

## Prof. Ramón Castañeda-Priego



**Birthday:** January 8th, 1977.

**Citizenship:** Mexico.

**Languages:** Spanish (speaking, reading, writing), English (speaking, reading, writing), German (speaking, reading).

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### Research interest:

Thermodynamics, structural properties, transport phenomena, phase transitions, particle aggregation, physical gelation, dynamical arrest and (spontaneous and directed) self-assembly of many-body systems (colloids, polyelectrolytes, polymers, proteins, membranes, DNA). Semiconductor physics: Wigner crystallization mechanisms. Advanced numerical algorithms, parallel computing, molecular simulation methods and experimental techniques (scattering methods, rheology, confocal videomicroscopy, optical trapping, etc.) for the research of Soft Condensed Matter Physics.

### Education:

**01/2003 – 07/2004:** Postdoctoral position at the University of Konstanz, Germany. Advisors: Prof. Rudolf Klein and Prof. Hans-Hennig von Grünberg.

**03/2001 – 10/2003:** PhD student at the Physics Department of the Center of Research and Advanced Studies (CINVESTAV) of the National Polytechnic Institute (IPN), Mexico City, Mexico. Thesis: “*Structure and effective interactions in colloidal systems*”. Advisor: Prof. José Miguel Méndez-Alcaraz.

**09/1998 – 02/2000:** Master student at the Physics Department of CINVESTAV-IPN, Mexico City, Mexico. Thesis: “Depletion forces in 2D magnetic colloids”. Advisor: Prof. José Miguel Méndez-Alcaraz.

**09/1993 – 02/1998:** Career in Physics, Department of Physics at the Universidad Veracruzana, Mexico. Degree obtained for having achieved a general grade of 9.84/10.

### **Professional experience:**

**08/2004 – present:** Titular Professor C (Full Professor) at the Division of Sciences and Engineering (before Institute of Physics), Campus León, University of Guanajuato, Mexico.

**09/2016 – 08/2017:** Visiting Professor at the Center for Neutron Science, National Institute of Standards and Technology, Maryland, United States of America. Host: Dr. Yun Liu.

**02/2010 – 06/2011:** Visiting Professor at the Department of Chemical and Biomolecular Engineering, University of Delaware, United States of America. Host: Prof. Norman J. Wagner.

**08/2001 – 07/2002:** Lecturer at the Biochemistry Department of the Cinvestav-IPN, Mexico City, Mexico.

**08/2000 – 07/2001:** Lecturer at the Physics Department of the University of Veracruz, Xalapa, Mexico.

### **Honors, awards, fellowships:**

**2016:** Mexican Academy of Science Research Prize for Young Scientists (up to 40 years old) in Hard Sciences (Physics, Mathematics, Chemistry and Astronomy).

**2015:** Alexander von Humboldt Research Fellowship for Experienced Researchers. Alexander von Humboldt Foundation (Germany). Host: Prof. Stefan U. Egelhaaf, Physics Department. University of Düsseldorf.

**2014:** Marcos Moshinsky Fellowship. Marcos Moshinsky Foundation (UNAM; Mexico).

**2005 – present:** National System of Researchers (SNI, current level: 3; highest possible level).

**2005 – present:** Professor with Ideal Academic Profile; Ministry of Public Education (SEP).

**02/2003 – 07/2004:** Postdoctoral Fellowship, University of Konstanz, Germany.

**03/2001 – 10/2003:** PhD Fellowship, National Council of Science and Technology (CONACYT).

**09/1998 – 02/2000:** Master fellowship, CONACYT.

### **Professional societies:**

**2017 – present:** American Physical Society.

**2012 – present:** Mexican Academy of Sciences.

**2011 – present:** National Network on Soft Condensed Matter, CONACYT.

**2005 – present:** Academic Body of Statistical Mechanics (SEP, current level: consolidated).

**2005 – present:** Mexican Physical Society (SMF).

**Editorial boards:**

**2018 – present:** Frontier in Physics: Soft Matter Physics (Editor).

**2012 – present:** Journal of Nanofluids (Editor).

**Consulting:**

**2013 – present:** GST Autoleather.

**External Academic Committees:**

**2017 – 2019:** Evaluation and Revision Committee of the Center of Research in Optics.

**Academic Committees at the University of Guanajuato:**

**2017 – 2019:** Revision Committee of the Master and PhD programs in Physics.

**2012 – 2016:** Internal Member of the Selection Committee of Rectors and Directors, University of Guanajuato.

**2011 – 2013:** Member of the Editorial Committee, Campus León.

**2011 – 2013:** Member of the Teaching Committee, Division of Sciences and Engineering.

**2011 – 2013:** Member and Head of the Computational Committee, Division of Sciences and Engineering.

**2009 – 2011:** Member of the Research Committee, Campus León.

**2009:** Member and Head of the Committee on Educative Programs in Physics and Engineering, Division of Sciences and Engineering.

**2009:** Member and Head of the Committee on Graduate Programs in Physics, Division of Sciences and Engineering.

**2008 – 2010:** Titular Member of the Honorable Council of the Campus Leon.

**2008:** Head of the Statistical Mechanics Department.

**2006 – 2008:** Titular Member of the Honorable Council of the University of Guanajuato.

**2006 – 2008:** Member of the Evaluation Committee of the University of Guanajuato.

**2006 – 2008:** Titular Member of the Honorable Council of the Institute of Physics.

**Research funding (in Mexican pesos):**

*Total amount in USD dollars: ~ 1,000,000.00*

**2018:** Project title: “Soft Matter in Non-Euclidean Spaces”, CONACYT. \$1,300,000.00 Mexican pesos.

**2018:** Project title: “National Laboratory on Engineering of Matter Out of Equilibrium”, CONACYT-UG. \$3,000,000.00 Mexican pesos.

**2015:** Project title: “Statistical Thermodynamics of Matter Out of Equilibrium”, CONACYT. \$2,000,000.00 Mexican pesos.

**2014:** Project title: “Colloidal Soft Matter”, CONACYT. \$4,400,000.00 Mexican pesos.

**2013:** Project title: “Synthesis and Characterization of Soft Materials”, CONACYT and University of Guanajuato. \$6,000,000.00 Mexican pesos.

**2011 – 2013:** Project title: “Gelation and glass transition in colloidal dispersions with short-range attractive interactions”, NSF – CONACYT. \$504,000.00 Mexican pesos.

**2009 – 2010:** Project title: “Network on the Physics of Soft Matter”. PROMEP. \$210,000.00 Mexican pesos.

**2009 – 2013:** Project title: “Colloids: model systems in soft matter”, CONACYT. \$750,000.00 Mexican pesos.

**2005 – 2006:** Project title: “Thermodynamic properties of charged colloidal suspensions”. University of Guanajuato. \$97,100.00 Mexican pesos.

**2005 – 2006:** Project title: “Colloidal suspensions in external fields”. CONACYT. \$406,000.00 Mexican pesos.

**2004 – 2005:** Project title: “Structure, phase behavior and effective interactions in colloid-polymer mixtures”. SEP. \$295,520.00 Mexican pesos.

### **Referee of National and International Funding Agencies:**

**2015 – present:** Agencia Nacional de Promoción Científica y Tecnológica: Argentina. Evaluation of Scientific Projects: 3.

