

RESUME

DEPARTMENT OF PHYSICS AND ASTRONOMY IOWA STATE UNIVERSITY

Spring 2025

ALEX TRAVESSET

PROFESSOR

B BASE

PERSONAL HISTORY

2013-present Professor, Dept. of Physics and Astronomy, Iowa State University

2008-2013 Associate Professor, Dept. of Physics and Astronomy, Iowa State University

2002-2008 Assistant Professor, Dept. of Physics and Astronomy, Iowa State University

2002-Present Associate Scientist, Ames Laboratory
BCB (Bioinformatics and Computational Biology), Iowa State University

2000-02 Research Assistant, University of Illinois at Urbana-Champaign

1997-00 Research Associate, Syracuse University, Physics Department

1992-97 Ph.D., Universitat de Barcelona
Title: “Renormalization Group: Techniques and Applications”
Advisor: D. Espriu

1992 B.S., Universitat de Barcelona

MEMBERSHIP

APS member: Division of Condensed Matter Physics, Polymer Physics and Biological Physics. Topical group of Non-Linear and Statistical Physics and GSOF.

ACS member:

HONORS AND AWARDS

2024 Rosemary Schnell Distinguished Lectureship for the 2024-2025 Frontiers in Nanotechnology series awarded by the International Institute for Nanotechnology at Northwestern University

2013 Faculty leader (Strengthening the Professoriate at ISU).

2008 CAREER Award from the National Science Foundation.

2008 DOE Outstanding Mentor Award

1997 Premi extraordinary de Doctorat, given to the best Ph.D. at the University of Barcelona

1994-97 Graduate Fellowship from the Generalitat de Catalunya (Government of Catalonia)

TEACHING RESPONSIBILITIES AND STUDENT EVALUATIONS

(Updated 2/14/2022)

The average student evaluation scores given below are from the following question on the evaluation form, "Rate the overall effectiveness of the instructor as a teacher." On the instruction sheet accompanying the evaluation form, the students are asked to use a scale from (5) to (1), where 5=very high, 4=above average, 3=average, 2=below average, 1=very low. "Average" denotes the typical rating of comparable university courses and instructors.

sem/Yr	Course	Sect	Type	Students		Instructor		Course	
				Total Enrolled	% Responded	Overall Rating	Dept Mean for like Instructors	Overall Rating	Dept Mean for like Courses
F21	241	2/H2	Lec	19	47.37	3.44	3.71	3.33	3.37
S21*	564	1	Lec	5	80.0	3.50	4.55	3.50	4.42
F20*	115	6	Rec	25	40			3.4	
F20*	115	5	Rec	20	60			4.42	
S20*	564	1	Lec	14	35.7	3.4	4.6	4.0	4.5
<i>*S20 & F20 evaluations affected by the COVID-19 pandemic.</i>									
F19	241	2/H2	Rec	19	52.6	3.9	4.1	3.6	3.8
S19	564	1	Lec	15	46.7	3.9	4.4	3.9	4.3
F18	241	1/H1	Rec	12	50	3.0	4.0	3.2	3.8
F18	241	1/H2	Rec	12	25	3.7	4.0	3.7	3.8
S18	564		Lec	13	62	4.5	4.5	4.8	4.3
F17	304	A	Lec	15	53.3	4.3	4.5	3.8	4.2
S17	531		Lec	19	52.6	4.4	4.5	4.1	4.3
F16	304	A	Lec	30	66.7	3.7	4.2	3.2	4.0

sem/Yr	Course	Sect	Type	Students		Instructor		Course	
				Total Enrolled	% Responded	Overall Rating	Dept Mean for like Instructors	Overall Rating	Dept Mean for like Courses
S16	531		Lec	24	75.0	4.4	4.6	4.2	4.4
F15	222H	2	Rec	8	87.5	4	3.98	4.14	3.74
F15	222H	1	Rec	21	42.9	4.11	3.98	3.56	3.74
S15	531		Lec	13	69.2	4.67	4.57	4.67	4.44
F14	241	2/H2	Rec	19	68.4	4.69	4.72	4.69	4.67
F14	241	1/H1	Rec	7	71.4	4.8	4.72	4.6	4.67
S14	531		Lec	15	73.3	2.45	4.06	2.55	4.01
F13	115		Lec	127	74	2.29	3.7	2.12	3.33
F12	304		Lec	29	55.2	3.63	4.08	3.06	3.81
F12	115		Lec	114	77.2	2.19	3.76	1.82	3.37
S12	222	18	Rec	2	50	4	3.8	2	3.4
F11	241	1/H1	Rec	12	75	3.9	4.1	3.7	3.8
F11	241	2/H2	Rec	11	73	3.9	4.1	3.8	3.8
F11	304		Lec	17	77	3.6	4.1	3	3.9
S11	221	24	Rec			1.9	4.1		
S11	221	25/H3	Rec			2.9	4.1		
S11	221	40	Rec			3.0	4.1		
F10	304		Lec	17	58.8	3.8	4.3	3.3	4.1
S10	551		Lec	8	37.5	4.5	4.4	3.3	4.3
F09	304		Lec	17	94.1	4.1	4.3	3.6	4.1
F08	364		Lec	7		4.9	4.6		
S08	365		Lec	12		4.1	4.1		
F07	364		Lec	21		3.5	4.1		
S07	365		Lec	4		5	4.4		
F06	364		Lec	7		4.5	4.4		
S06	222	25	Rec	23		4	3.8		4.1
S06	222	14	Rec	24		4.3	3.8		4.1
S06	222	13	Rec	22		3.7	3.8		4.1
F05	221	Z	Lab	7		4.2	4.2		4.2
F05	512		Lec	10		4	4.5		
S05	511		Lec	24		3.9	4.4		
S05	221	14	Rec	28		2.9		3.8	3.9
F04	512		Lec	6		3.4	4.4		
S04	511		Lec	24		3.4	4.4		
S04	221	31	Rec	24		4.4		3.8	3.8
S04	221	31	Rec	24		4.5		3.8	4
F03	512		Lec	5		3.5	4		

sem/Yr	Course	Sect	Type	Students		Instructor		Course	
				Total Enrolled	% Responded	Overall Rating	Dept Mean for like Instructors	Overall Rating	Dept Mean for like Courses
S03	511		Lec	13		4.3	4		

MENTORING**Postdocs:**

- 1) Y. Chushack (2004-2005) currently permanent research at US-Air force, Dayton OH.
- 2) C. Lorenz (2006-2007) currently professor at Kings college London.

Graduate Students:

- 1) Joshua Anderson (2005-2009) Awarded with the *Graduate College Research Excellence Award* (2009). Currently, Research Faculty at the University of Michigan at Ann Arbor.
- 2) Wei Bu (2004-2009) co-directed with Dr. David Vaknin, followed up with a postdoc at University of Illinois and Argonne National Lab.
- 3) Xiaofang Guo (2003-2009) co-directed with Prof. Evans, followed up with a master in Econophysics.
- 4) Chris Knorowski (2009-2015): Physics student 2015. Awarded the *Graduate College excellence award*.
- 5) Sweta Vangaveti (2009-2014):BCB* student. Followed a postdoc position at SUNY Albany NY.
- 6) Abhijeet Kapour (2010-2014): BCB* student. Followed a postdoc position at Icahn School of Medicine at Mount Sinai, New York City, NY.
- 7) Nathan Horst (2014-2019) Materials Science and Engineering* student, work in industry.
- 8) Xun Zha (2017-2021)
- 9) Elizabeth Macias (2019-2023)
- 10) Prapti Kakkar (2023-)
- 11) Abhishek Kumar (2024-)
- 12) Walker Hayes (2024-)

*BCB: Bioinformatics and Computational Biology.

