

Marta Cristina Parracho Cañado Corvo
Researcher
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Personal information

Marta C. Corvo is a Contract Researcher under the National NMR Network (PTNMR) at Instituto de Nanoestruturas Nanomodelação e Nanofabricação (i3N)-Cenimat since 2018. She has published 37 papers in WoS-indexed international journals, one book chapter, filed 1 patent, and presented 20 oral communications in national and international meetings, including 6 invited talks. She participated in 4 international industry (PETROBRAS) funded projects, 3 National projects as a team member, and 1 National project as NOVA-FCT team coordinator (CLEANART). She is the PI of 1 ongoing national project (GREENPILs4CO2) and contributes to another ongoing National project (NEURITES). She successfully supervised 11 MSc, 3 BSc, and 4 BI fellowships. Currently supervising 4 PhD (1 of which is awaiting exam), 3 MSc, and 1 PhD researcher. Currently a member of COST action 18125 (Aerogels), collaborates with several international institutions, namely, UFRGS, PUCRS, Universidad de SANTIAGO DE COMPOSTELA, PETROBRAS, and several national institutions, namely UCIBIO@ FCT NOVA, LAQV-REQUIMTE@ FCT NOVA & FCUP, IST-C2TN, CICS-UBI, UAIG. She participates in graduate and post-graduate courses as an NMR lecturer and is actively involved in science outreach activities. In her professional activities interacted with 131 collaborators through the co-authorship of scientific papers and received 6 awards and distinctions. Marta C. Corvo has several ongoing collaborations being responsible for NMR studies in solid-state, solution, and HRMAS of polymers and composites and for the conceptualization and studies in ionic liquid and ion gel related materials.

RESEARCH INTERESTS: Marta's initial domain of specialization was organic chemistry with a special focus on asymmetric synthesis. Over the past decade, she focused on NMR. Her present research interests include ionic liquid-derived materials and the development of NMR protocols to study molecular interactions (including diffusion, relaxation, NOE), and CO₂ capture, High-pressure NMR, solid-state NMR, and MRI. She has been working in solvation behavior in Ionic Liquids, Ionic liquid gel materials focusing on CO₂ capture, Art Conservation, and Energy.

Employment

Researcher

CENIMAT-i3N - Centro de Investigação de Materiais (Lab. Associado I3N)
Universidade NOVA de Lisboa
Caparica, Portugal
1 Aug 2015 → present

Researcher

DCM - Departamento de Ciência dos Materiais
Universidade NOVA de Lisboa
Portugal
1 Aug 2015 → present

Pos-doc researcher

Chemistry Department, FCT, Universidade NOVA de Lisboa
Portugal
1 Oct 2009 → 27 Jul 2015

Research outputs

Advanced porous materials from poly(ionic liquid)s: Challenges, applications and opportunities

Barrulas, R. V., Zanatta, M., Casimiro, T. & Corvo, M. C., 1 May 2021, In: Chemical Engineering Journal. 411, 128528.

Ibuprofen incorporated into unmodified and modified mesoporous silica: From matrix synthesis to drug release

Inocêncio, S., Cordeiro, T., Matos, I., Danède, F., Sotomayor, J. C., Fonseca, I. M., Correia, N. T., Corvo, M. C. & Dionísio, M., Jan 2021, In: Microporous and Mesoporous Materials. 310, 110541.

Revisiting ionic liquid structure-property relationship: A critical analysis

Silva, W., Zanatta, M., Ferreira, A. S., Corvo, M. C. & Cabrita, E. J., 19 Oct 2020, In: International Journal of Molecular Sciences. 21, 20, p. 1-37 37 p., 7745.

Handling CO₂ sorption mechanism in PIL@IL composites

Zanatta, M., Lopes, M., Cabrita, E. J., Bernardes, C. E. S. & Corvo, M. C., Oct 2020, In: Journal of CO₂ Utilization. 41, 101225.