**2009 – present:** CONACYT. Evaluation of Scientific Projects: 40.

**2009 – present:** CONACYT-PNPC. Evaluation of Graduate Programs in Physics: 6.

**2011 – present:** Research Foundation Flanders (FWO, Belgium). Evaluation of Scientific Projects: 3.

### **Regular Referee of the following International Journals:**

Journal of Molecular Liquids.

Physics Letters A.

Physical Biology.

Physical Chemistry Chemical Physics.

Europhysics Letters.

The Journal of Chemical Physics.

Soft Matter.

Langmuir.

Chemical Physics Letters.

Journal of Computational Chemistry.

PLOS ONE.

Revista Mexicana de Física.

Superficies y Vacío.  
 The Scientific World Journal.  
 Journal of Physics: Condensed Matter.  
 Nature Communications.  
 Physica A.  
 Physical Review Letters.  
 Physical Review E.  
 Molecular Physics.  
 Journal of Physics D: Applied Physics.  
 Materials Research Express.  
 Applied Petrochemical Research.  
 Journal of Physics A: Mathematical and Theoretical.  
 Frontiers in Physics.  
 ACS Omega.  
 Zeitschrift für Naturforschung A.  
 Results in Physics.

**Publications: (Authors in red develop(ed) theses or postdoc under my supervision). The asterisk indicates those article as: corresponding author.**

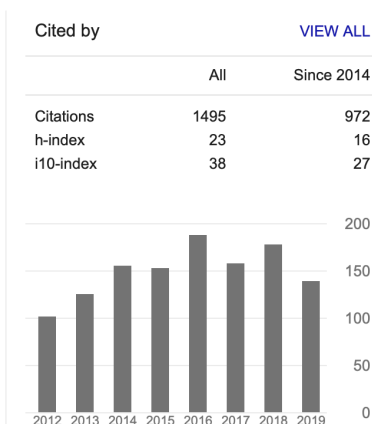
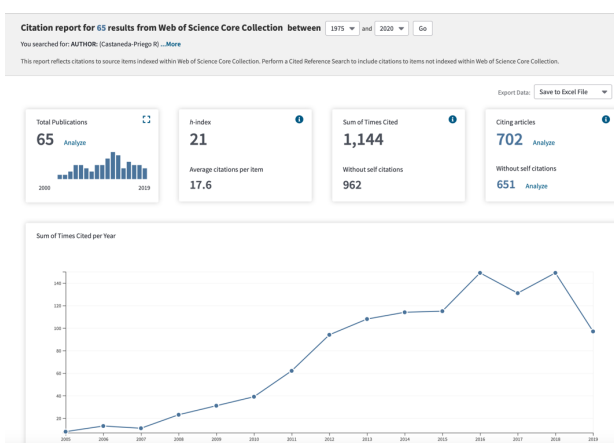
**Number of independent citations: 979.**  
**h-index: 21.**



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[soft matter](#) [colloids](#) [complex fluids](#) [simple liquids](#) [biophysics](#)



Articles in Refereed journals:

69. **Arrested dynamics of the dipolar hard sphere model**, **L. F. Elizondo-Aguilera**, E. C. Cortés-Morales, P. F. Zubieta-Rico, M. Medina-Noyola, **R. Castañeda-Priego**, T. Voigtmann and G. Pérez-Angel, *Soft Matter*. Accepted (2019).
68. **Many-electron effective potential in low-dimensional nanostructures: towards understanding the Wigner crystallization**, **R. Méndez-Camacho**, E. Cruz-Hernández and **R. Castañeda-Priego\***. *Physical Review B* **100**, 085438 (2019).
67. **Planar polymers under cylindrical confinement: a geometrical approach**, **D. M. Valencia**, G. Torres-Vargas and **R. Castañeda-Priego\***, *Journal of Physics A: Mathematical and Theoretical* **52**, 395203 (2019).
66. **Glassy dynamics in asymmetric binary mixtures of hard-spheres**, E. Lázaro-Lázaro, **J. A. Perera-Burgos**, P. Laermann, T. Sentjabrskaja, G. Pérez-Angel, M. Laurati, S. U. Egelhaaf, M. Medina-Noyola, T. Voigtmann, **R. Castañeda-Priego\*** and **L. F. Elizondo-Aguilera**, *Physical Review E* **99**, 042603 (2019).
65. **Long-time dynamics and hydrodynamic correlations in quasi-two-dimensional anisotropic colloidal mixtures**, **J. R. Villanueva Valencia**, J. Santana-Solano, E. Sarmiento-Gómez, **S. Herrera-Velarde**, J. L. Arauz-Lara and **R. Castañeda-Priego\***, *Physical Review E* **98**, 062605 (2018).
64. **Using the second virial coefficient as physical criterion to map the hard-sphere potential onto a continuous potential**, **C. A. Báez**, **A. Torres Carbajal**, A. Villada-Balbuena, J. M. Méndez-Alcaraz, **S. Herrera-Velarde** and **R. Castañeda-Priego\***, *The Journal of Chemical Physics* **149**, 164907 (2018).
63. **Reversible aggregation and colloidal cluster morphology: the importance of the extended law of corresponding states**, **N. E. Valadez-Pérez**, Y. Liu and **R. Castañeda-Priego\***, *Physical Review Letters* **120**, 248004 (2018).
62. **Friction and diffusion of a nano-colloidal disk in a two-dimensional solvent with a liquid-liquid transition**, **A. Torres-Carbajal** and **R. Castañeda-Priego\***, *Physical Chemistry Chemical Physics* **20**, 6917 (2018).
61. **Self-consistent generalized Langevin equation theory of the dynamics of multicomponent atomic liquids**, E. Lázaro-Lázaro, P. Mendoza-Méndez, **L. F. Elizondo-Aguilera**, **J. A. Perera-Burgos**, P. E. Ramírez-González, G. Pérez-Angel, **R. Castañeda-Priego** and M. Medina-Noyola. *The Journal of Chemical Physics* **146**, 184506 (2017).

