

# Andrés Rojano | Curriculum Vitae

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Researcher, Chemical Engineer Ph.D. student from the Universidad de Concepción. Trained in molecular modeling techniques, with knowledge in project management. Experienced in high-performance computing, fluid dynamics, coding skills, and statistical mechanics. Proficiency in technical writing and remarkable communication skills.

## Education

- **B.Sc. in Mechanical Engineering** **Barranquilla, Colombia**  
*Universidad del Norte, 2009–2014*
- **Ph.D. in Chemical Engineering** **Concepción, Chile**  
*Universidad de Concepción, Expected graduation April 2022*

## Publications

- **Effect of an external electric field on capillary filling of water in hydrophilic silica nanochannels**  
Karna, N. K., Crisson, A. R., Wagemann, E., Walther, J. H., & Zambrano, H. A.  
Physical Chemistry Chemical Physics (2018).
- **Effect of charge inversion on nanoconfined flow of multivalent ionic solutions**  
Rojano A., Córdoba A., Walther, J. H., & Zambrano, H. A.  
Physical Chemistry Chemical Physics (2022).
- **Flow reversal phenomenon of nanoconfined multivalent ionic solutions**  
Rojano A., Becerra D., Walther, J. H., & Zambrano, H. A.  
(Under preparation).

## Talks

- Effect of charge inversion on Poiseuille flow of multivalent electrolyte solutions in nanochannels: an atomistic study A Rojano, A Córdoba, JH Walther, HA Zambrano - 71st Annual Meeting of the APS Division of Fluid Dynamics, 2018
- Effect of Charge Inversion on Nanoconfined Flow of Multivalent Electrolyte Solutions A Rojano, A Cordoba, JH Walther, HA Zambrano - APS, 2019
- The electrokinetic transport of multivalent electrolytes: the effect of charge inversion A Rojano, JH Walther, HA Zambrano - American Physical Society March Meeting 2020, 2020
- Effect of Charge Inversion on Electroosmotic Transport in Nanochannels A Rojano, JH Walther, D Becerra, HA Zambrano -73rd Annual Meeting of the APS Division of Fluid Dynamics, 2020

## Research Visits

- **Technical University of Denmark (DTU)** **Lyngby, Denmark**  
*PhD research visit to the Department of Mechanical Engineering DTU, April 2019–July 2019*

## Technical and Personal Skills

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- **Type Setting:** L<sup>A</sup>T<sub>E</sub>X, Beamer, MS Office products
- **Programming Languages:** Python, Fortran, C++, HTML, Git.
- **Codes and tools:** Proficient in LAMMPS, MySQL, wxMaxima, SOLIDWORKS (int.), and Ansys fluent (int.).
- **Languages:** Spanish (Native), English (Fluent).
- **General Business Skills:** Good presentation skills, works well in a team, can write well organised and structured reports.

## Prizes and Awards

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- **PhD Scholarship from CONICYT-Chile**  
*National PhD Scholarship 2018 CONICYT-Chile,* 2018
- **UCO 1866 Student Mobility Grant year 2020**  
*Support Assistance to Events UCO 1866,* 2020

## Teaching Experience

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- **Teaching Assistant, Project Implementation Workshop** **Universidad de Concepción**  
*Natural Gas Plant, Pulp Mill* April/2016–January/2017
- **Teaching Assistant, Chemical Process Laboratory** **Universidad de Concepción**  
*Viscosity and electrolytes, Compressible flow* April/2017–January/2018
- **Teaching Assistant, Chemical Process Laboratory** **Universidad de Concepción**  
*Introduction to computational fluid dynamics* April/2018–January/2019
- **Teaching Assistant, Chemical Process Laboratory** **Universidad de Concepción**  
*Cooling Tower* September/2019–January/2020

In charge of the evaluation and guidance of undergraduate students as a graduate assistant. Graded quizzes, tests, homework, and projects to provide feedback.

## Other Work Experience

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- **SuperBrix INTERNACIONAL** **Barranquilla, Colombia**  
*Project Designer* June 2015–March 2016  
Project engineer in charge of the planning, execution, and supervision of the different projects in the agroindustry. Developed or in cooperation with SuperBrix INTERNACIONAL.
- **Universidad Técnica Federico Santa María** **Valparaiso, Chile**  
*Scientific Support* October 2020–October 2021  
Scientific support for the project: PI\_LIR\_2020\_10. In charge of the construction of atomistic systems for the study of the solvation of ions and charged surfaces.

## References

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- Harvey A Zambrano - Professor in the Mechanical Eng. Dep. at USM (Chile). [harvey.zambrano@usm.cl](mailto:harvey.zambrano@usm.cl)
- Jens H Walther - Professor in the Mechanical Eng. Dep. at DTU (Denmark). [jhw@mek.dtu.dk](mailto:jhw@mek.dtu.dk)