



# Norma Caridad Palmero Cruz

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## Personal Data

Family Names **Palmero Cruz**  
Personal Name **Norma Caridad**  
Sex **Female**  
Place of birth **Cienfuegos, Cienfuegos, Cuba**  
Nationality **Cuban**  
Date of birth **10, March, 1992**

## Education

2024–present **Soft Matter Lab, University of Gothenburg, Gothenburg, Sweden**  
Advisers **Giovanni Volpe**  
2022–2023 **Soft Matter Lab, University of Vienna, Vienna, Austria**  
Advisers **Roberto Cerbino**  
2020–2024 **Division of Science and Engineering, University of Guanajuato, León Campus, Guanajuato, Mexico**  
Advisers **Ramón Castañeda Priego and Erick Sarmiento Gómez**  
Degree **MSc. in Physics**  
2016–2018 **Faculty of Physics, University of Havana, Havana, Cuba**  
Thesis **“KNN lead-free piezoceramics doped with *Li*, *La* and *Ta*,”**  
GPA: 4.80, *max* 5.00  
Advisers **Dr. Jorge Portelles Rodríguez**  
Degree **B.S. in Physics**  
2010–2015 **Faculty of Mathematics, Physics, and Computing, University “Marta Abreu” of Las Villas, Villa Clara, Santa Clara, Cuba**  
Thesis **“Evolution of water transport in concrete mixed with pozzolanic residues and determination of the kinetic parameters of the process”**  
GPA: 5.18 (4.96 + 0.22), *max* (5.00 + *awards*)  
Advisers **Ernesto Villar Cociña**

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## Publications

### Journals

- DISTRIBUTION OF CAGE SIZE SMOOTHS THE TRANSITION FROM DIFFUSIVE TO CAGING IN MICRORHEOLOGY, N.Palmero, S. Maria, R. Castillo, E. Sarmiento. **Journal reference:** *Molecular Physics* ,(2023), DOI: 10.1080/00268976.2023.2274505.
- THERMODYNAMICS, STATIC PROPERTIES AND TRANSPORT BEHAVIOUR OF FLUIDS WITH COMPETING INTERACTIONS, Román Perdomo-Pérez, Jaime Martínez-Rivera, Norma C Palmero-Cruz, Miguel A Sandoval-Puentes, Javier A S Gallegos, Edilio Lázaro-Lázaro, Néstor E Valadez-Pérez, Alexis Torres-Carbajal and Ramón Castañeda-Priego, **Journal reference:** *J. Phys.: Condens. Matter* 34 144005, DOI: 10.1088/1361-648X/ac4b29.
- NEW LEAD-FREE PIEZOCERAMICS BASED ON KNN, Portelles Rodríguez, Jorge J., Fuentes Betancourt, Juan, Dolores Durruthy, María, López Noda, René, Rivero Ramirez, Doris, Palmero, Norma, Hernández García, Moisés, de Armas Figueroa, Yondriel, Rebellón, Julia. **Journal reference:** *Anales de la Academia de Ciencias de Cuba* 12(1), 2022, vol.12, n.1, E1101.
- DIELECTRIC SPECTROSCOPIC STUDY OF  $(K_{0.44}Na_{0.52}Li_{0.04})_{0.97}La_{0.01}Nb_{0.9}Ta_{0.1}O_3$  CERAMICS, Portelles, N. Palmero, J. Fuentes, René López Noda, O. Raymond Herrera, M.P. Cruz, J.M. Siqueiros. **Journal reference:** *Journal of Applied Physics* 122, 234102 (2017). DOI: 10.1063/1.4993813.

### Works in progress

- SIGNATURES OF THE BOND LIFETIME TOURED THE FORMATION OF FLUID OF CLUSTERY. N.Palmero and Ramón Castañeda-Priego

### Repositories

- Thesis submitted to degree B.S Physics: *Transporte de agua en hormigón mezclado con residuos puzolánicos. Determinación de los parámetros cinéticos del proceso* . <http://dspace.uclv.edu.cu:8089/handle/123456789/8768>

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## Talks and Workshops Participation

- 36th European Colloid & Interface Society Conference, 4 – 9 September 2022 Chania, Crete, Greece. Poster entitled “*Hydrodynamic correlations of trapped particles in optical tweezers*”, Norma Caridad Palmero Cruz, Beatriz Morales Cruzado, Ramón Castañeda Priego, Erick Sarmiento Gómez
- The L Winter Meeting on Statistical Physics, January 13 – 14, 2022, Mexico. Poster entitled “*Hydrodynamic correlations of trapped particles in optical tweezers*”, Norma Caridad Palmero Cruz, Beatriz Morales Cruzado, Ramón Castañeda Priego, Erick Sarmiento Gómez
- 1st Symposium on Colloid and Interface Science, held remotely on May 31st to June 4th, 2021.
- 33rd International Conference on Science and Technology of Complex Fluids held in the University of Guanajuato, México, October 25 – 28, 2021.
- 1st Dusseldorf-León Soft Matter Meeting held on February 24th and 25th 2021 (using the platform Webex).
- 32nd International Conference on Science and Technology of Complex Fluids held in the University of Guanajuato, México, November 9 – 12, 2020. Poster entitled “*Hydrodynamic correlations of trapped particles in optical tweezers*”, Norma Palmero, Beatriz Morales, Ramon Castañeda, Erick Sarmiento.

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- I Cuban meeting of Physics for students of postgraduate, 2018 Faculty of Physics of the University of Havana. Title: “*Li, The doped KNN piezoceramics*”.
- XVI Symposium of the Cuban Physical Society. Title: “*Dielectric and structural characterization of KNN ceramics doped with lithium, tantalum and lanthanum obtained by the combination of the conventional ceramic method and the RTGG method*”.
- International Meeting on Ferroelectricity (IMF2017), San Antonio, TX - USA. Title: “*Li, La doped KNNT ceramics obtained by RTGG*”.

## Interests

- Numerical simulation of Brownian particles
- Dynamics of colloidal systems
- Machine Learning
- Soft Matter
- Optical tweezers
- Data Analysis

## Computer Skills

- Languages
- Python
  - Fortran
  - OriginLab
  - Wolfram Mathematica
  - MatLab

## Research Experience

- Numerical simulations.
- Optical tweezers.
- Modelling processes of formation of aggregates in systems that present competence interaction (SALR)
- Characterization of ferroelectric and antiferroelectric materials, by X-ray Diffraction, SEM Analysis, RAMAN, and AFM.

## Languages

- Spanish Native  
English B1+

## Works and Teaching Experience

- 2018-2020 **Professor**, *Faculty of Physics University of Havana, Cuba*
- Lectures Electromagnetism
  - Lectures Optical and Modern Physics
  - Electromagnetism Laboratory
  - Optical and Modern Physics Laboratory
- 2015-2018 **Programmer and software developer**, “*Center for Research and Development of Simulators*”, Havana, Cuba

## Acknowledgment

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- **University of Guanajuato, recognitions of Academic Performance:** For having obtained the best grade point average in their academic program, during the 2020 – 2021 period.
- **Annual Award of the Cuban Academy of Sciences, 2020.**
- **Award in the Graduation of Physics Faculty of the University “Marta Abreu” of Las Villas (2015):** Most integral graduate in physic career.
- **2012-2015,** University “Marta Abreu” of Las Villas, different recognitions of Academic Performance, and talks gave on Students Scientific Forums.