60. Counterion accumulation effects on a suspension of DNA molecules: equation of state and pressure-driven denaturation, **L. A. Nicasio-Collazo**, **A. Delgado-González**, E. Hernández-Lemus and **R. Castañeda-Priego\***. *The Journal of Chemical Physics* **146**, 164902 (2017).
59. Wigner crystallization in quantum wires within the Yukawa approximation, **R. Méndez-Camacho**, E. Cruz-Hernández and **R. Castañeda-Priego\***. *Physical Review B* **95**, 085437 (2017).
58. Single file dynamics in soft materials, A. Taloni, O. Flomenbom, **R. Castañeda-Priego\***, and F. Marchesoni. *Soft Matter (Review Article)* **13**, 1096 (2017).
57. Structure of colloidal gels at intermediate concentrations: the role of competing interactions, R. F. Capellmann **N. E. Valadez-Pérez**, B. Simon, S. U. Egelhaaf, M. Laurati and **R. Castañeda-Priego\***, *Soft Matter* **12**, (2016).
56. One-dimensional Gaussian-core fluid: ordering and crossover from normal diffusion to single-file dynamics, **S. Herrera-Velarde**, G. Pérez-Ángel and **R. Castañeda-Priego\***, *Soft Matter* **12**, 9047 (2016).
55. Assessment of the micro-structure and depletion potentials in two-dimensional binary mixtures of additive hard-disks, **J. A. Perera-Burgos**, J. M. Méndez-Alcaraz, G. Pérez-Angel and **R. Castañeda-Priego\***, *The Journal of Chemical Physics* **145**, 104905 (2016).
54. Characterisation of the thermodynamics, structure and dynamics of a water-like model in 2- and 3-dimensions, **A. Torres-Carbajal** and **R. Castañeda-Priego\***, *Physical Chemistry Chemical Physics (Communications)* **18**, 17335 (2016).
53. Short-time dynamics of monomers and dimers in two-dimensional colloidal mixtures, E. Sarmiento-Gomez, **J. R. Villanueva-Valencia**, **S. Herrera-Velarde**, **J. A. Ruiz-Santoyo**, J. Santana-Solano, J. L. Arauz-Lara and **R. Castañeda-Priego\***, *Physical Review E* **94**, 012608 (2016).
52. Brownian motion of a nano-colloidal particle: the role of the solvent, **A. Torres-Carbajal**, **S. Herrera-Velarde** and **R. Castañeda-Priego**, *Physical Chemistry Chemical Physics* **17**, 19557 (2015).
51. Extended law of corresponding states for protein solutions, **F. Platten**, **N. E. Valadez-Pérez**, **R. Castañeda-Priego** and S. U. Egelhaaf, *The Journal of Chemical Physics* **142**, 174905 (2015).
50. Structural transitions and long-time self-diffusion of interacting colloids confined by a parabolic potential, **E. C. Euán-Díaz**, **S. Herrera Velarde**, V. R.

Misko, F. M. Peeters and **R. Castañeda-Priego\***, *The Journal of Chemical Physics* **142**, 024902 (2015).

49. **Single-file diffusion of driven interacting colloids**, **E. C. Euán-Díaz**, **S. Herrera Velarde**, V. R. Misko, F. M. Peeters and **R. Castañeda-Priego\***, *Biophysical Reviews and Letters* **09**, 413 (2014).

48. **Ratio of the lateral correlation length and particle radius determines the density profile of spherical molecules near a fluctuating membrane**, **F. Córdoba-Valdés**, **R. Castañeda-Priego\*** J. Timmer and C. Fleck, *Soft Matter* **10**, 8475 (2014).

47. **Stress-induced DNA damage: a case study in diffuse large B-cell lymphoma**, **L. A. Nicasio-Collazo**, **A. Delgado-González**, **R. Castañeda-Priego\*** and E. Hernández-Lemus, *The Journal of Royal Society Interface* **11**, 20140785 (2014).

46. **A Brownian dynamics algorithm for colloids in curved manifolds**, P. Castro-Villarreal, A. Villada-Balbuena, J. M. Méndez-Alcaraz, **R. Castañeda-Priego\*** and S. Estrada-Jiménez, *The Journal of Chemical Physics* **140**, 214115 (2014).

45. **Long-time self-diffusion of charged spherical colloidal particles in parallel planar layers**, **C. Contreras-Aburto**, C. A. Báez, J. M. Méndez-Alcaraz and **R. Castañeda-Priego**, *The Journal of Chemical Physics* **140**, 244116 (2014).

44. **Transient dynamics during stress overshoots in binary colloidal glasses**, T. Sentjabrskaja, M. Hermes, W.C.K. Poon, **C. D. Estrada-Álvarez**, **R. Castañeda-Priego**, S. U. Egelhaaf and M. Laurati, *Soft Matter* **10**, 6546 (2014).

43. **Generalized phase behavior of cluster formation in colloidal dispersions with competing interactions**, P. D. Godfrin, **N. E. Valadez-Pérez**, **R. Castañeda-Priego**, N. J. Wagner and Y. Liu, *Soft Matter* **10**, 5061 (2014).

42. **Depletion potentials in non-additive asymmetric binary mixtures of hard-spheres**, **C. D. Estrada-Álvarez**, **E. López-Sánchez**, G. Pérez-Angel, P. González-Mozuelos, J. M. Méndez-Alcaraz, and **R. Castañeda-Priego\***, *The Journal of Chemical Physics* **140**, 026101 (2014).

41. **Dynamical arrest transition in adhesive hard-sphere dispersions driven by rigidity percolation**, **N. E. Valadez-Pérez**, Y. Liu, A. P. R. Eberle, N. J. Wagner and **R. Castañeda-Priego\***, *Physical Review E*, **88**, 060302R (2013).

40. **Colloids in light fields: particle dynamics in random and periodic energy landscapes**, F. Evers, R. D. L. Hanes, C. Zunke, R. F. Capellmann, J. Bewerunge, C. Dalle-Ferrier, M. C. Jenkins, I. Ladadwa, A. Heuer, **R. Castañeda-Priego** and S. U. Egelhaaf, *European Physical Journal: Special Topics* **222**, 2995 (2013).



39. **Percolation in colloidal systems with competing interactions: the role of long-range repulsion**, N. E., Valadez-Pérez, R. Castañeda-Priego and Y. Liu, *Royal Society of Chemistry: Advances* **3**, 25110 (2013). (IF = 2.562, citations = 11).
38. **Phase behavior of the modified-Yukawa fluid and its sticky limit**, E. Schöll-Paschinger, N. E., Valadez-Pérez, A. L. Benavides and R. Castañeda-Priego\*, *The Journal of Chemical Physics* **139**, 184902 (2013).
37. **Intermediate range order and structure in colloidal dispersions with competing interactions**, P. D. Godfrin, R. Castañeda-Priego, Y. Liu and N. J. Wagner, *The Journal of Chemical Physics* **139**, 154904 (2013).
36. **Demixing transition, structure and depletion forces in binary mixtures of hard-spheres: the role of bridge functions**, E. López-Sánchez, C. D. Estrada-Álvarez, G. Pérez-Angel, J. M. Méndez-Alcaraz, P. González-Mozuelos and R. Castañeda-Priego\*, *The Journal of Chemical Physics* **139**, 104908 (2013).
35. **Hydrodynamic correlations in three-particle colloidal systems in harmonic traps**, S. Herrera-Velarde, E. C. Euán-Díaz, F. Córdoba-Valdéz, and R. Castañeda-Priego\*, *Journal of Physics: Condensed Matter* **25**, 325102 (2013).
34. **Gelation transition in adhesive hard-sphere colloidal dispersion: the role of gravitational effects**, J. K. Min, J. Fang, A. P. R. Eberle, R. Castañeda-Priego, and N. J. Wagner, *Physical Review Letters* **110**, 208302 (2013).
33. **Single-file diffusion in periodic energy landscapes: the role of hydrodynamic interactions**, E. Euán-Díaz, V. R. Misko, F. M. Peeters, S. Herrera-Velarde and R. Castañeda-Priego, *Physical Review E* **86**, 031123 (2012).
32. **Directed self-assembly of colloids on parallel layers by a one-dimensional modulated substrate**, S. Herrera-Velarde, A. Delgado-García, E. C. Euán-Díaz and R. Castañeda-Priego\*, *Journal of Nanofluids* **1**, 44 (2012).
31. **Analytic structure factor of discrete potential fluids: cluster-like correlations and micro-phases**, A. Loredo-Osti and R. Castañeda-Priego\*, *Journal of Nanofluids* **1**, 36 (2012).
30. **Magnetization in red blood cells: a Brownian dynamics simulation study**, M. E. Cano, R. Castañeda-Priego, A. Barrera, J. C. Estrada, P. Knauth and M. Sosa, *Revista Mexicana de Física (Mexican Journal of Physics)* **58**, 391 (2012).
29. **Phase behavior of colloids and proteins in aqueous suspension: theory and computer simulations**, N. E. Valadez-Pérez, A. L. Benavides, E. Schöll-Paschinger and R. Castañeda-Priego\*, *The Journal of Chemical Physics* **137**, 084905 (2012).