Designing silica xerogels containing RTIL for CO₂ capture and CO₂/CH₄ separation: Influence of ILs anion, cation and cation side alkyl chain length and ramification

dos Santos, L. M., Bernard, F. L., Polesso, B. B., Pinto, I. S., Frankenberg, C. C., Corvo, M. C., Almeida, P. L., Cabrita, E. & Einloft, S., 15 Aug 2020, In: Journal of Environmental Management. 268, 110340.

Cleaning fungal stains on paper with hydrogels: The effect of pH control

Barrulas, R. V., Nunes, A. D., Sequeira, S. O., Casimiro, M. H. & Corvo, M. C., Aug 2020, In: International Biodeterioration and Biodegradation. 152, 104996.

Enhancement of CO₂/N₂ selectivity and CO₂ uptake by tuning concentration and chemical structure of imidazolium-based ILs immobilized in mesoporous silica

Duczinski, R., Polesso, B. B., Bernard, F. L., Ferrari, H. Z., Almeida, P. L., Corvo, M. C., Cabrita, E. J., Menezes, S. & Einloft, S., Jun 2020, In: Journal of Environmental Chemical Engineering. 8, 3, 103740.

Influence of chain length of prepolymers in permanent memory effect of PDLC assessed by solid-state NMR

Mouquinho, A., Corvo, M. C., Almeida, P. L., Feio, G. M. & Sotomayor, J., 15 Mar 2020, In: Liquid Crystals. 47, 4

Cyclodextrin solubilization and complexation of antiretroviral drug lopinavir: In silico prediction; Effects of derivatization, molar ratio and preparation method

Adeoye, O., Conceição, J., Serra, P. A., Bento da Silva, A., Duarte, N., Guedes, R. C., Corvo, M. C., Aguiar-Ricardo, A., Jicsinszky, L., Casimiro, T. & Cabral-Marques, H., 1 Jan 2020, In: Carbohydrate Polymers. 227, 115287.

A top-down chemo-enzymatic approach towards N-acetylglucosamine-N-acetylmuramic oligosaccharides: Chitosan as a reliable template

Queda, F., Covas, G., Silva, T., Santos, C. A., Bronze, M. R., Cañada, F. J., Corvo, M. C., Filipe, S. R. & Marques, M. M. B., 15 Nov 2019, In: Carbohydrate Polymers. 224, 115133.

Mesoporous Silica vs. Organosilica Composites to Desulfurize Diesel

Ribeiro, S. O., Granadeiro, C. M., Corvo, M. C., Pires, J., Campos-Martin, J. M., de Castro, B. & Balula, S. S., 14 Nov 2019, In: Frontiers in Chemistry. 7, 756.

Molecular interactions in Ionic Liquids: The NMR contribution towards tailored solvents

Lopes, M. M., Barrulas, R. V., Paiva, T. G., Zanatta, M. & Corvo, M. C., 30 Sep 2019, *Nuclear Magnetic Resonance*. Khaneja, N. (ed.). IntechOpen

Polyoxomolybdate based ionic-liquids as active catalysts for oxidative desulfurization of simulated diesel

Mirante, F., Gomes, N., Corvo, M. C., Gago, S. & Balula, S. S., 15 Sep 2019, In: Polyhedron. 170, p. 762-770 9 p.

NMR methodology for a rational selection of ionic liquids: extracting polyphenols

Barrulas, R. V., Paiva, T. G. & Corvo, M. C., 15 Aug 2019, In: Separation and Purification Technology. 221, p. 29-37 9 p.

On the influence of imidazolium ionic liquids on cellulose derived polymers

Paiva, T., Echeverria, C., Godinho, M. H., Almeida, P. L. & Corvo, M. C., 1 May 2019, In: European Polymer Journal. 114, p. 353-360 8 p.

Correspondence on "Preorganization and Cooperation for Highly Efficient and Reversible Capture of Low-Concentration CO₂ by Ionic Liquids"

Zanatta, M., Simon, N. M., Santos, F. P. D., Corvo, M. C., Cabrita, E. J. & Dupont, J., 8 Jan 2019, In: *Angewandte Chemie - International Edition*. 58, 2, p. 382-385 4 p.

