Carlos Manuel Carlevaro: *Curriculum Vitæ*

1 Personal information

Date of birth:	August 31, 1968.		carlevaro@gmail.com
Place of birth:	Paraná, Entre Ríos, Argentina.		http://carlevaro.ar
			Manuel Carlevaro
Marital status:	Married, two children.		0000-0003-3528-7614
C.U.I.L.:	20-20189326-8		Manuel Carlevaro

2 Education

2002 **PhD in Exact Sciences** , National University of La Plata. Argentina.
Thesis: *Microscopic Model of Liquid Water. Generalized Mean Spherical Approximation.*
Advisor: Dr. Fernando Vericat.

1995 **Graduated in Physics**, National University of Rosario. Argentina.

3 Current positions

2007 - Present **National Scientific and Technical Research Council** (CONICET).
Current position: *Independent Researcher.* manuel@iflysib.unlp.edu.ar
Institute of Physics of Liquids and Biological Systems (IFLYSIB). Calle 59 Nro. 789.
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2005 - Present **National Technological University**.
Current position: *Full Professor – Head of Granular Material Group.* cmcarlevaro@frlp.utn.edu.ar
La Plata Regional School, Mechanic Engineering Department. Avenida 60 esquina 124 s/n.
1923 Berisso, Buenos Aires, Argentina. Teléfono: (+54 221) 421-4392.

4 Publications – Last 5 years

2024

21. Luciana Melina Luque, Carlos Manuel Carlevaro, Enrique Rodriguez-Lomba, and Enrique Lomba. "In silico study of heterogeneous tumour-derived organoid response to CAR T-cell therapy". In: *Scientific Reports* 14.1 (May 29, 2024), p. 12307. DOI: 10.1038/s41598-024-63125-5.

20. Federico G. Vega, C. Manuel Carlevaro, Mauro Baldini, Marcos A. Madrid, and Luis A. Pugnaloni. "Simulation of proppant conductivity test: effect of particle size dispersion". In: *Petroleum Science and Technology* 0.0 (2024), pp. 1–19. DOI: 10.1080/10916466.2024.2326653.

19. C. Manuel Carlevaro, Ryan Kozlowski, and Luis A. Pugnaloni. "Flow rate in 2D silo discharge of binary granular mixtures: the role of ordering in monosized systems". In: *Frontiers in Soft Matter* 4 (2024). DOI: 10.3389/frsfm.2024.1340744.

2023

18. Rituparna Basak, Ryan Kozlowski, Luis A. Pugnaloni, M. Kramar, Joshua E. S. Socolar, C. Manuel Carlevaro, and Lou Kondic. "Evolution of force networks during stick-slip motion of an intruder in a granular material: Topological measures extracted from experimental data". In: *Phys. Rev. E* 108 (5 Nov. 2023), p. 054903. DOI: 10.1103/PhysRevE.108.054903.

17. María José Cervantes, Lucas O. Basiuk, Ana González-Suárez, C. Manuel Carlevaro, and Ramiro M. Irastorza. "Low-Frequency Electrical Conductivity of Trabecular Bone: Insights from In Silico Modeling". In: *Mathematics* 11.19 (2023). DOI: 10.3390/math11194038.

16. H. Ariel Alvarez, Alexandra Cousido-Siah, Yanis R. Espinosa, Alberto Podjarny, C. Manuel Carlevaro, and Eduardo Howard. "Lipid exchange in crystal-confined fatty acid binding proteins: X-ray evidence and molecular dynamics explanation". In: *Proteins: Structure, Function, and Bioinformatics* 91.11 (2023), pp. 1525–1534. DOI: https://doi.org/10.1002/prot.26546.

15. Marcia C. Barbosa, Ana Laura Benavides, Manuel Carlevaro, Gerhard Kahl, and Enrique Lomba. "Special issue on soft matter research in Latin America". In: *Journal of Physics: Condensed Matter* 35.41 (July 2023), p. 410301. DOI: 10.1088/1361-648X/acdebd.

14. Luciana Melina Luque, Carlos Manuel Carlevaro, Camilo Julio Llamoza Torres, and Enrique Lomba. "Physics-based tissue simulator to model multicellular systems: A study of liver regeneration and hepatocellular carcinoma recurrence". In: *PLOS Computational Biology* 19.3 (Mar. 2023), pp. 1–28. DOI: 10.1371/journal.pcbi.1010920.

2022

13. Yanis R. Espinosa, Daniel I. Barrera Valderrama, C. Manuel Carlevaro, and Eugenio J. Llanos. "Molecular basis of the anchoring and stabilization of human islet amyloid polypeptide in lipid hydroperoxidized bilayers". In: *Biochimica et Biophysica Acta (BBA) - General Subjects* 1866.10 (July 2022), p. 130200. DOI: https://doi.org/10.1016/j.bbagen.2022.130200.

12. Luis A. Pugnaloni, C. Manuel Carlevaro, Ryan Kozlowski, Hu Zheng, Lou Kondic, and Joshua E. S. Socolar. "Universal features of the stick-slip dynamics of an intruder moving through a confined granular medium". In: *Physical Review E* 105 (4 Apr. 2022), p. L042902. DOI: 10.1103/PhysRevE.105.L042902.

11. C. Manuel Carlevaro, Marcelo N. Kuperman, Sebastián Bouzat, Luis A. Pugnaloni, and Marcos A. Madrid. "On the use of magnetic particles to enhance the flow of vibrated grains through narrow apertures". In: *Granular Matter* 24.2 (2022), p. 51. DOI: 10.1007/s10035-022-01209-7.