28. **Dynamical arrest, percolation, gelation and glass formation in model nanoparticle dispersions with thermoreversible adhesive interactions**, A. P. R. Eberle, **R. Castañeda-Priego**, J. M. Kim and N. J. Wagner, *Langmuir* **28**, 1866 (2012).
27. **Hysteresis in pressure-driven DNA denaturation**, E. Hernández-Lemus, **A. Nicasio-Collazo** and **R. Castañeda-Priego\***, *PLOS ONE* **7**, 33789 (2012).
26. **On calculation of structure of charge-stabilized colloidal suspensions**, **R. Castañeda-Priego\***, V. Lobaskin, **J. C. Mixteco-Sánchez**, L. F. Rojas-Ochoa, and P. Linse, *Journal of Physics: Condensed Matter* **24**, 065102 (2012).
25. **A modified soft-core fluid model for the direct correlation function of the square-shoulder and square-well fluids**, **I. Guillén-Escamilla**, E. Schöll-Paschinger and **R. Castañeda-Priego\***, *Physica A* **390**, 3637 (2011).
24. **Dynamical arrest transition in nanoparticle dispersions with short-range attractions**, A. P. R. Eberle, N. J. Wagner and **R. Castañeda-Priego**, *Physical Review Letters* **106**, 105704 (2011).
23. **Renormalized jellium mean-field approximation for binary mixtures of charged colloids**, **J. M. Falcón-González** and **R. Castañeda-Priego\***, *Physical Review E* **83**, 041401 (2011).
22. **On the importance of thermodynamic self-consistency for calculating clusterlike pair correlations in hard-core double-Yukawa fluids**, J. M. Kim, **R. Castañeda-Priego\***, Y. Liu and N. J. Wagner, *The Journal of Chemical Physics* **134**, 064904 (2011).
21. **Renormalized jellium model for charged colloids revisited**, **J. M. Falcón-González** and **R. Castañeda-Priego\***, *The Journal of Chemical Physics* **133**, 216101 (2010).
20. **Ordering and single-file diffusion in colloidal systems**, **S. Herrera-Velarde**, **A. Zamudio-Ojeda** and **R. Castañeda-Priego\***, *The Journal of Chemical Physics* **133**, 114902 (2010). **Selected in the Virtual Journal of Biological Physics Research, October 1st, 2010.**
19. **Structure and effective interactions in parallel monolayers of charged spherical colloids**, C. Contreras-Aburto, J. M. Méndez-Alcaraz and **R. Castañeda-Priego**, *The Journal of Chemical Physics* **132**, 174111 (2010).
18. **A parametrisation of the direct correlation function of the square-shoulder fluid**, **I. Guillén-Escamilla**, E. Schöll-Paschinger and **R. Castañeda-Priego\***, *Molecular Physics* **108**, 141 (2010).

17. **Diffusion in 2D colloidal systems on periodic substrates**, **S. Herrera-Velarde** and **R. Castañeda-Priego\***, *Physical Review E* **79**, 041407 (2009).
16. **Dynamic arrest in charged colloidal systems exhibiting large scale structural heterogeneities**, C. Haro-Pérez, L. F. Rojas-Ochoa, **R. Castañeda-Priego** et al., *Physical Review Letters* **102**, 018301 (2009).
15. **Superparamagnetic colloids confined in narrow corrugated channels**, **S. Herrera-Velarde** and **R. Castañeda-Priego\***, *Physical Review E* **77**, 041407 (2008).
14. **Density dependent interactions and structure of colloids in the weak screening regime**, L. F. Rojas-Ochoa, **R. Castañeda-Priego**, V. Lobaskin, A. Stradner, F. Schefold and P. Schurtenberger, *Physical Review Letters* **100**, 178304 (2008). **Selected in The Newsletter of the Division of Biological Physics of the American Physical Society, Vol. 8, June 2008.**
13. **Magnetic properties of synthetic eumelanin: preliminary results**, **M. E. Cano**, **R. Castañeda-Priego\***, A. Gil-Villegas, M. Sosa et al., *Photochemistry and Photobiology* **84**, 627-631 (2008).
12. **Hard-colloidal particles in contact with fluctuating membranes**, **F. Córdoba-Valdés**, C. Fleck and **R. Castañeda-Priego\***, *Revista Mexicana de Física (Mexican Journal of Physics)* **53**, 475 (2007).
11. **Structure and dynamics of interacting brownian particles in one-dimensional periodic substrates**, **S. Herrera-Velarde** and **R. Castañeda-Priego\***, *Journal of Physics: Condensed Matter* **19**, 226215 (2007).
10. **Structure and thermodynamics of discrete potential fluids in the Zerah-Hansen approximation**, **I. Guillén-Escamilla**, M. Chávez-Páez and **R. Castañeda-Priego\***, *Journal of Physics: Condensed Matter* **19**, 086224 (2007).
9. **Macroion virial contribution to the osmotic pressure in charge-stabilized colloidal suspensions**, E. Trizac, L. Belloni, J. Dobnikar, H. H. von Grünberg and **R. Castañeda-Priego**, *Physical Review E* **75**, 011401 (2007). **Selected in Chemical Synthesis Methods of the Virtual Journal of Nanoscale & Technology, July 2007.**
8. **Testing the relevance of effective interaction potentials between highly charged colloids in suspension**, J. Dobnikar, **R. Castañeda-Priego**, H. H. von Grünberg and E. Trizac, *New Journal of Physics* **8**, 277 (2006).
7. **Macroion correlation effects in electrostatic screening and thermodynamics of highly charged colloids**, **R. Castañeda-Priego\***, L. F. Rojas-Ochoa, V. Lobaskin and **J. C. Mixteco-Sánchez**, *Physical Review E* **74**, 051408 (2006).

6. **Entropic forces in dilute colloidal systems**, R. Castañeda-Priego\*, A. Rodríguez-López and J. M. Méndez-Alcaraz, *Physical Review E* **73**, 051404 (2006).

5. **Strain-induced domain formation in two-dimensional colloidal systems**, S. Bleil, H. H. von Grünberg, J. Dobnikar, R. Castañeda-Priego, C. Bechinger, *Europhysics Letters* **73**, 450 (2006).

4. **Vapor-liquid equilibrium and critical behavior of the square-well fluid of variable range: a theoretical study**, E. Schoell-Paschinger, A. L. Benavides and R. Castañeda-Priego, *Journal of Chemical Physics* **123**, 234513 (2005).

3. **A RISM approach to depletion forces induced by hard rod-like particles**, P. Gonzalez-Mozuelos, J. M. Méndez-Alcaraz and R. Castañeda-Priego, *Journal of Chemical Physics* **123**, 214907 (2005).

2. **Electrohydrodynamic instabilities of DNA aggregates: a mean field description**, R. Castañeda-Priego\*, H. H. von Grünberg and M. Kollmann, *Journal of Physics: Condensed Matter* **16**, S3987-S3998 (2004).

