du CNRS HySPàC – Grenoble, France – 2018
Titre: Caractérisation de membranes hybrides pour PEMFC par couplage AFM-Raman après cryo-ultramicrotomie : vers une optimisation des étapes de synthèse. J.P. Cosas Fernandes, V.H. Mareau, L. Gonon.
3. 44th Colloque National du Groupe Français des Polymères (GFP) – Belvaux, Luxembourg - 2015
Titre: AFM-Raman and Electron Microscopies: Complementarities for polymer membrane characterization using cryo-ultramicrotomed cross-sections. J.P. Cosas Fernandes, V.H. Mareau, L. Gonon

4. 56º Congresso Brasileiro de Cerâmica – Curitiba, Brésil - 2012
Titre: Monoqueima de Porcelanas Esmaltadas em Forno de Micro-ondas. J.P. Cosas Fernandes, R.F.K. Gunnewiek, P. M. de Souto, Ruth H. G. A. Kiminami.
5. 55º Congresso Brasileiro de Cerâmica – Porto de Galinhas, Brésil - 2011
Titre: Análise de Propriedades Mecânicas de Peças Esmaltadas Sinterizadas por Micro-ondas. J.P. Cosas Fernandes, R.F.K. Gunnewiek, P. M. de Souto, Ruth H. G. A. Kiminami.
6. 19º Congresso Brasileiro de Engenharia e Ciência dos Materiais – Campos do Jordão, Brésil – 2010
Titre: Monoqueima e Biqueima de Porcelana Esmaltada de Geometria Complexa por Micro-ondas. J.P. Cosas Fernandes, P. M. de Souto, Ruth H. G. A. Kiminami.