Synthesis and characterization of Locust Bean Gum derivatives and their application in the production of nanoparticles

Braz, L., Grenha, A., Corvo, M. C., Lourenço, J. P., Ferreira, D., Sarmiento, B. & Rosa da Costa, A. M., 1 Feb 2018, In: *Carbohydrate Polymers*. 181, p. 974-985 12 p.

Efficient heterogeneous polyoxometalate-hybrid catalysts for the oxidative desulfurization of fuels

Mirante, F., Dias, L., Silva, M., Ribeiro, S. O., Corvo, M. C., de Castro, B., Granadeiro, C. M. & Balula, S. S., 10 Jan 2018, In: *Catalysis Communications*. 104, p. 1-8 8 p.

Molecular order and dynamics of water in hybrid cellulose acetate-silica asymmetric membranes

Beira, M. J., Silva, M. P., Condesso, M., Cosme, P., Almeida, P. L., Corvo, M. C., Sebastião, P. J., Figueirinhas, J. L. & Pinho, M. N. D., 1 Jan 2018, (Accepted/In press) In: *Molecular Physics*.

Carbon dioxide capture by aqueous ionic liquid solutions

Dupont, J., Simon, N. M., Zanatta, M., Dos Santos, F. P., Corvo, M. C. & Cabrita, E. J., 22 Dec 2017, In: *ChemSusChem*. 10, 24, p. 4927-4933 7 p.

Desulfurization Process Conciliating Heterogeneous Oxidation and Liquid Extraction: Organic Solvent or Centrifugation/Water?

Ribeiro, S. O., Nogueira, L. S., Gago, S., Corvo, M. C., de Castro, B., Granadeiro, C. M., Balula, S. S. & Almeida, P. L., 25 Jul 2017, In: *Applied Catalysis A-General*. 542, p. 359-367 9 p.

Waterborne polyurethane/Fe₃O₄-synthetic talc composites: synthesis, characterization, and magnetic properties

Dos Santos, L. M., Ligabue, R., Dumas, A., Le Roux, C., Micoud, P., Meunier, J., Martin, F., Corvo, M., Almeida, P. & Einloft, S., 19 Jul 2017, (Accepted/In press) In: *Polymer Bulletin*. p. 1-6 6 p.

Developments in the Reactivity of 2-Methylimidazolium Salts

Peixoto, D., Figueiredo, M., Gawande, M. B., Corvo, M. C., Vanhoenacker, G., Afonso, C. A. M., Ferreira, L. M. & Branco, P. S., 16 Jun 2017, In: *Journal of Organic Chemistry*. 82, 12, p. 6232-6241 10 p.

Naphthalene amine support for G-quadruplex isolation

Santos, T., Pereira, P., Corvo, M. C., Queiroz, J. A., Sousa, F., Cruz, C. & Ferreira, J., 2017, In: *Analyst*. 142, 16, p. 2982-2994

¹H NMR Relaxometry and Diffusometry Study of Magnetic and Nonmagnetic Ionic Liquid-Based Solutions: Cosolvent and Temperature Effects

Beira, M., Daniel, C. I., Almeida, P. L., Corvo, M. C., Rosatella, A. A., Afonso, C. A. M. & Sebastião, P. J., 2017, In: *Journal of Physical Chemistry B*. 121, 51, p. 11472-11484 13 p.

L-tryptophan and dipeptide derivatives for supercoiled plasmid DNA purification

Santos, T., Carvalho, J., Corvo, M. C., Cabrita, E. J., Queiroz, J. A. & Cruz, C., 1 Jun 2016, In: *International Journal of Biological Macromolecules*. 87, p. 385-396 12 p.

Charged pullulan derivatives for the development of nanocarriers by polyelectrolyte complexation

Dionisio, M., Braz, L., Corvo, M., Lourenço, J. P., Grenha, A. & Rosa Da Costa, A. M., 1 May 2016, In: *International Journal of Biological Macromolecules*. 86, p. 129-138 10 p.