2021

10. Rituparna Basak, C. Manuel Carlevaro, Ryan Kozlowski, Chao Cheng, Luis A. Pugnaloni, Miroslav Kramár, Hu Zheng, Joshua E. S. Socolar, and Lou Kondic. "Two Approaches to Quantification of Force Networks in Particulate Systems". In: *Journal of Engineering Mechanics* 147.11 (2021), p. 04021100. DOI: 10.1061/(ASCE)EM.1943-7889.0002003.

9. Yanis R. Espinosa, H. Ariel Alvarez, Eduardo I. Howard, and C. Manuel Carlevaro. "Molecular dynamics simulation of the heart type fatty acid binding protein in a crystal environment". In: *Journal of Biomolecular Structure and Dynamics* 39.10 (June 2021), pp. 3459–3468. DOI: 10.1080/07391102.2020.1773315.

8. Marcos A. Madrid, C. Manuel Carlevaro, Luis A. Pugnaloni, Marcelo Kuperman, and Sebastián Bouzat. "Enhancement of the flow of vibrated grains through narrow apertures by addition of small particles". In: *Physical Review E* 103 (3 Mar. 2021), p. L030901. DOI: 10.1103/PhysRevE.103.L030901.

7. Federico G. Vega, C. Manuel Carlevaro, Martín Sánchez, and Luis A. Pugnaloni. "Stability and conductivity of proppant packs during flowback in unconventional reservoirs: A CFD–DEM simulation study". In: *Journal of Petroleum Science and Engineering* 201 (2021), p. 108381. DOI: https://doi.org/10.1016/j.petrol.2021.108381.

2020

6. J. E. Fajardo, F. P. Lotto, F. Vericat, C. M. Carlevaro, and R. M. Irastorza. "Microwave tomography with phaseless data on the calcaneus by means of artificial neural networks". In: *Medical & Biological Engineering & Computing* 58.2 (Feb. 2020), pp. 433–442. DOI: 10.1007/s11517-019-02090-y

5. C. Manuel Carlevaro, Ryan Kozlowski, Luis A. Pugnaloni, Hu Zheng, Joshua E. S. Socolar, and Lou Kondic. "Intruder in a two-dimensional granular system: Effects of dynamic and static basal friction on stick-slip and clogging dynamics". In: *Physical Review E* 101 (1 Jan. 2020), p. 012909. DOI: 10.1103/PhysRevE.101.012909.

2019

4. Jesús E Fajardo, Julián Galván, Fernando Vericat, Carlos M Carlevaro, and Ramiro M Irastorza. "Phaseless Microwave Imaging Of Dielectric Cylinders: An Artificial Neural Networks-Based Approach". In: *Progress In Electromagnetics Research* 166 (2019), pp. 95–105. DOI: 10.2528/PIER19080610.

3. Ryan Kozlowski, C. Manuel Carlevaro, Karen E. Daniels, Lou Kondic, Luis A. Pugnaloni, Joshua E. S. Socolar, Hu Zheng, and Robert P. Behringer. "Dynamics of a grain-scale intruder in a two-dimensional granular medium with and without basal friction". In: *Physical Review E* 100 (3 Sept. 2019), p. 032905. DOI: 10.1103/PhysRevE.100.032905.

2. J. E. Fajardo, F. Vericat, G. Irastorza, C. M. Carlevaro, and R. M. Irastorza. "Sensitivity analysis on imaging the calcaneus using microwaves". In: *Biomedical Physics & Engineering Express* 5.4 (July 2019), p. 045039. DOI: 10.1088/2057-1976/ab3330.

1. Hernán R. Sánchez, Ramiro M. Irastorza, and C. Manuel Carlevaro. "Uncertainties and temperature correction in molecular dynamic simulations of dielectric properties of condensed polar systems". In: *Journal of Molecular Liquids* 278 (Mar. 2019), pp. 546–552. DOI: https://doi.org/10.1016/j.molliq.2019.01.077.

5 Students

5.1 Postdoctoral researchers

2023 – Martín Ramirez, Mariano Esteban. CONICET - YTEC.
2020 – 2023 Luque, Luciana Melina. CONICET.
2020 – 2022 Espinosa Silva, Yanis Ricardo. CONICET.
2017 – 2020 Lotto, Federico. CONICET.
2017 – 2019 Sánchez, Hernán Rubén. CONICET.
2017 – 2020 Vega, Federico. CONICET - YTEC.

5.2 PhD.

2024 – Gracia, César. «Impact of fluid viscosity on proppant transport and sedimentation in hydraulic stimulation of reservoirs». National Technological University.
2023 – Montero, Julián. «Clogging of vibrated bidisperse granular media». National University of La Plata.
2020 – Mosca, Santiago. «Flow and transport modeling in porous media». National Technological University.
2020 – Basiuk, Lucas Osvaldo. «Computational design of stochastically optimized scaffolds». National Technological University.

5.3 Undergraduate

2021 – 2022 Gracia, César. National Technological University.
2021 Calbucoy, Carla Mariela. National Technological University.
2020 – 2022 Erik Kjolhede D'Annunzio. National Technological University.
2020 Robador, Iliana Belén. National Technological University.
2019 Rodríguez, Martín Ezequiel. National Technological University.
2015 – 2017 Goldberg, Ezequiel. National Technological University.

6 Current grants

2024 – 2027 *Study of dynamic and structural properties of granular materials.* National Technological University, MATCLP10087C.
2023 – 2024 *Optimization of energy consumption in silo aeration systems.* Buenos Aires Technology Innovation Fund, A64.
2023 – 2026 *Experiments and modeling of particle dampers with obstacles.* National Agency for the Promotion of Science and Technology, PICT-2021-I-A-00294.
2022 – 2024 *Induction of amyloid fibers by oxidized beta-pancreatic membranes in type 2 diabetes.* CONICET, PIP 11220210100884CO.