1. **Depletion forces in two-dimensional colloidal mixtures**, R. Castañeda-Priego\*, A. Rodríguez-López and J. M. Méndez-Alcaraz, *Journal of Physics: Condensed Matter* **15**, S3393-S3409 (2003).

Articles in Proceedings:

3. **Modeling soft matter with colloids**, S. Herrera-Velarde, F. Córdoba-Valdés, J. C. Mixteco-Sánchez and R. Castañeda-Priego\*, *AIP Conference Proceedings* **979**, 107 (2008).

2. **Charged colloids in parallel planar layers**, C. Contreras-Aburto, J. M. Méndez-Alcaraz and R. Castañeda-Priego, *AIP Conference Proceedings* **809**, 234 (2006).

1. **Interaction between colloidal particles**, R. Castañeda-Priego et. al. *Developments in mathematical and experimental physics, Volume B. Statistical Physics and beyond*, 3 (2003).

Chapters in Books:

1. Chapter 4: **“Effective interactions of charged vesicles in aqueous suspensions”**, C. Haro-Pérez, L. F. Rojas-Ochoa, V. Trappe, R. Castañeda-Priego et al., Book: *“Structure and Functional Properties of Colloidal Systems”*, Edited by Roque Hidalgo-Alvarez. ISBN: 978-1-4200-8446-7, CRC Press, Surfactant science series: Vol **146**, págs. 77-91 (2009).

Books:

1. “Daño al ADN por estrés”, **Luz Adriana Nicasio Collazo**, **Ramón Castañeda-Priego**, Enrique Hernández Lemus, Editorial Académica Española. ISBN: 978-3-659-01480-2, (2013).

### **Postdocs, PhD, Master, and Bachelor theses:**

*Postdoctoral Students Mentored (12):*

**2019:** Dr. Edilio Lázaro-Lázaro (CONACYT).

**2018:** Dr. Gustavo M. Rodríguez Liñán (PRODEP; current position: National University (UNAM)).

**2016:** Dr. Dulce María Valencia (PRODEP; current position: University of Chicago).

**2016:** Dr. César Alejandro Báez (CONACYT; ; current position: University of Hidalgo).

**2015 – 2017:** Dr. Brisa L. Arenas Gómez (PRODEP; current position: UAM-I).

**2015:** Dr. Luis Fernando Elizondo (PRODEP; current position: German Aerospace Center).

**2014:** Dr. Jorge Adrián Perera Burgos (CONACYT; current position: Yucatán Center of Research).

**2012 – 2014:** Dr. Claudio Contreras Aburto (CONACYT current position: Autonomous University of Chiapas).

**2011 – 2013:** Dr. César Daniel Estrada Alvarez (CONACYT).

**2008 – 2010:** Dr. Fernando García Flores (CONACYT; current position: National Polytechnic Institute, Zacatecas).

**2007:** Dr. Gilberto Perea Olmos (CONACYT; current position: University of Guanajuato).

**2007:** Dr. Iván Guillén Escamilla (CONACYT; current position: University of Guadalajara).

*PhD Students Mentored (18):*

**2019 – 2023:** Javier Alejandro Sánchez Gallegos, “*Physical mechanisms of gelation in patchy colloids*”.

**2019 – 2023:** Miguel Ángel Sandoval Puentes, “*Active and passive particles in external periodic fields*”.

**2018 – 2022:** Román Perdomo Pérez, “*Statistical Mechanics in Fractal-like Structures*”.

**2018 – 2022:** Jaime Martínez Rivera, “*Gravity-induced gel in binary mixtures of hard-spheres*”.

**2014 – 2019:** José Ramón Villanueva Valencia (current position: Technical University of León), “*Structure, dynamics and self-assembly of anisotropic colloidal mixture*”.

**2014 – 2018:** Alexis Torres Carbajal (current position: Autonomous University of San Luis Potosí), “*Apology of Brownian motion at nano-scale*”.

**2012 – 2016:** Reyna Méndez Camacho (co-supervisor; Autonomous University of San Luis Potosí), “*Quantum wires: a Yukawa-like approximation*”.

**2013 – 2017:** Luz Adriana Nicasio Collazo (current position: Autonomous University of San Luis Potosí), “*Modeling of DNA denaturation: an irreversible statistical thermodynamics approximation*”.

**2012 – 2015:** Alexandra Delgado González, “*Denaturation mechanisms, transport properties and phase behavior in bio-colloidal systems*”.

**2010 – 2014:** Néstor Enrique Valadez Pérez (current position: Autonomous University of Chiapas), “*Thermodynamics, structure and dynamical arrest of proteins and colloids with short-range attractive interactions*”.

**2010 – 2014:** Edith Cristina Euán Díaz (current position: Deloitte, Belgium), “*Structure and dynamical properties of colloids under confinement*” .

**2009 – 2014:** Abigail Loredo Osti (current position: Instituto Tecnológico Superior de San Luis Potosí), “*Phase behavior and structural properties of square-well and square-shoulder fluids*”.

**2009 – 2014:** Erik López Sánchez (current position: University of Xalapa), “*Demixing transition, structure and effective interactions in mixtures of asymmetric hard-spheres*”.

**2009 – 2012:** José Marcos Falcón González (current position: National Polytechnic Institute), “*Charged colloidal suspensions: a study based on the Wolf method and the renormalized jellium model*”.

**2007 – 2012:** Fidel Córdoba Valdés (current position: National Polytechnic Institute, Silao), “*Colloidal systems as model in Biological Physics*”.

**2007 – 2011:** Juan Carlos Mixteco Sánchez (current position: University of Guadalajara), “*Statistical thermodynamics of charge-stabilized colloidal suspensions*”.

**2005 – 2008:** Salvador Herrera Velarde (current position: Instituto Tecnológico Superior de Xalapa), “*Colloidal suspensions under external fields*”.

**2004 – 2007:** Mario Eduardo Cano González (current position: University of Guadalajara), “*Study of the magnetic, structural, and dynamical properties of magnetic-biological systems*”.

*Master Students Mentored (15):*

**2019 – 2021:** Ramón González Pérez, “*Determination of the effective potential between functionalized nano-colloids*”.

**2017 – 2019:** Víctor Alonso Camarena Camarena, “*Wall-particle effective interaction: the role of the morphology*”.

**2017 – 2019:** Fernando Soto Bustamante, “*Experimental evidence of reversible cluster formation determined by the second virial coefficient*”.

**2017 – 2019:** Javier Alejandro Sánchez Gallegos, “*Gelation and rigidity percolation in patchy colloids*”.

**2016 – 2017:** Juan Alejandro Ortega Gutiérrez, “Role of the hydrodynamic interactions in two-dimensional systems subjected to periodic external fields”.

**2015 – 2016:** Lisbeth Pérez Ocampo, “Measurements of depletion forces at finite concentrations”.

**2012 – 2014:** José Ramón Villanueva Valencia, “*Dynamics of dumbbells in a sea of monomers: experiments and computer simulations*”.

**2011 – 2013:** Alexis Torres Carbajal, “*Brownian dynamics from the molecular dynamics of an explicit solvent*”.

**2011 – 2013:** Mónica Ledesma Motolinía (current position: PhD at Cinvestav-IPN; Mexico), “*Study of the aggregation of peptide A $\beta$ (1-40) through light scattering as a function of the ionic strength*”.