Affinity analysis and application of dipeptides derived from L-tyrosine in plasmid purification

Ferreira, S., Carvalho, J., Valente, J. F. A., Corvo, M. C., Cabrita, E. J., Sousa, F., Queiroz, J. A. & Cruz, C., 1 Dec 2015, In: *Journal of Chromatography B*. 1006, p. 47-58 12 p.

A rational approach to CO₂ capture by imidazolium ionic liquids: Tuning CO₂ solubility by cation alkyl branching
Corvo, M. C., Sardinha, J., Casimiro, T., Marin, G., Seferin, M., Einloft, S., Menezes, S. C., Dupont, J. & Cabrita, E. J., 1 Jun 2015, In: ChemSusChem. 8, 11, p. 1935-1946 12 p.

Solvation of Carbon Dioxide in [C4mim][BF₄] and [C4mim][PF₆] Ionic Liquids Revealed by High-Pressure NMR Spectroscopy

Corvo, M. C., Sardinha, J., Menezes, S. C., Einloft, S., Seferin, M., Dupont, J., Casimiro, T. & Cabrita, E. J., 2 Dec 2013, In: Angewandte Chemie-International Edition. 52, 49, p. 13024-13027

Synthesis and characterization of novel gamma-induced porous PHEMA-IL composites

Casimiro, M. H., Corvo, M. C., Ramos, A. M., Cabrita, E. J., Ramos, A. M. & Ferreira, L. M., 15 Feb 2013, In: Materials Chemistry And Physics. 138, 1, p. 11-16

Binding of ibuprofen, ketorolac, and diclofenac to COX-1 and COX-2 studied by saturation transfer difference NMR.

Viegas, A., Manso, J., Corvo, M. C., Marques, M. M. S. B. & Cabrita, E. J. D. S., 17 Nov 2011, In: Journal Of Medicinal Chemistry. 54, 24, p. 8555-8562

Application of HR-MAS NMR in the solid-phase synthesis of a glycopeptide using Sieber amide resin

Carvalho, L. R., Corvo, M. C., Enugala, R., Marques, M. M. B. & Cabrita, E. J., 1 Apr 2010, In: Magnetic Resonance in Chemistry. 48, 4, p. 323-330

Synthesis of γ -amino acid analogues from natural α -amino acids by a radical pathway

Corvo, M. C. & Pereira, M. M. A., 1 Feb 2007, In: Amino Acids. 32, 2, p. 243-246 4 p.

ChemInform Abstract: Asymmetric Synthesis of N-Aryl Aziridines.

Aires-de-Sousa, J., Prabhakar, S., Lobo, A. M., Rosa, A. M., Gomes, M. J. S., Corvo, M. C., Williams, D. J. & White, A. J. P., Aug 2002, In: ChemInform.

A radical approach towards indolizidine 167B

Corvo, M. C. & Pereira, M. M. A., 14 Jan 2002, In: Tetrahedron Letters. 43, 3, p. 455-458 4 p.

Awards

NEURiTEs: Regeneração Neural com Suportes Condutores

Borges, J. P. M. R., Henriques, C. M. R., Silva, J. A. M. D. C., Corvo, M. C. P. C. & Videira, P. A.
Fundação para a Ciência e a Tecnologia: €236,290.87
1/10/18 → 30/09/22

Projects

CleanART: CleanART - Innovative green methodology to clean fungal stains from paper documents and artworks

Corvo, M. C. P. C.
Fundação para a Ciência e a Tecnologia
2/07/16 → 1/07/19

Desenvolvimento de uma tecnologia de captura de CO₂ à base de líquidos iónicos poliméricos

Corvo, M. C. P. C.
Fundação para a Ciência e a Tecnologia
1/06/18 → 31/05/21

NEURiTEs: Regeneração Neural com Suportes Condutores

Borges, J. P. M. R., Henriques, C. M. R., Silva, J. A. M. D. C., Corvo, M. C. P. C. & Videira, P. A.
Fundação para a Ciência e a Tecnologia
1/10/18 → 30/09/22

