

Vida Jamali

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Position

University of California, Berkeley

Dec 2017-present

Kavli Energy NanoScience Institute, Postdoctoral Researcher
Supervisor: **Paul A. Alivisatos**

Research Interests

Soft matter, nanomaterials and nanotechnology, complex fluids, colloidal science, advanced materials

Education

Rice University, Houston, TX

2011-2017

Ph.D. in Chemical and Biomolecular Engineering, GPA: 4.03/4

Advisor: **Matteo Pasquali**

Committee: Paul van der Schoot, Fred MacKintosh, Cecilia Clementi, S. Lisa Biswal

Thesis: Morphology of Carbon Nanotube Liquid Crystalline Solutions: Insights into Tactoids and Columnar Phase

Sharif University of Technology, Tehran, Iran

2006- 2011

B.S. in Chemical Engineering

Publications

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9. **Jamali, V.***, Niroui, F.*, Taylor, L. W., Dewey, O. S., Koscher, B. A., Pasquali, M., Alivisatos, A. P. “Rheological tuning of the crystal growth: a path toward light emitting fibers”. *in preparation*-Draft available upon request.
 8. **Jamali, V.**, Mirri, F., Biggers, E. G., Pinnick, R.A., Liberman, L., Talmon, Y., MacKintosh F., van der Schoot, P., Pasquali, M. “Self-assembly of carbon nanotubes into columnar phase at low concentrations revealed by small angle x-ray scattering”. *Submitted*-Draft available upon request.
 7. Liberman, L., **Jamali, V.**, Pasquali, M., Talmon, Y. “The effect of carbon nanotube diameter and stiffness on their phase behavior in crowded solutions”. *Submitted*-Draft available upon request.
 6. Mirri, F.*, Ashkar, R.*, **Jamali, V.**, Liberman, L., Pinnick, R., Talmon, Y., van der Schoot, P., Butler, P., Pasquali, M. “Fluid phase ordering of charge-stabilized carbon nanotube solutions”. *Macromolecules* 51 (17), 6892-6900 (2018).
 5. Maillaud, L., Headrick, R. J., **Jamali, V.**, Maillaud, J., Tsentalovich, D., Neri, W., Bengio, E. A., Mirri, F., Kleinerman, O., Talmon, Y., Poulin, P., and Pasquali, M., “Flexible and conductive fibers made from highly concentrated aqueous dispersions of carbon nanotubes”. *Industrial and Engineering Chemistry Research* 57 (10), 3554-3560 (2018).
 4. Tran, T. Q., Headrick, R. J., Bengio, E. A., Myint, S. M., Khoshnevis, H., **Jamali, V.**, Duong, H. M., Pasquali, M. “Purification and dissolution of carbon nanotube fibers spun from floating catalyst method”. *ACS Materials and Interfaces* 9 (42), 37112-37119 (2017).
 3. **Jamali, V.**, Biggers, E., van der Schoot, P., Pasquali, M. “Line tension of twist-free carbon nanotube lyotropic liquid crystal microdroplets on solid surfaces”. *Langmuir* (36), 9115-9121 (2017).

2. Jiang, C., Peng, Z., de los Reyes, C., Young, C. C., Tsentlovich, D., **Jamali, V.**, Ajayan, P. M., Tour, J. M., Pasquali, M., and Marti A. A., "Increased solubility and fiber spinning of graphenide dispersions aided by crown-ethers". *Chemical Communications* 53 (9), 1498-1501 (2016).
1. **Jamali, V.***, Behabtu, N.*, Senyuk, B., Lee J. A. Smalyukh, I., van der Schoot, P., Pasquali, M. "Experimental realization of crossover in shape and director field of nematic tactoids". *Physical Review E* 91 (4), 042507 (2015).

Honors and Awards

NSF Future Faculty Workshop (2019)

American Chemical Society P2F Future Faculty Workshop (2019)

Society of Rheology Student Travel Award (2017)

Active and Smart Matter Conference Travel Award (2016)

Smalley-Curl Institute Travel Award (2016): Annual SCI Transdisciplinary Symposium

Society of Iranian-American Women for Education (SIAWE) Scholarship (2016)

ConocoPhillips Fellowship (2014)

Phi Lambda Upsilon Honor Society (2014)

NASA Space Health Innovation Challenge hackathon Finalist (2014): Awarded and organized by NASA

Ignite Silicon Valley Trek Travel Award (2013): Rice Alliance for Technology and Entrepreneurship

Best Teaching Assistant Award (2012): Department of Chemical and Biomolecular engineering

Screech Elevator Pitch Competition People's Choice Award (2012):Rice Center for Engineering Leadership (RCEL)

Research Experience

University of California, Berkeley

Postdoctoral Researcher

- Developed nanomaterial building blocks and integrating them into functional devices such as electrically pumped light emitting fibers
- Studied the dynamics of nanoparticles in solution using *in-situ* liquid cell TEM imaging

Rice University

Graduate Research Assistant

- Studied the phase behavior of liquid crystalline solutions of carbon nanotube using small angle x-ray scattering
- Developed theoretical model explaining the symmetry broken shape of sessile liquid crystalline droplets and measuring the line tension for lyotropic systems of carbon nanotubes
- Realization of shape and director field transition in nematic droplets formed in carbon nanotube solutions

Selected Talks and Presentations

From nanoscale building blocks to functional fibers

AIChE Annual Meeting, Orlando, FL.