**2010 – 2012:** Luz Adriana Nicasio Collazo, “*Equation of state of a DNA suspension and its relationship with denaturation processes*”.

**2009 – 2011:** José Arturo Ruíz Santoyo “*Short-time dynamics in a quasi-2D colloidal mixture composed of dimers and monomers*”.

**2008 – 2010:** Néstor Enrique Valadez Pérez, “*Liquid-vapor phase diagram of a protein model*”.

**2007 – 2009:** Edith Cristina Euán Díaz, “*Hydrodynamic correlation functions between colloidal particles highly confined in optical traps*”.

**2005 – 2006:** Fidel Córdoba Valdés, “*Colloidal suspensions in contact with fluctuating membranes: the role of entropic interactions*”.

**2004 – 2006:** Juan Carlos Mixteco Sánchez, “*Effective charges and thermodynamic properties of charge-stabilized colloidal suspensions*”.

*Bachelor Students Mentored (13):*

**2019 – 2020:** Salma Patricia Gutiérrez Rivera, “Transport phenomena in binary mixtures of nano-colloids”.

**2019 – 2020:** Karla Araceli León García, “DNA denaturation driven by osmotic pressure: a computer simulation study”.

**2019 – 2020:** Flor Alejandra Cruz Guzmán, “Statistical Mechanics in Non-Euclidean Spaces”.

**2016 – 2017:** Ismael Galván Paniagua, “Role of gravity on gel formation in competing interaction colloidal dispersions”.

**2016 – 2017:** Carla Ibarra Hernández, “Aging in binary mixtures of hard-spheres”.

**2012:** Antonio Alonso Ulrich Saldaña Sánchez (current position: industry), “Experimental study on the sedimentation of spontaneously produced droplets at the air/water interface”.

**2010:** Manuel Alejandro Escobedo Sánchez (current position: PhD at University of Milan), “*Study of colloidal suspensions through scattering techniques and computer simulations*”.

**2010:** Luz Adriana Nicasio Collazo, “*Process of denaturation in biomolecules*”.

**2010:** Paulina Alicia Iraís Hernández Becerra (current position: Master student at University of Guanajuato), “*Application of linear and non-linear algorithms of Brownian dynamics to the study of two-dimensional colloidal systems*”.

**2007:** Edith Cristina Euán Díaz, “*Substrate effect on a multi-layers colloidal system*”.

**2007:** Sergio Andrés Vázquez Córdova, “*Assembly and characterization of organic light emitting diodes*”.

**2002:** Lorenzo Hernández Díaz (current position: ICF-UNAM), “*Structure and entropic potentials in binary mixtures of non-additive hard-disks*”.

**2002:** Esteban Cruz Hernández (current position: Autonomous University of San Luis Potosí), “*Structure and thermodynamics of colloidal suspensions*”.

### **Popularization of Science:**

*Students Mentored (16):*

**2019:** Luis Eduardo Cantero Valadez (from: University of Guanajuato).

**2019:** Pablo Reyes Hernández (from: University of Guanajuato).

**2015:** Abigail Dinora Ramírez Córdova (from: University of Sonora).

**2015:** Juan Martín Robles Moreno (from: University of Nayarit).

**2015:** Paulina Alejandra Ojeda Martínez (from: University of Sonora).

**2015:** Pedro Fernández Calles (from: University of Sonora).

**2015:** Martín Eduardo Manrique Arriola (from: University of Sonora).

**2014:** Sara Villalobos (from: University of Chiapas).

**2013:** Linda Jaqueline Narvárez Ochoa (from: University of Chiapas).

**2013:** Mariel Alexandra Armendariz Román (from: University of Chiapas).

**2012:** José Ramón Villanueva Valencia (from: Autonomous University of Puebla).

**2012:** José Miguel Blancas Flores (from: University of Guadalajara).

**2008:** Luz Adriana Nicasio Collazo (from: University of Guanajuato).

**2007:** Edna Yañez (from: University of Guanajuato).

**2006:** Edith Cristina Euán Díaz (from: University of Zacatecas).

**2005:** Rafael Quetzal Patiño Aguilar (from: University of Guanajuato).

### **Teaching activities:**

*Undergraduate courses*

**2004 – present:** 81 courses (Physics and Physical Engineering programs)

*Graduate courses.*

**2004 – present:** 105 courses (Master and PhD programs in Physics and Engineering; University of Guanajuato, Mexico, and University of Delaware, USA).

### **Committee for Revision of Theses:**

**2004 – present:** Bachelor theses (18), Master theses (18), PhD theses (33).



## **Organization of National and International Conferences:**

**2020:** XLIV Winter Meeting on Statistical Physics, Taxco, Mexico.

**2019:** 3rd. International Workshop on Matter Out of Equilibrium, San Luis Potosí, Mexico.

**2016:** Colloidal Soft Matter, XXV International Materials Research Congress, Cancún, Mexico.

**2016:** LIX National Conference on Physics, Leon, Mexico.

**2016:** 2nd. International Workshop on Matter Out of Equilibrium, Guanajuato, Mexico.

**2015:** 3<sup>rd</sup> National Meeting of the Network on Soft Condensed Matter, Zacatecas, Mexico.

**2014:** 1st International Meeting on Matter Out-of-Equilibrium, 8 – 12 of December. San Luis Potosí, San Luis Potosí (Mexico).

**2013:** Advancing Materials Characterization with Neutrons, XXII International Materials Research Congress, Cancún, Mexico.

**2013:** XXV International Conference on Science and Technology of Complex Fluids, Puebla, Mexico.

**2013:** 2<sup>nd</sup> National Meeting of the Network on Soft Condensed Matter, Guanajuato, Mexico.

**2012:** 1<sup>st</sup> National Meeting of the Network on Soft Condensed Matter, Juriquilla, Querétaro, Mexico.

**2012:** 3<sup>rd</sup> International Conference on Supercomputing, Guanajuato, Mexico.

**2008:** XXXVII Winter Meeting on Statistical Physics, Taxco, Mexico.

**2007:** XXXVI Winter Meeting on Statistical Physics, Taxco, Mexico.

## **Presentations:**

### *International Invited Oral Presentations:*

**2019:** Reversible aggregation and colloidal cluster morphology, University of Fribourg, Switzerland, July.

**2019:** *A tale of colloids*, University of Heraklion, Crete, Greece. June.

**2019:** *Particle aggregation, gelation and glassy dynamics in colloidal dispersions*, 28<sup>th</sup> International Materials Research Congress, August, Cancún, Mexico.

**2019:** *Reversible cluster formation, gelation and glassy dynamics in colloidal dispersions*, 5<sup>th</sup> International Soft Matter Conference, June, Edinburgh, Scotland, UK.

**2019:** *Reversible cluster formation and dynamical arrest in colloidal dispersions*, XLVIII Winter Meeting on Statistical Physics, January, Puebla, Mexico.

**2018:** *Clustering and dynamical arrest in colloidal dispersions*, Institute for Multiscale Simulation, Friedrich-Alexander Universität, Erlangen, Germany, June 13.

**2018:** *Clustering and dynamical arrest in colloidal dispersions*, Institute for Multiscale Simulation, Friedrich-Alexander Universität, Erlangen, Germany, June 13.