** Department of Materials Science and Engineering

Summer Internships: August O'Neil (Iowa State University) 2025, Muajeh Lee (Denver University) 2024, Joshua Knott (Iowa State) 2024, Alex Upah (Iowa State)

2023, Jonah Hallstrom (Arizona State) 2021-2022, Kevin Marin (The College of New Jersey) 2020, Matthew Pham (Iowa State) 2020, Jacob Austin (Simpson College) 2019, Carter Huber (South Dakota State) 2018, Thomas Waltman(Iowa State) 2017, Curtis Waltman (Iowa State) 2016, Lord Moses (Delaware State) 2014, Nathan Horst (Creighton) 2013, Tim Henderson (Vilanova) 2012, Casey Scheetz (Boone Community College) 2011, Seth Burleigh (Louisiana State University) 2010, Chris Knorowski (Virginia Tech) 2007.

Research Experience for Undergrads in Physics: Adam R. Schoen (2003), D. Lastine (2003), Jon Kent (2003-2005), Rick Rainy (2003-2005), M. Marken (2005), S. Sutton (2005), Noah Van Damm (2006), Stephen Bond (2008), Jeffrey Kollasch (2009-2012), Dan Voss (2010), Anthony Allevin (2011), Cristopher Fogerty (2012), Curtis Waltman(2015-2018), Noah Blanskoop (2016), Alexander Stephens (2017), Thomas Waltmann (2017-2019), John Mobler (2018). Daniel Buser (2018-2019), Matthew Pham (2019-2021), Jacob Austin (2019-2021), Jonah Hallstrom (2021-2023), Alex Upah(2022-), Joshua Knott (2024-2024), Muajey Lee(2024-2024), Fanqi Li(2024-2025), August O'Neil (2024-)

Rotation in Biochemistry: A. Kapoor (2009), Sweta Vangaveti (2008), Ying Zhen (2003) - BCB student

Research Experience for Undergrads in Computer Science: V. Sriram (2003), Brian Allen (2003-2005), Xiauyoun Tang (2004), E. Gurantee (2004-2005) ,Y. Jing (2005-2006).

SERVICE

1. Physics Department Colloquia fall 2003-spring 2005
2. CMP seminar fall 2003-spring 2004
3. Classical Qualifier Exam Spring 2004 and 2006
4. Workload teaching committee Spring 2007
5. Undergraduate and graduate student recruitment 2007-2008
6. Undergraduate and graduate student recruitment (Chair) 2008-2018
7. Modern Qualifier exam (Chair) Spring 2011
8. Promotion and tenure 2011-2012
9. Undergraduate advisor 2011-
10. FLC facilitator (co-Chair) 2012-2016
11. Qualifier exam (Supervisor) 2013
12. Qualifier exam (Supervisor) 2015
13. Qualifier exam 2017
14. Qualifier exam 2018
15. Qualifier exam 2019
16. Award Committee 2019-
17. Curriculum committee 2021-2024
18. Post-Tenure review 2022-2024
19. Post-Tenure review (Chair) 2024-

PROFESSIONAL ACTIVITIES

COLLABORATORS (Last five years)

Oleg Gang (Columbia), Yongang Ke (Emory), Ryan Hartman (New York University), Roya Zandi (University of California Riverside), Carles Calero (ICMAB, Barcelona) Dmitri Talapin (U Chicago), Gregory Grason (University Massachussets), Bogdan Dragnea (Indiana University), Rudolph Podgornik (Chinese Academy), Sharon Glotzer (Michigan), Hongxia Guo (Chinese Academy), Robert Macfarlane (MIT), Maksym Kovalenko (ETH Zurich), Qian Chen (University of Illinois), Mario Tagliazucchi (Universidad de Buenos Aires).

COLLABORATORS (in campus)

D. Vaknin (Ames Lab), S. Mallapragada (Chemical Engineering), Kai Ming Ho (Physics), C.Z. Wang (Ames Lab), Feng Zhang (Ames Lab), Jim Evans (Physics).

EDITORIAL ACTIVITIES

Associate Editor for **Computational Materials Science** (COMMAT) (2018-Present)

Referee for *Physical Reviews Letters*, *Science*, *Nature*, *Nature Materials*, *Reviews of Modern Physics*, *Journal of the American Chemical Society (JACS)*, *Proceedings of the National Academy of Sciences (PNAS)*, *ACS Nano*, *Langmuir*, *Journal of Physical Chemistry*, *EPL journal*, *Physical Review E*, *Biophysical Journal*, *Polymer*, *Modern Physics Letters*, *Physics Letters A*, *Macromolecular Rapid Communications*, *Macromolecules*, *Journal of Statistical Physics*, *Journal of Statistical Mechanics Theory and Experiment (JSTAT)*, *Computing in Science and Engineering*, *Soft Matter*, *Journal of Chemical Physics (A and B)*, *Transactions on Reconfigurable Technology Systems*.

REFeree: FEDERAL AGENCIES

Referee for NSF 2003-present: more than 15 panels, three of them MRSEC. Also, innumerable projects reviewed by e-mail.

Referee for DOE 2011-present.

Referee for Air Force of Scientific Research (AFOSR) 2016-present

REFeree: INTERNATIONAL AGENCIES

Referee for The European Research Council (ERC), European Union, 2024-

Referee for CONICYT (Comision Nacional de Investigacion Cientifica y Tecnica) Chile, 2008-present.

Referee for NSERC (National Sciences and Engineering Research Council) Canada, 2009-present

Referee for FNR (Fonds National de la Recherche) Luxemburg, 2011-present

Referee for ISF (Israel Science Foundation) Israel, 2012-present

SUBMITTED GRANTS

NSF-DMREF 2522721 “Collaborative Research: DMREF: Assembly of Nanocrystal Materials for Rational Design of a New Generation of Batteries”, 2000K, PI: Travesset, coPI: Shan Zhou, Projna Banerjee.

PRF-PD #4897 (Amer. Chemical Society – PRF, ND) “Electrostatics of Low Dielectric Constant Media: Asphaltene as a Case Example”, 120K, PI: Travesset

CURRENT FUNDING

August 2024- July 2027 NSF-2492548 “Programmable Assembly of Nanocrystals: Many Body Effects, Dynamics and Multifunctional Materials”, 435K (single PI).

October 2021 - September 2024 DOE, Materials Chemistry Program, “FWP AL-08-510-001: MetaMaterials Assembly and properties”, 80 K/year. (CoPI, PI: S. Mallapragada)

PAST FUNDING

October 2018- September 2021 DOE, Materials Chemistry Program, “FWP AL-08-510-001: Self-Assembly of MetaMaterials”, 80 K/year. (CoPI, PI: S. Mallapragada)

September 2016-2020 NSF, DMR-CMMT 1606336 “Design Principles for Ordering Nanoparticles into Super-crystals”, 385K PI: Travesset (single PI).

November 2015-October 2018 DOE, Materials Chemistry Program, “FWP AL-08-510-001: Self-Assembly of MetaMaterials”, 80 K/year. (CoPI, PI: S. Mallapragada)

September 2016-October 2018, DOE-LDRD-Ames Lab , “GPU accelerated Software for Materials Simulation and Discovery”, 161415\$ (CoPI, PI: Feng Zhan).

