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.
B1900BTE La Plata, Buenos Aires. Phone: (+54 221) 423-3283 int. 24.

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 y Enrique Lomba. «In silico study of heterogeneous tumour-derived organoid response to CAR T-cell therapy». En: *Scientific Reports* 14.1 (29 de mayo de 2024), pág. 12307. DOI: 10.1038/s41598-024-63125-5.

20. **vega2024**.

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

2023

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

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

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

15. Marcia C. Barbosa, Ana Laura Benavides, Manuel Carlevaro, Gerhard Kahl y Enrique Lomba. «Special issue on soft matter research in Latin America». En: *Journal of Physics: Condensed Matter* 35.41 (jul. de 2023), pág. 410301. DOI: 10.1088/1361-648X/acdebd.

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

2022

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

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

11. C. Manuel Carlevaro, Marcelo N. Kuperman, Sebasti án Bouzat, Luis A. Pugnaloni y Marcos A. Madrid. «On the use of magnetic particles to enhance the flow of vibrated grains through narrow apertures». En: *Granular Matter* 24.2 (2022), pág. 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 y Lou Kondic. «Two Approaches to Quantification of Force Networks in Particulate Systems». En: *Journal of Engineering Mechanics* 147.11 (2021), pág. 04021100. DOI: 10.1061/(ASCE)EM.1943-7889.0002003.

9. Yanis R. Espinosa, H. Ariel Alvarez, Eduardo I. Howard y C. Manuel Carlevaro. «Molecular dynamics simulation of the heart type fatty acid binding protein in a crystal environment». En: *Journal of Biomolecular Structure and Dynamics* 39.10 (jun. de 2021), págs. 3459-3468. DOI: 10.1080/07391102.2020.1773315.

8. Marcos A. Madrid, C. Manuel Carlevaro, Luis A. Pugnaloni, Marcelo Kuperman y Sebastián Bouzat. «Enhancement of the flow of vibrated grains through narrow apertures by addition of small particles». En: *Physical Review E* 103 (3 mar. de 2021), pág. L030901. DOI: 10.1103/PhysRevE.103.L030901.

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

2020

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

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

2019

4. Jesús E Fajardo, Julián Galván, Fernando Vericat, Carlos M Carlevaro y Ramiro M Irastorza. «Phaseless Microwave Imaging Of Dielectric Cylinders: An Artificial Neural Networks-Based Approach». En: *Progress In Electromagnetics Research* 166 (2019), págs. 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 y Robert P. Behringer. «Dynamics of a grain-scale intruder in a two-dimensional granular medium with and without basal friction». En: *Physical Review E* 100 (3 sep. de 2019), pág. 032905. DOI: 10.1103/PhysRevE.100.032905.

2. J. E. Fajardo, F. Vericat, G. Irastorza, C. M. Carlevaro y R. M. Irastorza. «Sensitivity analysis on imaging the calcaneus using microwaves». En: *Biomedical Physics & Engineering Express* 5.4 (jul. de 2019), pág. 045039. DOI: 10.1088/2057-1976/ab3330.

1. Hernán R. Sánchez, Ramiro M. Irastorza y C. Manuel Carlevaro. «Uncertainties and temperature correction in molecular dynamic simulations of dielectric properties of condensed polar systems». En: *Journal of Molecular Liquids* 278 (mar. de 2019), págs. 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.