Nov 2019

From carbon nanotube liquid crystalline solutions to functional fibers (Invited)

Department of Materials Science and Engineering, Cornell University, Ithaca, NY.

Feb 2019

From carbon nanotube liquid crystalline solutions to functional fibers (Invited)

Department of Physics, MIT, Cambridge, MA.

Nov 2018

Colloidally synthesized nanomaterials as building blocks for functional fibers

MRS Fall Meeting, Boston, MA.

Nov 2018

From carbon nanotube liquid crystalline solutions to functional fibers AIChE Annual Meeting, Pittsburgh, PA.	Oct 2018
Morphology of carbon nanotube liquid crystalline phases: insight into tactoids and columnar phase (Invited) APS March Meeting, Los Angeles, CA.	Mar 2018
A hexagonal columnar liquid crystal phase formation in dilute solutions of carbon nanotubes AIChE Annual Meeting, Minneapolis, MN.	Oct 2017
Phase behavior and morphology of carbon nanotube liquid crystal solutions 88th Society of Rheology Conference, Tampa, FL.	Feb 2017
Phase behavior and morphology of carbon nanotube liquid crystal solutions (Invited) Lewis-Sigler Integrative Genome Institute, Biophysics group, Princeton, NJ.	Feb 2017
Morphology of carbon nanotube liquid crystal solutions AIChE Annual Meeting, San Francisco, CA.	Nov 2016
Wetting behavior, shape, and morphology of sessile lyotropic liquid crystal microdroplets ACS Colloid & Surface Science Symposium, Harvard University, Cambridge, MA.	Jun 2016
Wetting behavior, shape, and morphology of sessile lyotropic liquid crystal microdroplets (Poster) Active and Smart Matter Conference, Syracuse University, Syracuse, NY.	Jun 2016
Experimental realization of crossover in shape and director field of nematic tactoids (Poster) Soft Condensed Matter Physics Gordon Research Conference, New London, NH	Aug 2015
Experimental realization of crossover in shape and director field of nematic tactoids ACS Colloid & Surface Science Symposium, Pittsburg, PA.	Jun 2015

Patents

Alivisatos A.P., Niroui, F., Jamali, V., Pasquali M., "Light emitting fibers", USSN 62/714,561
Jamali, V., Alivisatos A.P., "Rheological tuning of crystal growth", BK-2020-009-1

Mentoring Experience

Undergraduate Researcher: Tanner Yamada (University of California, Berkeley)	2018-2019
Undergraduate Researcher: Evan Biggers (Rice University)	2016-2017
High School Summer Intern: Miranda Mittleman (Rice University)	Summer 2017
Undergraduate Summer Intern: Samuel Quitzau (NSF REU program)	Summer 2016
First-Year CHBE Graduate Students Mentor (Rice University)	2015-2016

Teaching Experience

<i>Dean's Teaching Assistant:</i> Thermodynamics I (CHBE 411) Rice University	Fall 2014
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<i>Teaching Assistant:</i> Colloidal & Interfacial Phenomena (CHBE 560) Rice University	Spring 2014
<i>Teaching Assistant:</i> Transport Phenomena I (CHBE 401) Rice University	Fall 2012
<i>Teaching Assistant:</i> Chemical Engineering Lab II (CHBE 433) Rice University	Fall 2011

Professional Activities

Postdoc representative, Chemistry Graduate Life Committee, University of California, Berkeley, CA	2019
Authorized superuser, Alivisatos lab small angle X-ray scattering facility	2018-present
Member, Materials Research Society	2018-present
Member, American Chemical Society	2017-present
Member, American Institute of Chemical Engineers	2016-present
Member, American Physical Society (GSOFT, DPOLY)	2015-present
Member, Society of Rheology	2014-present
Session co-chair, AIChE Conference	2017
Authorized superuser, Rice optical microscopy shared facility	2014-2017
Recitation chair, CHBE graduate student association, Rice University	2013-2014
Workshop presenter, Sally Ride Science Festival for Girls, Houston, TX	2012 & 2013

References

Professor A. Paul Alivisatos

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Professor Matteo Pasquali

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Professor Paul van der Schoot

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Professor Fred C. MacKintosh

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