November 2011-October 2014 DOE, Materials Chemistry Program, “FWP AL-08-510-001: Bioinspired Materials”, 73.7 K/year. (coPI, PI: S. Mallapragada)

September 2008-August 2014 DMR-0748475, "CAREER: The Physics of Signaling in Cell Membranes: Phosphoinositides and Small GTPases as a Paradigm.", 413K

November 2005-October 2011 DOE, Materials Chemistry Program, “Bioinspired Polymers: Self-assembling Hydroxyapatite-Organic Nanocomposites”, 48 K/year.

October 2004- April 2008 NSF, DMR-0426597 "NSF-ITR-(ASE)-(sim+int+dmc)
"Geometry, Order and Packing: New Computational and Analytical Tools", 255K

July 2007-June 2009 ICAM, "Theory of "Scar" Defects in Soft Materials with
Orientational Order: Building blocks for Self-assembly?", (jointly with Prof.
Selinger, LCI at Kent State University) 40K.

OTHER PROFESSIONAL ACTIVITIES:

PhD Committees (completed)

1. K. Besteman, student at the Kavli Institute for nanoscience at Delft University (Netherlands). PhD advisor, Prof. S. Lemay (2006).
2. M. A. Albao, student at the Department of Physics and Astronomy, Iowa State University. PhD advisor, Prof. J. Evans (2008).
3. Joshua Anderson, Department of Physics and Astronomy, Iowa State University. PhD advisor: Alex Travesset (2009).
4. Wei Bu, Department of Physics and Astronomy, Iowa State University, PhD Advisor: Dr. David Vaknin and Alex Travesset (2009).
5. Xiaofang Guo, Department of Mathematics and Physics and Astronomy, Iowa State University, PhD advisor: Prof. J. Evans and Alex Travesset (2009).
6. Feng Wei, Department of Physics and Astronomy, Iowa State University, PhD advisor: Prof. Lajoie (2011).
7. Min Cao, Department of Physics and Astronomy, Iowa State University, PhD advisor, Prof. Shinar (2011).
8. Nacu Hernandez (2012), Chemical and Biological Engineering, Iowa State University, PhD advisor Prof. E. Cochran.
9. Scott Boyken (2013), Biochemistry Biophysics and Molecular Biology, Iowa State University, PhD advisor: Prof. Amy Andreotti.
10. Wenjia Liu (2014), Department of Physics and Astronomy, Iowa State University, PhD advisor: Prof. B. Schmittmann.
11. Sweta Vangaveti (2014), Student in BCB, Iowa State University, PhD advisor: Alex Travesset
12. Abhijeet Kapoor (2014), Student in BCB, Iowa State University, PhD advisor: Alex Travesset
13. Christopher Knorowski (2015), Department of Physics and Astronomy, Iowa State University, PhD advisor: A. Travesset.
14. Kristine Manibog (2016), Department of Physics and Astronomy, Iowa State University, PhD advisor: Prof. S. Sivasankar.
15. Lin Yang (2017), Department of Physics and Astronomy, Iowa State University, PhD advisor: Prof. K. Ho.
16. Srikanth Nayak (2018), Department of Chemical Engineering, Iowa State University, PhD advisor: Prof. Surya Mallapragada.
17. Srilok Srinivasan (2018), Department of Mechanical Engineering, Iowa State University, PhD advisor: Prof. G. Balasubramanian.

18. Carlos Vergel-Infante (2019), Department of Physics and Astronomy, Iowa State University, PhD advisor, Prof. S. Prell.
19. Nathan Horst (2020), Materials Science and Engineering, Iowa State University, PhD advisor: Alex Travesset.
20. Alex King Lai, Department of Physics and Astronomy, Iowa State University, PhD, Advisor: James Evans (2020).
21. Xun Zha, Department of Physics and Astronomy, Iowa State University, PhD, advisor: Prof. A. Travesset (2021)
22. Yuangchang Zhao, Department of Physics and Astronomy, Iowa State University, PhD advisor: Xuefeng Wang (2021).
23. Megyao-Huang, Department of Physics and Astronomy, Iowa State University, PhD advisor: Kerry Whisnant (2021).
24. Soham Pal(2022), Department of Physics and Astronomy, Iowa State University, PhD, advisor: Prof. J. Vary
25. Hyeong Kim (2022), Department of Chemical and Biochemical Engineering, Iowa State University, PhD, advisor: Surya K. Mallapragada
26. Elizabeth Macias(2023), Department of Physics and Astronomy, Iowa State University, PhD, advisor: Prof. A. Travesset.

PhD Comittees (ongoing)

27. Prapti Kakkar (2027), Department of Physics and Astronomy and Chemical and Biological Engineering, Iowa State University, PhD, advisor: Prof. A. Travesset and Surya Mallapragada.
28. Abhishek Kumar (2028),), Department of Physics and Astronomy and Department of Chemistry, Iowa State University, PhD, advisor: Prof. A. Travesset and Davit Potoyan.
29. Walker Hayes (2028)), Department of Physics and Astronomy, Iowa State University, PhD, advisor: Prof. A. Travesset.

Organization of Workshops and Symposium, etc.

1. “Nanoparticle Assemblies: A new form of Matter with Classical Structure and Quantum Function”, Kavli Institute Santa Barbara, (2023). Organized with: Michael Engel, Monica Olvera de la Cruz, Laura Na Liu and Eran Rabani.
<https://www.kitp.ucsb.edu/activities/nanoassembly23>
2. “HOOMD-Blue, the first ten years”, special Issue in COMMAT, edited together with Joshua Anderson at Michigan.
3. “Interfaces, topological defects and flexible packings as Free Energy minimum: Applied Geometry in Condensed-Matter” Aspen CO, June 17th –July 4th (2008). (with Christian Santangelo (university of Pennsylvania) and Rob Kusner (University of Massachussets))
4. “Control and Architecture in Directed Macromolecular Self-Assembly” Denver CO, APS meeting, March 5th (2007).
5. “Biological Membranes: Current Challenges” Benasque (SPAIN), July 31st-August 17th (2005)
(with Prof. McKintosh, Vrije Universiteit).
<http://benasque.ecm.ub.es/2005biomembranes/2005biomembranes.htm>

Invited Talks (Conferences)

1. Computational Workshop, DNA30 at Johns Hopkins University, September 2024.
2. NSF SSMC Workshop on Nanomaterial Assemblies: logistics and action items, Group leader on the topic “The Science of Assembly” together with Chris Murray and Yadong Yin, University of Chicago, June 2024.
3. March Meeting Minneapolis, Invited talk on Machine Learning in MD simulations, 2024
4. Structure Design and Emerging Phenomena in Nanoparticle Assemblies, What’s next?, KITP Santa Barbara, May 2023
5. ACS Colloid Meeting, Virtual, June 2021.
6. “Optimal Design of Soft Matter”, Cambridge, UK, May 2019.
7. 13th International Symposium on Polymer Physics (PP2018), Xian, China, June 2018.
8. Tsinghua-US joint conference in Polymers, Beijing, China, October 2017.
9. The 7th CCS-PD/ACS-PMSE Joint Symposium on Frontiers in Polymer Science and Engineering, Chengdu, China, October 2017.
10. Workshop “Water at the nanoscale”, Barcelona Power Knowledge, Barcelona, Spain April 2014.
11. “Challenges and Opportunities of Polymer and Soft Matter Theory and Simulation”, NSF sponsored workshop, Santa Barbara, CA, October 2013.
12. “Coarse Graining” Fall 2013 meeting of the American Chemical Society”, Indianapolis, IN, September 2013.
13. “Programmable Self-Assembly of Matter”, New York, NY, July 2013.
14. Nanofrontiers Meeting, Columbia, MO, June 2013.
15. National Academy, Condensed Matter and Materials Research Committee, DC, May 2012.
16. Spring 2012 meeting of the American Chemical Society, San Diego, CA, March 2012.
17. Fall 2011 meeting of the American Chemical Society, Denver CO, September 2011.
18. 2nd International conference of nanotechnology, Ottawa, ON, Canada, July 2011.
19. International Conference on fluid interfaces, Brookhaven, NY, June 2011.
20. “GPUs in computational science: Fall 2010 meeting of the American Chemical Society”, Boston, MA, August 2010.
21. “Polymers and nanoparticles: Fall 2009 meeting of the American Chemical Society”, Washington DC, August 2009.
22. “Path to Petascale workshop”, Urbana, IL, April 2009.
23. “Electrostatic effects in Soft matter: bridging experiments theory and simulation”, Barcelona, Spain, April 2008.
24. “31st New England Complex Fluids Workshop”, Providence, RI, June 2007.
25. “Computational Complexity and Bioinformatics”, Urbana, IL, May 2005.
26. “Understanding Complex Systems”, Urbana, IL, May 2003.