**2018:** *Clustering and dynamical arrest in colloidal dispersions*, Departamento de la Estructura de la Materia, Física Térmica y Electrónica, Universidad Complutense de Madrid, Madrid, España, June 26.

**2018:** *Clustering and dynamical arrest in colloidal dispersions*, Facultad de Física, Universidad de Barcelona, Barcelona, España, June 28.

**2018:** *Reversible cluster formation, gelation and glassy dynamics in colloidal systems*, Gordon Research Conference on Colloidal, Macromolecular and Polyelectrolyte Solutions, February 04 – 09, Ventura, California, USA.

**2017:** Plenary talk at the National Conference on Physics, Monterrey, Mexico, October 2017.

**2017:** Cluster formation, dynamical arrest and effective interactions in soft condensed matter, *Canadian-American-Mexican Graduate Student Physics Conference 2017*, August 17 – 19, Washington, DC.

**2017:** Are rigidity and directed percolations the precursors of colloidal gelation? *CECAM Workshop “Rheology of gel networks: combining experimental, computational and theoretical insights”*, Lyon, France, June 21.

**2017:** Colloidal dynamics in restricted geometries, Université de Lorraine, Metz, Francia, June 20.

**2017:** Formation of clusters, dynamical arrest and effective interactions in many-body systems, *17<sup>th</sup> Mid-Atlantic Soft Matter meeting*, University of Delaware, Newark, Delaware, February 03.

**2016:** Clustering, dynamical arrest and effective interactions in colloidal systems, Institute for Soft Matter and Metrology, Georgetown University, November 11, Washington, DC, USA.

**2016:** Colloidal Soft Matter, *Semana Mexicana de Ciencia y Tecnología (Mexican Embassy)*, 4-6 July, Berlin, Germany.

**2016:** Dynamical arrest in adhesive hard-sphere dispersions driven by rigidity percolation, *XLV Winter Meeting on Statistical Physics*, 10-13 January, Taxco, Guerrero.

**2014:** *Some perspectives and challenges in Soft Matter*, Department of Physics, University of Ceará, Fortaleza, Brazil, August 25<sup>th</sup>.

**2012:** *Gelation, glass transition and cluster-like correlations in complex fluids with short-range attractions*, Physics Department, University of Konstanz, Germany, June 5<sup>th</sup>.

**2011:** *Colloids in confinement and under periodic substrates*, Department of Physics, University of Düsseldorf, September.

**2010:** *Colloids in confinement and under periodic substrates*, Center for Molecular and Engineering Thermodynamics, and Department of Physics, University of Delaware, September 15<sup>th</sup>.

**2010:** *Density-dependent interactions, thermodynamics, structure and dynamic arrest in charged colloidal dispersions*, Center for Neutron Research Seminar, NIST. April 9<sup>th</sup>.

**2009:** *Diffusion of colloids under confinement*, Seminar of Soft Matter, Forschungszentrum Jülich, Germany, December 1st.

**2009:** *Thermodynamics, effective interactions and structure in charge-stabilized colloidal suspensions*, Chemical Engineering Department, University of Delaware (USA), October.

**2009:** *Thermodynamics, effective interactions and structure in charge-stabilized colloidal suspensions*, Consortium of the Americas for Interdisciplinary Science, Albuquerque, New Mexico (USA), April.

**2009:** *Modeling soft matter with colloids*, Consortium of the Americas for Interdisciplinary Science, Albuquerque, New Mexico, March.

**2008:** *Thermodynamics, effective interactions and structure in charge-stabilized colloidal suspensions*, Seminar of Soft Matter, Forschungszentrum Jülich, Germany, April 3<sup>rd</sup>.

**2006:** *On the thermodynamics of charge-stabilized colloidal suspensions*, Department of Physics, University of Munich, Munich, Germany.

**2006:** *Colloidal suspensions in contact with fluctuating membranes: the role of entropic interactions*, Workshop on Soft Matter and Biomolecular Systems, León, Mexico. September 22<sup>nd</sup>.

**2006:** *Colloidal nanoparticles in contact with fluctuating fluids: the role of entropic interactions*, 2<sup>nd</sup>. Workshop on Nanoscience for Advanced Application: on the Crossroad of Disciplines, León, Mexico. September 19<sup>th</sup> – 21<sup>st</sup>.

**2005:** *Complex fluids under external fields*, XVIII Meeting on Science and Technology of Complex Fluids, 15 – 19 of August, San Luis Potosí, Mexico.

**2005:** *Hydrodynamic instabilities and cluster formation in complex fluids under external fields*, XXXIV Winter Meeting on Statistical Mechanics, 7 – 10 of January Taxco, Mexico.

**2004:** *Electrohydrodynamic instabilities of DNA aggregates under strong electric fields*, Charles Sadron Institute, Strasbourg, France, May 14<sup>th</sup>.

**2004:** *Electrohydrodynamic instabilities of DNA aggregates: A time dependent mean-field description*, Ringberg, Germany, 24 – 26 of February.

**2003:** *Structure, effective interactions and dynamics of colloidal suspensions*, Max – Planck Institute, Mainz, Germany, July 15<sup>th</sup>.

**2003:** *Dynamical effects in quasi-two-dimensional charged colloids*. Colloidal dispersions in external fields. Naurod, Germany 3 – 5 of March.

#### *National Invited Oral Presentations:*

**2018:** *Reversible aggregation, gelation and glassy dynamics in many-body systems*, Institute of Physics, UNAM, Mexico City, April.

**2018:** *Can we establish a new metric in the Condensed Matter Physics?* Department of Physics, Cinvestav, Mexico City, February.

**2017:** *Generalized phase diagram and cluster formation in colloids with competing interactions*. University of Veracruz, Xalapa, Veracruz, September.

**2015:** *Perspectives and challenges in Soft Condensed Matter*. Autonomous University of Zacatecas, Zacatecas, Zacatecas, April.

**2014:** *Brownian motion: description, applications and the extension to curved spaces.* University of Chiapas, Tuxtla Gutiérrez, September.

**2014:** *Extended law of corresponding states: origins and applications.* University of Veracruz, Xalapa, March.

**2013:** *Perspectives and challenges in Soft Condensed Matter.* Autonomous University of the Mexico City, Mexico City, October.

**2013:** *Hysteresis during pressure-driven DNA denaturation.* Department of Physics, University of Veracruz, Xalapa, September.

**2012:** *Colloidal suspensions under confinement and under periodic external fields.* Physics Institute, Autonomous University of San Luis Potosí, November 23<sup>rd</sup>.

**2012:** *Gels and glasses: a sight to arrested states of matter.* Physics School, Autonomous University of Chiapas. Tuxtla Gutiérrez, March 30<sup>th</sup>.

**2012:** *Gels, glasses and micro-phase separations in complex fluids.* Physics Department, Cinvestav-IPN. Mexico City, March 28<sup>th</sup>.

**2011:** *Gels, glasses and micro-phase separations in complex fluids with short-range attractive interactions.* Physics Department, University of Veracruz, Xalapa, November 4<sup>th</sup>.

**2011:** *Gels, glasses and aggregation in colloidal systems with short-range attractive interactions.* Department of Physics and Mathematics, Autonomous University of Puebla, Puebla, June 10<sup>th</sup>.

**2010:** *Statistical Mechanics of Colloidal Suspensions,* Center of Research in Mathematics, Guanajuato, January 10<sup>th</sup>.