Invited Talks (Seminars and Colloquia)

27. University of California Riverside, Colloquia in the Physics Department, April 2023
28. GEOMPACK webinar, Virtual, March 2022.
29. NiNCs (News in Nanocrystals), Virtual, April 2022.

30. MIT (Massachusetts Institute of Technology), Cambridge, MA, September 2019.
31. Universitat de Barcelona, Barcelona, June 2018.
32. Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, China, June 2018.
33. University of Utah, UT, April 2018.
34. University of California Riverside, CA, November 2017
35. Chinese Academy of Sciences, Beijing, China, October 2017
36. University of Chicago, MICCoM center, IL, July 2017.
37. Georgia Tech, GA, February 2017.
38. Columbia University, NY, September 2016
39. Northwestern University, IL, July 2016.
40. University of Chicago, IL, July 2016.
41. Brookhaven National Lab, NY, January 2015.
42. University of Oregon, Eugene, April 2014.
43. Brookhaven National Lab, NY, March 2010.
44. Northwestern University, Chicago, IL, September 2009.
45. University of Illinois at Chicago, Chicago, IL April 2009.
46. University of Pennsylvania, Department of Physics, Philadelphia, PA, January 2009.
47. North Dakota State University, Fargo, ND, January 2009.
48. Syracuse University, Physics Department, Syracuse, NY, September 2007.
49. Brown University, Physics Department, Providence, RI, June 2007.
50. Iowa State University, Chemistry Department, Ames, IA, March 2007.
51. Kavli Institute for Nanoscience, Delft, Netherlands, December 2006.
52. Liquid Crystal Institute at Kent State, Kent, OH, November 2006.
53. University of Northern Iowa, Physics Department, Cedar Falls, IA, April 2006.
54. Vanderbilt University, Mathematics Department, Nashville, TN, April 2005
55. Aspen Center for Physics, Aspen, CO, June 2004.
56. Syracuse University, Syracuse, Physics Department, NY, March 2004
57. Los Alamos National Lab., Los Alamos, NM, October 2003.
58. University of Iowa, Physics Department, Iowa City, IA, September 2003.
59. Centro De Estudios Cientificos, Valdivia, Chile, June 2002.
60. University of Minnesota, Physics Department, Minneapolis, MN, March 2002.
61. University of Massachusetts, Physics Department, Amherst, MA, February 2002.
62. Cornell University, Physics Department, Ithaca, NY, April 2000.
63. University of Illinois at Urbana, Physics Department, January 2000.
64. Max Planck Institute for Polymers, Mainz, Germany, January 2000.
65. Max Planck Institute for Colloids and Interfaces, Golm, January 2000.
66. Universitat de Barcelona, Physics Department, Spain, January 2000.
67. Universitat de Barcelona, Physics Department, Spain, January 1999.
68. Universitat de Barcelona, Physics Department, Spain, January 1998.
69. University of Orsay, Paris, France, May 1994.

Talks Presented in Outreach Activities

1. Augsburg College, November 2002.
2. Grinnell College, December 2003.
3. Western Illinois University, February 2004.
4. St. Olaf College, February 2005
5. Benedictine College, April 2005
6. Minnesota State University at Mankato, February 2006
7. Truman State University, Kirksville, April 2008
8. Creighton University, February 2014
9. Southern Minnesota State University, October 2018.
10. Pabna University of Science and Technology (Bangladesh), (virtual) July 2021

Talks or posters presented in conferences (contributed)

1. March Meeting, 2024, contributed talk.
2. Gordon Conference on Self-Assembly and Supramolecular Chemistry, Les Diableretes, Switzerland, May 2019.
3. APS march meeting, Boston (USA), March 2019.
4. APS march meeting, LA (USA), March 2018.
5. APS march meeting, New Orleans (USA), March 2017.
6. APS march meeting, Baltimore (USA), March 2016.
7. APS march meeting, Baltimore (USA), March 2013.
8. APS march meeting, Dallas TX (USA), March 2011.
9. APS march meeting, Portland OR (USA), March 2010.
10. APS march meeting, Pittsburgh PA (USA), March 2009.
11. Gordon conference on Liquid Crystals, New London NH (USA), June 2007.
12. APS march meeting, Denver CO (USA), March 2007.
13. APS march meeting, Baltimore MD (USA), March 2006
14. Focusing Stress in Soft Interfaces, Chicago IL (USA), November 2005
15. APS march meeting, Los Angeles (USA), March 2005.
16. APS march meeting, Montreal QC (Canada), March 2004.
17. APS march meeting, Austin TX (USA), March 2003.
18. "Understanding Complex Systems," May, Urbana, IL.2003.
19. APS march meeting, Indianapolis, IN (USA), March 2002.
20. 83rd Rutgers Meeting on Statistical Mechanics, Rutgers University, NJ (USA), Dec. 2001.
21. APS march meeting, Seattle WA (USA), March 2001.
22. 81st Rutgers meeting on Statistical Mechanics, Rutgers University, NJ (USA), Dec. 2000.
23. XVIth International Symposium on Lattice Field Theory, Boulder CO (USA), July 1998.
24. MRST 98: Towards the theory of Everything, McGill University (Canada), May 1998.
25. XVth International Symposium on Lattice Field Theory, Edimburgh (UK), July 1997.
26. ICTP workshop on Statistical Mechanics, ICTP Trieste (Italy), March 1996.
27. European Network on Analytical and Numerical Investigations on Random Geometries, University of Reykjavik (Iceland), January 1994.
28. European Network on Analytical and Numerical Investigations on Random Geometries, University of Orsay (Iceland), May 1994.
29. First meeting of Italian and Spanish Collaboration in Lattice Field theory, Jaca (Spain), December 1993.

PAPERS AND PUBLICATIONS

<u>Date</u>	Refereed Publs. In Print	Books/ Chapters	Invited Papers/Talks	Contributed Papers	Other
2002	3				
2003	2		3		
2004	2		2		
2005	5		2		1
2006	7		3	1	1
2007	6		4		1
2008	7		5		1
2009	2		6		
2010	1		3		3
2011	6		6		3
2012	4		2		2
2013	1		3		
2014	5		3		
2015	2		1		1
2016	4		3		1
2017	8		6		2
2018	7		3		2
2019	7		5		2
2020	9				1
2021	5				3
2022	5				3
2023	5				1

2024	5		3		2
-------------	---	--	---	--	---

In parenthesis the number of papers currently under review.

Citations

Source for citations is **Web of Science (core collection only)**. The number of citations is the one quoted under *author: Travesset, A** as they appear, without any corrections for missing citations due to misspelled names, errors in references, etc.

Number of citations Web of Science: 5641 (as of April 3rd 2024)

Number of citations SCOPUS: 5894 (as of April 3rd 2024)

Number of citations Google Scholar: 7942 (as of April 3rd 2024)

h-number: 38 (web of science, core collection) 40 (Scopus) 45 (Google scholar)

Refereed Publications

1. “Temperature dependence of phase diagrams and dynamics in nanocrystal assembly by solvent evaporation”, Alex Upah, Leandro Missoni, Mario Tagliazucchi and Alex Travesset, **Soft Matter**, 21, 1686 (2005).
2. “General solution for elastic networks on arbitrary curved surfaces in the absence of rotational symmetry”, Yankang Liu, Siyu Li, Roya Zandi and Alex Travesset, **Physical Review E**, 111, 015423, (2025).
3. “Nonlinear Poisson Boltzmann Solutions for Charged Parallel Plates: When Opposite Charges Repel”, Alex Travesset, **Journal of Chemical Physics**, 161, 054903 (2024).
4. “Nanocrystal Assemblies: Current Advances and Open Problems”, Carlos L. Bassani, Greg van Anders, Uri Banin, Dmitry Baranov, Qian Chen, Marjolein Dijkstra, Michael S. Dimitriyev, Efi Efrati, Jordi Faraudo, Oleg Gang, Nicola Gaston, Ramin Golestanian, G. Ivan Guerrero-Garcia, Michael Gruenwald, Amir Haji-Akbari, Maria Ibáñez, Matthias Karg, Tobias Kraus, Byeongdu Lee, Reid C. Van Lehn, Robert J. Macfarlane, Bortolo M. Mognetti, Arash Nikoubashman, Saeed Osat, Oleg V. Prezhdo, Grant M. Rotskoff, Leonor Saiz, An-Chang Shi, Sara Skrabalak, Ivan I. Smalyukh, Mario Tagliazucchi, Dmitri V. Talapin, Alexei V. Tkachenko, Sergei Tretiak, David Vaknin, Asaph Widmer-Cooper, Gerard C. L. Wong, Xingchen Ye, Shan Zhou, Eran Rabani, Michael Engel, and Alex Travesset, **ACS Nano**, 18, 14791-14840 (2024).
5. “Solvent Isotherms and Structural Transitions in Nanoparticle Superlattice Assembly”, Leandro Missoni, Alex Upah, Gerardo Zaldivar, Alex Travesset and Mario Tagliazucchi, **Nanoletters**, 24, 5270-5276 (2024).
6. “Nanocrystal programmable assembly beyond hard spheres (or shapes) and other (simple) potentials”, Alex Travesset, **Current Opinion in Solid State and Materials Science**, 30, 101159, (2024).

7. “Ionic-like Superlattices by Charged Nanoparticles: A Step Toward Photonics Applications”, Binay Nayak, Honghu Zhang, Wei Bu, Benjamin Ocko, Alex Travesset, David Vaknin, Surya Mallapragada and Wenjie Wang, **ACS Applied Nano Materials**, 7, 3220-3228 (2024).
8. “High-Precision Calculation of Nanoparticle (Nanocrystal) Potentials of Mean Force and Internal Energies”, Alex Upah, Andrew Thomas, Jonas Hallstrom and Alex Travesset, **J. of Chemical Theory and Computation**, 20, 1559-1567 (2024).
9. “Tuning Self-Assembly of Gold Nanoparticles Grafted with Charged Polymers by Varying Temperature and Electrolytes”, Binay Nayak, Hyeong Jin Kim, Alex Travesset, David Vaknin, Surya Mallapragada and Wenjie Wang, **The Journal of Physical Chemistry C**, 127, 24651-24657 (2023).
10. “Hydrogen Bond Network Disruption by Hydration Layers in Water Solutions with Salt and Hydrogen-Bonding Polymers (PEO)”, Elizabeth Macias and Alex Travesset, **J. Phys. Chem. B**, 127, 6778-6794 (2023).
11. “Two-dimensional assembly of gold nanoparticles grafted with charged-end-group polymers”, Hyeong Jin Kim, Binay P. Nayak, Honghu Zhang, Benjamin M. Ocko, Alex Travesset, Surya K. Mallapragada, Wenjie Wang. **Journal of Colloid and Interface Science**, 650, 1941-1948 (2023)
12. “Ligand Effects in Assembly of Cubic and Spherical Nanocrystals: Applications to Packing of Perovskite Nanocubes”, Jonas Hallstrom, Ihor Cherniukh, Xun Zha, Maksym V. Kovalenko, and Alex Travesset, **ACS nano**, 17, 7219-7228 (2023).
13. “Chiral Assemblies of Pinwheel Superlattices on Substrates”, Shan Zhou, Jiahui Li, Jun Lu, Haihua Liu, Ji-Young Kim, Ahyoung Kim, Lehan Yao, Chang Liu, Chang Qian, Chang Qian, Zachary D. Hood, Xiaoying Lin, Wenxiang Chen, Thomas E. Gage, Ilke Arslan, Alex Travesset, Kai Sun, Nicholas A. Kotov and Qian Chen, **Nature** 612, 259–265 (2022).
14. “Exact Solution for Elastic Networks on Curved Surfaces”, Yinan Dong, Roya Zandi and Alex Travesset, **Physical Review Letters** 129, 088001 (2022)
15. “Structural Diversity in Multicomponent Nanocrystal Superlattices Comprising Lead Halide Perovskite Nanocubes”, Ihor Cherniukh, Taras Sekh, Gabriele Raino, Olivia Ashton, Max Burian, Alex Travesset, Modestos Athanasiou, Andreas Manoli, John Rohit Abraham, Mariia Svyrydenko, Viktoriia Morad, Denys Naumenko, Yehven Shynkarenko, Federico Montanarella, Heinz Amenisch, Grigorios Istkos, Rainer Mahrt, Thilo Stoferne, Rolf Erni, Maksym Kovalenko and Maryna Bodnarchuk. **ACS nano** 16, 7210 (2022)

16. “Nanocomposite tectons as unifying systems for nanoparticle assembly”, Jianshe Xia, Margaret Lee, Peter J Santos, Nathan Horst, Robert J Macfarlane, Hongxia Guo and Alex Travesset, **Soft Matter** 18, 2176 (2022)
17. “Binary Superlattices of Gold Nanoparticles in Two Dimensions”, Wenjie Wang, Honghu Zhang, Guillaume Freychet, Benjamin M Ocko, Alex Travesset, Surya K Mallapragada and David Vaknin, **Journal of Physical Chemistry Letters** 13, 3424 (2022)
18. “Endocytic Clathrin Coats Develop Curvature at Early Stages of Their Formation”, N.M. Willy, Joshua Ferguson, Salili Silahli, Cemal Cakez, Farah Hasan, C. Chang, Alex Travesset, Siyu Li, Roya Zandi, Dong Li, Eric Betzig, Emanuel Cocucci, Comert Kural, **Developmental Cell** 56, 3146 (2021).
19. “Perovskite type-superlattices from lead halide perovskite nanocubes”, Ihor Cherniukh, Gabriele Raino, Thilo Stoferle, Max Burian, Alex Travesset, Denys Naumenko, Heinz Amenisch, Rolf Erni, Rainer Mahrt, Maryna Bodnarchuk and Maksym Kovalenko. **Nature** 593, 535 (2021).
20. “Thermodynamic Equilibrium of Binary Superlattices “, Xun Zha and Alex Travesset, **Journal of Physical Chemistry C**, 125, 18936 (2021).
21. “Nanoparticle Effect of Polymer Chain Length on the Superlattice Assembly of Functionalized Gold Nanoparticles” Hyeon Jin Kim, Wenjie Wang, Honghu Zhang, Guillaume Freychet, Ben Ocko, Alex Travesset, Surya Mallapragada and David Vaknin **Langmuir** 37, 10143 (2021).
22. “Nanoparticle Superlattices with Negative Thermal Expansion (NTE) Coefficients” ,Hyeon Jin Kim, Wenjie Wang, Surya Mallapragada, Alex Travesset and David Vaknin, **Journal of Physical Chemistry C** 125, 10090 (2021).
23. “Ligand structure and adsorption free energy of nanocrystals on solid substrates“, Michael Pham and Alex Travesset, **Journal of Chemical Physics** 153, 204701 (2020).
24. “On the Thermodynamic Stability of Binary Superlattices of Polystyrene-Functionalized Nanocrystals”, Jianshe Xia, Hongxia Guo and Alex Travesset, **Macromolecules**, 53, 9929 (2020).
25. “Temperature-Induced Tunable Assembly of Columnar Phases of Nanorods”, Hyeon Jin Kim, Wenjie Wang, Alex Travesset, Surya Mallapragada and David Vaknin, **ACS nano**, 14, 6007 (2020).
26. “Phase Diagram and Structure Map of Binary Nanoparticle Superlattices from a Lennard-Jones Model”, Shang-Ren, Yang Sun, Feng Zhang, Alex Travesset, Cai-Zhuang Wang and Kai Ming Ho, **ACS nano**, 14, 6795 (2020).