**2009:** *Statistical Mechanics of Colloids,* Department of Physics and Mathematics, Autonomous University of Nuevo León, Monterrey, September 19<sup>th</sup>.

**2009:** *Colloids: model systems in Physics, Chemistry and Biology,* Cinvestav-Monterrey, February 18<sup>th</sup>.

**2009:** *The Physics of the Mesoscopic World,* Department of Physics and Mathematics, Autonomous University of Puebla, Puebla, February 5<sup>th</sup>.

**2008:** *Colloids: model systems in Soft Condensed Matter,* Applied Physics Department, Cinvestav-Mérida, June 19<sup>th</sup>.

**2008:** *Thermodynamics, structure and effective interactions in charge-stabilized colloidal suspensions,* Institute of Physics, Autonomous University of Puebla, Puebla, March 7<sup>th</sup>.

**2007:** *Thermodynamics, structure and effective interactions in charge-stabilized colloidal suspensions,* Institute of Physics, Autonomous University of San Luis Potosí, San Luis Potosí, November.

**2007:** *Introduction to Complex Fluids,* Department of Physics, Autonomous University of Sinaloa, Culiacán, November.

**2007:** *The Physics and the Mesoscopic World,* Physics Department, University of Veracruz, Xalapa, September 28<sup>th</sup>.

**2007:** *Statistical thermodynamics of charge-stabilized colloidal suspensions*, School of Physics, Autonomous University of Zacatecas, Zacatecas, May 9<sup>th</sup>.

**2007:** *The Physics and the Mesoscopic World*, School of Physics and Mathematics, Autonomous University of Chiapas, Tuxtla Gutiérrez, March 26<sup>th</sup>.

**2007:** *The Physics and the Mesoscopic World*, School of Physics, Autonomous University of Sinaloa, Culiacán, April 26<sup>th</sup>.

**2006:** *Statistical thermodynamics of charge-stabilized colloidal suspensions*, Physics Department, Metropolitan Autonomous University, Mexico City, October 26<sup>th</sup>.

**2006:** *Complex Fluids in External Fields*, Applied Physics Department, Cinvestav-Querétaro, Querétaro, March.

**2006:** *Complex Fluids in External Fields*, School of Physics, Autonomous University of Zacatecas, Zacatecas, February.

**2006:** *Complex Fluids in External Fields*, School of Physics, University of Guadalajara, Guadalajara; February.

#### **Academic visits for Invitation:**

**2019:** Academic Stay at the Physics Department of the University of Düsseldorf (Germany), May – July.

**2018:** Academic Stay at the Physics Department of the University of Düsseldorf (Germany), May – July.

**2016 – 2017 (Sabbatical):** Center for Neutron Research, The National Institute of Standards and Technology, Maryland, USA, September 2016 – August 2017.

**2016:** Physics Department, University of Düsseldorf, Germany, May 2<sup>nd</sup> – July 24<sup>th</sup>.

**2014:** Physics Department, University of Düsseldorf, Germany, October 19<sup>th</sup> – November 4<sup>th</sup>.

**2014:** Physics Department, University of Fortaleza, Brazil, August 23<sup>rd</sup> – 30<sup>th</sup>.

**2013 – 2014:** Physics Department, University of Düsseldorf, Germany, November 15<sup>th</sup>, 2013 – January 15<sup>th</sup>, 2014.

**2013:** Center for Neutron Research, The National Institute of Standards and Technology, Maryland, USA, 12 – 26 of June.

**2012:** Physics Department, University of Düsseldorf, Germany, May 26<sup>th</sup> – July 24<sup>th</sup>.

**2011:** University of Vienna (Austria) and University of Düsseldorf (Germany), 5-16 of September.

**2010 – 2011 (Sabbatical):** Chemical and Biomolecular Department, University of Delaware, February 2010 – June 2011.

**2009:** Freiburg Institute for Advanced Studies, University of Freiburg, Freiburg, Germany, November 24<sup>th</sup> – December 7<sup>th</sup>.

**2009:** Consortium of the Americas for Interdisciplinary Science, Albuquerque, New Mexico, 23 of March – 2 of April.

**2007:** Chemistry Institute, University of Graz. Graz, Austria, June.

**2007:** Department of Physics, University of Vienna, Austria, June.  
**2006:** Department of Physics, Technical University of Munich, Munich, Germany, July.  
**2006:** Department of Physics, University of Freiburg, Germany. July.  
**2006:** Max-Planck Institute. Stuttgart, Germany. June.  
**2005:** Department of Physics, Technical University of Munich, Munich, Germany. September – October.  
**2005:** Max Planck Institute. Stuttgart, Germany, March.  
**2005:** Department of Physics, University of Konstanz. Konstanz, Germany, March.  
**2005:** Chemistry Institute, University of Graz. Graz, Austria. February – March.  
**2004:** Chemistry Institute, University of Graz. Graz, Austria. May.  
**2004:** Department of Physics, University of Strasbourg. Strasbourg, France. May.  
**2003:** Max-Planck Institute. Mainz, Germany. July.  
**2002:** Department of Physics, University of Konstanz. Konstanz, Germany. September.

### **Collaborations:**

1. Prof. Ana Laura Benavides Obregón, University of Guanajuato (Mexico): Phase behavior of simple and complex fluids.
2. Prof. Alejandro Gil-Villegas Montiel, University of Guanajuato (Mexico): Structure and thermodynamic properties of charge-stabilized colloidal suspensions.
3. Prof. Magdaleno Medina-Noyola, University of San Luis Potosi (Mexico): Dynamical arrest in complex fluids.
4. Prof. José Miguel Méndez-Alcaraz, Cinvestav (Mexico): Effective interactions in colloidal suspensions.
5. Prof. Luis Fernando Rojas-Ochoa, Cinvestav (Mexico): Structure and effective interactions of complex fluids.
6. Prof. Gabriel Pérez-Ángel, Cinvestav-Mérida (Mexico): Structure and transport phenomena in complex fluids.
7. Prof. Pavel Castro Villarreal, Autonomous University of Chiapas (Mexico): Transport phenomena in curved surfaces.
8. Prof. Enrique Hernández Lemus, National Institute of Genomics Medicina (Mexico): Hysteresis in pressure-driven DNA denaturation.
9. Prof. Norman J. Wagner, University of Delaware (USA): Gelation, glass transition and cluster formation in nanoparticle dispersions.
10. Prof. Stefan U. Egelhaaf, University of Düsseldorf (Germany): Structure and dynamics of colloids in modulated potentials.
11. Prof. Gerhard Nägele, Forschungszentrum Jülich (Germany): Diffusion in complex fluids with competing interactions.
12. Prof. Emmanuel Trizac, University of Paris VI (France): Charge renormalization in charge-stabilized colloidal suspensions.

13. Prof. Veronique Trappe, University of Fribourg (Switzerland): Dynamical arrest in charged colloids.
14. Prof. Francois Peeters, University of Antwerp (Belgium): Single-file diffusion and particle transport in narrow channels.
15. Prof. Elisabeth Schöll-Paschinger, University of Natural Resources and Life Sciences, Vienna (Austria): Phase-diagram of simple and complex liquids.
16. Prof. Vladimir Lobaskin, University College Dublin (Ireland): Primitive model simulations of charged colloids.