27. “Closed-Packed UltrasMOOTH Self-Assembled Monolayer of CsPbBr₃ Perovskite Nanocubes”, Biblab Patra, Harshal Agrawal, Jian-Yao Zheng, Alex Travesset and Erik Garnett, **ACS Applied Materials & Interfaces**, 12, 31764 (2020)
28. “Assembly of Nanocrystal Clusters by Solvent Evaporation”, Elizabeth Macias, Tommy Waltmann and Alex Travesset, **Soft Matter** 16, 7350 (2020)
29. “On Virus Growth and Form”, Roya Zandi, Bogdan Dragnea, Alex Travesset and Rudy Podgornik, **Physics Reports**, 847, 1, (2020).
30. “The Hard Sphere Diameter of Nanocrystals (Nanoparticles)”, Xun Zha and Alex Travesset, **Journal of Chemical Physics** 152, 094502 (2020).
31. “Pressure in rigid body molecular dynamics”, Jens Glaser, Xun Zha, Joshua Anderson, Sharon Glotzer and Alex Travesset, **Computational Materials Science**, 173, 109430 (2020).
32. “Superlattices with Polystyrene Ligands: From Colloidal to Polymer Limit”, Jianshe Xia, Nathan Horst, Hongxia Guo and Alex Travesset, **Macromolecules** 52, 8056 (2019).
33. “Superlattice Assembly by Interpolymer Complexation”, Nathan Horst, Srikanth Nayak, Wenjie Wang, Surya Mallapragada, David Vaknin and Alex Travesset. **Soft Matter**, 15, 9690 (2019).
34. “Assembly by Solvent Evaporation: Equilibrium Structures and Relaxation Times”, Tommy Waltmann and Alex Travesset, **Nanoscale** 11, 18702 (2019).
35. “Ground States of Crystalline Caps: Generalized Jellium on Curved Space”, Siyu Li, Roya Zandi, Alex Travesset and Greg Grason, **Physical Review Letters**, 123, 145501 (2019).
36. “Structure of Polydisperse Nanocrystals: Implications for Crystal Fractionalization”, King C. Lai, Xun Zha, James W. Evans and Alex Travesset, **Journal of Physical Chemistry C**, 123, 9528 (2019).
37. “Elasticity in Curved Topographies: Exact Theories and Linear Approximations”, Siyu Li, Roya Zandi and Alex Travesset, **Physical Review E**, 99, 063005 (2019).
38. “Interpolymer Complexation as a Strategy for Nanoparticle Assembly and Crystallization”, Srikanth Nayak, Nathan Horst, Honghu Zhang, Wenjie Wang, Surya Mallapragada, Alex Travesset and David Vaknin, **Journal of Physical Chemistry C**, 123, 836 (2019).
39. “Why large icosahedral virus need scaffolding proteins”, Siyu Li, Polly Roy, Alex Travesset and Roya Zandi, **PNAS**, 115, 10971 (2018)

40. “Calculation of critical nucleation rates by the persistent embryo method: Application to quasi hard sphere models”, Shan Ren, Yang Sun, Feng Zhang, Alex Travesset, Cai-Zhuang Wang and Kai Ming Ho, **Soft Matter**, 14, 9185 (2018).
41. “Stability and Free Energy of Nanocrystal Chains and Superlattices”, Xun Zha and Alex Travesset, **Journal of Physical Chemistry C**, 122, 23153(2018)
42. “Many Body Effects and Icosahedral Order in Superlattice Self-Assembly”, Tommy Waltmann, Curt Waltmann, Nathan Horst and Alex Travesset, **Journal of the American Chemical Society** 140, 8236 (2018).
43. “Potential of mean force for two nanocrystals: Core geometry and size, hydrocarbon unsaturation, and universality with respect to the force field”, Curt Waltmann, Nathan Horst, A. Travesset, **Journal of Chemical Physics** 149, 034109 (2018).
44. “Ordered networks of gold nanoparticles cross-linked by dithiol-oligomers”, S. Nayak, N. Horst, H. Zhang, W. Wang, S. Mallapragada, A. Travesset and D. Vaknin, **Particle & Particle Systems Characterization** 35, 1800097 (2018).
45. “Implementation of Metal-friendly EAM/FS-type Semi-empirical Potentials in HOOMD blue: mGPU-accelerated Molecular Dynamics Software.” Lin Yang, Feng Zhang, Cai-Zhuang Wang, Kai Ming Ho and Alex Travesset, **Journal of Computational Physics** 359, 352 (2018).
46. “Capping Ligand Vortices as `Atomic Orbitals` in Nanocrystal Self-Assembly”, C. Waltmann, N. Horst and A. Travesset, **ACS nano**, 11, 11273 (2017).
47. “Ionic depletion at the crystalline Gibbs layer of PEG-capped gold nanoparticles at aqueous surfaces”, W. Wang, H. Zhang, S. Mallapragada, A. Travesset and D. Vaknin, **Physical Review Materials**, 1, 076002 (2017).
48. “Nanoparticle Superlattices as Quasi Frank Kasper Phases”, A. Travesset, **Physical Review Letters** 119, 115701 (2017).
49. “Soft Skyrmions, Spontaneous Valence and Selection Rules in Nanoparticle Superlattices”, A. Travesset, **ACS nano**, 11, 5375 (2017).
50. “Ion Specific Interfacial Crystallization of Polymer-Grafted Nanoparticles”, H. Zhang, W. Wang, S. Mallapragada, A. Travesset and D. Vaknin, **Journal of Physical Chemistry C**, 121, 15424 (2017).
51. “Assembling and Ordering Polymer Grafted Nanoparticles in three dimensions”, H. Zhang, W. Wang, M. Akinc, S. Mallapragada, A. Travesset and D. Vaknin **Nanoscale**, 9, 8710 (2017).

52. “Topological structure prediction in binary nanoparticle superlattices“, A. Travesset, **Soft Matter**, 13, 147 (2017)
53. “Macroscopic and Tunable nanoparticle superlattices”, H. Zhang, W. Wang, S. Mallapragada, A. Travesset and D. Vaknin, **Nanoscale**, 9, 164 (2017).
54. “Structure of curved crystals in the thermodynamic limit and the perfect screening condition”, A. Travesset, **Physical Review E**, 94, 063001 (2016).
55. “Self-Assembly of DNA Functionalized Gold Nanoparticles at the Liquid-Vapor Interface”, H. Zhang, W. Wang, N. Hagen, I. Kuzmenko, M. Akinc, A. Travesset, S. Mallapragada and D. Vaknin, **Advanced Materials Interfaces** 3, 1600180 (2016).
56. “Determination of Anharmonic Free Energy Contributions: Low Temperature Phases of the Lennard Jones System. “, C. Calero, K. Knorowski and A. Travesset, **Journal of Chemical Physics** 144, 124102 (2016).
57. “Prediction of binary nanoparticle superlattices from soft potentials”, N. Horst and A. Travesset, **Journal of Chemical Physics** 144, 014502 (2016).
58. “Binary Nanoparticle superlattices of soft particle systems”, A. Travesset, **PNAS** 112, 9563 (2015).
59. “Differential dynamics of RAS isoforms in GDP- and GTP-bound states”, A. Kapoor and A. Travesset, **Proteins** 83, 1091 (2015).
60. “Phase diagram of power law and Lennard-Jones systems: Crystal phases”, A. Travesset, **Journal of Chemical Physics** 141, 164501 (2014).
61. “Separation of the Stern and diffuse layer in coarse-grained models: The cases of phosphatidyl serine, phosphatidic acid, and PIP2 monolayers”, S. Vangaveti, A. Travesset, **Journal of Chemical Physics** 141, 245102 (2014)
62. “Mechanism of the Exchange Reaction in HRAS from Multiscale Modeling”, A. Kapoor and A. Travesset, **PLoS one** 9(10):e108846 (2014).
63. “Self-Assembly and Crystallization of Hairy (f-Star) and DNA-Grafted Nanocubes”, C. Knorowski and A. Travesset, **Journal of the American Chemical Society**, 136 653 (2014).
64. “Folding 19 proteins to their native state and stability of large proteins from a coarse-grained model”, A. Kapoor and A. Travesset, **Proteins**, 82 505 (2014).
65. “Folding and Stability of Helical Bundle Proteins from Coarse-Grained Models”, A. Kapoor and A. Travesset, **Proteins**, 81 1200 (2013).

66. “Nanorods in Functionalized Block-copolymer Gels: Flexible Ladders and Liquid Crystalline Order in Curved Geometries”, C. Knorowski and A. Travesset, **EPL** 100, 56004 (2012).
67. “Dynamics of DNA-programmable Nanoparticle Crystallization: Gelation, Crystallization and Topological Defects”, C. Knorowski and A. Travesset, **Soft Matter** 8, 12053 (2012).
68. “General Solution to the Electric Double Layer with Discrete Interfacial Charges”, S. Vangaveti and A. Travesset, **Journal of Chemical Physics** 137, 064708 (2012).
69. “Regulation of the Electric Charge in Phosphatidic Acid Domains” W. Wang, N. Anderson, A. Travesset and D. Vaknin, **Journal of Physical Chemistry B** 116, 7213 (2012).
70. “Self-Assembly Enters the Design Era”, A. Travesset, **Science** 334 (2011), 183.
71. “Materials Design by DNA-programmed Self-Assembly”, C.D. Knorowski and A. Travesset, **Current Opinions in Solid State and Materials Science**. 15, 262 (2011).
72. “Monte Carlo Studies of the XY Model on Two-Dimensional Curved Surfaces”, R. Selinger, A. Konya, A. Travesset and J. Selinger, **Journal of Physical Chemistry B** 115, 13989 (2011).
73. “Ionic Specificity in pH Regulated Charged Interfaces: Fe^{3+} versus La^{3+} ”, W. Wang, R. Park, D. Meyer, A. Travesset and D. Vaknin, **Langmuir** 27, 11917 (2011).
74. “Dynamics and Statics of DNA-programmable Nanoparticle Self-Assembly and Crystallization”, C.D. Knorowski, S. Burleigh and A. Travesset, **Physical Review Letters** 106, 215501 (2011).
75. “Ion Specific Induced Charges at Aqueous Soft Interfaces”, W. Wang, R. Park, A. Travesset and D. Vaknin, **Physical Review Letters** 106, 056102 (2011).
76. “Design of Polymer Nanocomposites in Solution by Polymer Functionalization”, J. Anderson, R. Sknepnek and A. Travesset, **Physical Review E** 82, 021803 (2010).
77. “Electrostatic correlations at the Stern layer: Physics or Chemistry”, A. Travesset and S. Vangaveti, **Journal of Chemical Physics** 131, 185102 (2009).
78. “The hydrophobic effect as a driving force for charge inversion in colloids”, A. Martin-Molina, C. Calero, J. Faraudo, M. Quesada-Perez, A. Travesset, R. Hidalgo-Alvarez, **Soft Matter** 5, 1350 (2009).
79. “Extracting the Pair Distribution Function of Liquids and Liquid Surfaces by Grazing Incidence X-ray Diffraction Mode”, D. Vaknin, W. Bu and A. Travesset, **Journal of Chemical Physics** 129, 044504 (2008).

80. "Molecular Dynamics of Ionic Transport and Electrokinetic Effects in Realistic Silica Channels", C. D Lorenz, P.S. Crozier, J.A. Anderson and A. Travesset, **Journal of Physical Chemistry C** 112, 10222 (2008).
81. "Nanoparticle Ordering via Functionalized Block Copolymers in Solution", R. Sknepnek, J.A. Anderson, M.H. Lamm, J. Schmalian and A. Travesset, **ACS Nano**, 2, 1259 (2008).
82. "Self-assembled ordered polymer nanocomposites directed by attractive particles", C. D. Knorowski, J. A. Anderson and A. Travesset, **Journal of Chemical Physics** 128, 164903 (2008).
83. "Micellar Crystals in Solution from Molecular Dynamics Simulations", J.A. Anderson, C.D. Lorenz and A. Travesset, **Journal of Chemical Physics** 128, 184906 (2008).
84. "General purpose molecular dynamics simulations fully implemented on graphics processing units", J.A. Anderson, C.D. Lorenz and A. Travesset, **Journal of Computational Physics** 227, 5342 (2008).
85. "Hydrogen bonding and binding of polybasic residues with negatively charged mixed lipid monolayers", C.D. Lorenz, J. Faraudo and A. Travesset, **Langmuir** 24, 1654 (2008).
86. "Charge inversion of divalent ionic solutions in silica channels", C.D. Lorenz and A. Travesset, **Physical Review E** 75, 061202 (2007).
87. "Phosphatidic acid domains in membranes: effect of divalent ions", J. Faraudo and A. Travesset, **Biophysical Journal** 92, 2806 (2007).
88. "Electrostatics of Phosphatidic Acid Monolayers: Insights from Computer Simulations", J. Faraudo and A. Travesset, **Colloids and Surfaces A** 300, 287 (2007).
89. "Dynamics and instabilities of defects in two-dimensional crystals on curved backgrounds", M. Bowick, H. Shin and A. Travesset, **Physical Review E** 75, 21404 (2007).
90. "The many origins of charge inversion in electrolyte solutions: effects of discrete interfacial charges", J. Faraudo and A. Travesset, **Journal of Physical Chemistry C** 111, 987 (2007).
91. "Ordering by Collapse: Formation of Bilayer and Trilayer Crystals by Folding Langmuir Monolayers", D. Vaknin, W. Bu, S.K. Satija and A. Travesset, **Langmuir** 23, 1888 (2007).
92. "Atomistic Simulations of Langmuir Monolayer Collapse", C.D. Lorenz and A. Travesset, **Langmuir** 22, 100116 (2006).

93. "Effect of dipolar moments in domain sizes of lipid bilayers and monolayers", A. Travesset, **Journal of Chemical Physics** 125, 84905 (2006).
94. "Charge inversion at minute electrolyte concentrations", J. Pitler, W. Bu, D. Vaknin, A. Travesset, D.J. McGillivray and M. Loesche, **Physical Review Letters** 97, 46102 (2006).
95. "Coarse-Grained Simulations of Gels of Nonionic Multiblock Copolymers with Hydrophobic Groups", J. Anderson and A. Travesset, **Macromolecules** 39, 5143 (2006).
96. "How accurate is Poisson-Boltzmann theory for monovalent ions near highly charged interfaces?" W. Bu, D. Vaknin and A. Travesset, **Langmuir** 22, 5673 (2006).
97. "Bjerrum pairing correlations next to charged interfaces", A. Travesset and D. Vaknin, **Europhysics Letters** 74, 181 (2006).
98. "Crystalline particle packings on a sphere with long-range power-law potentials" M. Bowick, A. Cacciuto, D. Nelson and A. Travesset, **Physical Review B** 73, 024115 (2006).
99. "Monovalent counterion distributions at highly charged water interfaces: Proton-transfer and Poisson-Boltzmann theory", W. Bu, D. Vaknin and A. Travesset, **Physical Review E** 72, 060501(R) (2005)
100. "Solid domains in lipid vesicles and scars" S. Chushak and A. Travesset, **Europhysics Letters** 72 767 (2005).
101. "Coarse-Grained Molecular Dynamics Simulations of the Self-Assembly of Pentablock Copolymers into Micelles" S. Chushak and A. Travesset, **Journal of Chemical Physics** 123, 234905 (2005) .
102. "Ground State of a Large Number of Particles on a Frozen Geometry" A. Travesset, **Physical Review E** 72 036110 (2005) .
103. "Salty Solutions Near a Charge modulated Interface" A. Travesset, **Europhysics Journal E** 17 435 (2005).
104. "Induced Crystallization of Polyelectrolyte-Surfactant Complexes at the Gas-water Interface" D. Vaknin, S. Dahlke, A. Travesset, G. Nizri and S. Magdassi. **Physical Review Letters** 93 218302 (2004).
105. "Curvature-Induced Defect Unbinding in Toroidal Geometries" Bowick, D.R. Nelson, A..Travesset, **Physical Review E** 69 041102 (2004) .
106. "Grain Boundary scars and spherical crystallography" A.R. Bausch, M. Bowick, A. Cacciuto, A. Disnmore, M. Hsu, D. Nelson, M. Nikolaides, A. Travesset and D. Weitz, **Science** 299, 1716 (2003).

107. “Universality in the Dislocation Cloud Surrounding a Disclination,” A. Travesset, **Physical Review B** 68, 115421 (2003).
108. “Crystalline order on a Sphere and the Generalized Thomson Problem” Bowick, D. Nelson and A. Travesset, **Physical Review Letters** 89, 185502 (2002).
109. “Avalanches, Disorder and Power Spectra” K. Dahmen, A. Travesset and R. White, **Physical Review B** 66, 24430 (2002).
110. “The formation of vortex loops (strings) in continuous phase transitions” Bowick, A. Cacciuto and A. Travesset, **Physical Review E** 65, 26133 (2002).
111. “The Universal Negative Poisson Ratio of Self-Avoiding Fixed-Connectivity membranes” Bowick, A. Cacciuto, G. Thorleifsson and A. Travesset, **Physical Review Letters** 87 (2001).
112. “The Geometric Structure of Bond-Orientational Order” Bowick and A. Travesset, **Journal of Physics A:Mathematical General** 34 1 (2001).
113. “The Statistical Mechanics of Membranes” M. Bowick and A. Travesset, **Physics Reports** 344 255 (2001).
114. “Universality Classes of Self-Avoiding Fixed Connectivity Membranes” M. Bowick, A. Cacciuto, G. Thorleifsson and A. Travesset, **EuroPhysics Journal E** 5, 149 (2001).
115. “Interacting Topological Defects on Frozen Topographies” Bowick, D. Nelson and A. Travesset, **Physical Review B** 62 8738 (2000).
116. “The Tubular Phase of Self-Avoiding Anisotropic Membranes” Bowick and A. Travesset, **Physical Review E** 59, 5659 (1999).
117. “The Renormalization Group and its Finite Lattice Approximations” Cacciuto, E. Gregory and A. Travesset, **Journal of Statistical Physics** 97, 541 (1999).
118. “Properties of Quantum Hall Skyrmions from Anomalies” S. Baez, A.P. Balachandran, A. Stern and A. Travesset, **Modern Physics Letters A** 13, 2627 (1998).
119. “Plasmons in Simple Metals-Slabs: a Semiclassical Approach” S. Leseduarte, J. Sellares and A. Travesset, **Surface Science** 384, 1 (1997).
120. “O(N) Models Within the Finite Lattice Approximation” J. Comellas and A. Travesset, **Nuclear Physics B** 498, 539 (1997).
121. “The Phase Diagram of the U(2)xU(2) Models and its Implications for Chiral Hierarchies” D. Espriu, V. Koulovassilopoulos and A. Travesset, **Physical Review D** 56 6885 (1997).

122. “MCRG study of Fixed-Connectivity Surfaces” D. Espriu and A. Travesset, **Nuclear Physics B** 468 514 (1996) .
123. “Combining MCRG and Fourier Accelerated Algorithms” D. Espriu and A. Travesset, **Physics Letters B** 356 329 (1995).
124. “Universality in the Crumpling Transition” M Baig, D. Espriu and A. Travesset, **Nuclear Physics B** 426 575 (1994).

Publications (Proceedings and invited papers, non-refereed)

1. “MD on GPU: HOOMD to the rescue”, J. Anderson and A. Traveset, **Computing in Science and Engineering** 10 (2008), 8.
2. “Barkhausen noise, subloops, demagnetization curves, and universal scaling tuning disorder, field sweep rate, and history” Karin A. Dahmen, John H. Carpenter, Amit P. Mehta, Andrea C. Mills, James P. Sethna, Alex Traveset, Michael B. Weissman, Robert A. White **Proc. SPIE Vol. 5469**, p. 1-3, Fluctuations and Noise in Materials; Dragana Popovic, Michael B. Weissman, Zoltan A. Racz; Eds
3. “New Analytical Results on Anisotropic Membranes” A. Bowick and A. Traveset, **Nuclear Physics B** 73 (Proc. Suppl.) (1999) 807-809.
4. “The Quantum Hall effect, Skyrmions and Anomalies” A. Traveset, MRST-98 Conference Proceedings (1998) 134, A. Bowick and A. Traveset, **Nuclear Physics B** 73 (Proc. Suppl.) (1999) 807-809
5. “Monte Carlo Renormalization Group Calculation in $\lambda\phi_3^4$,” A. Traveset, **Nuclear Physics B** 63(Proc. Suppl.) (1998) 640.
6. “The Phase Diagram of the $U(2)\times U(2)$ Sigma Model” D. Espriu, V. Koulovassilopoulos, A. Traveset, **Nuclear Physics B** 63 (Proc. Suppl.) (1998) 572.
7. “Determination of the Crumpling Fractal dimension via k-space MCRG” D. Espriu and A. Traveset, **Nuclear Physics B** 47 (Proc. Suppl.) (1996) 637.