# Vida Jamali

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## Academic Position

**University of California, Berkeley** Dec 2017-present
Department of Chemistry, Kavli Energy NanoScience Institute, Postdoctoral Researcher
Advisor: **Paul A. Alivisatos** (joint with Kranthi Mandadapu)

## Education

**Rice University**, Houston, TX 2011-2017
Ph.D. in Chemical and Biomolecular Engineering, GPA: 4.03/4
Advisor: **Matteo Pasquali**
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

## Research Interests

soft and active matter, liquid phase transmission electron microscopy, complex fluids, artificial Intelligence, nanoscience

## Honors and Awards

**Selected to attend the University of Delaware Future Faculty Workshop, Princeton University (2019)**
**American Chemical Society P2F Future Faculty Scholar (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 Endowed Scholarship (2014)**
**Phi Lambda Upsilon Honor Society (2014)**
**NASA Space Health Innovation Challenge hackathon Finalist (2013)**: 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)

## Publications

1. **Jamali, V.**, Hargus, C., Ben Moshe A., Aghazadeh, A., Ha, H. D., Mandadapu, K. K., Alivisatos, A. P. "Deep learning-assisted liquid cell electron microscopy reveals the nature of anomalous diffusion of nanoparticles near the surface". ChemRxiv.12894050 (2020) Under Review by *Proceedings of National Academy of Sciences*

2. **Jamali, V.***, Niroui, F.*, Taylor, L. W., Dewey, O. S., Koscher, B. A., Pasquali, M., Alivisatos, A. P. "Perovskite-carbon nanotube light emitting fibers". *Nano Letters* 20 (5), 3178-3184 (2020).

3. Liberman, L., **Jamali, V.**, Pasquali, M., Talmon, Y. "The effect of carbon nanotube diameter and stiffness on their phase behavior in crowded solutions". *Langmuir* 36 (1), 242-249 (2020).

4. **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". *arXiv:*1910.03795 (2019).

5. 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).

6. 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).

7. 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).

8. **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* 33 (36), 9115-9121 (2017).

9. Jiang, C., Peng, Z., de los Reyes, C., Young, C. C., Tsentalovich, 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).

10. **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).

### Manuscripts in Preparation

11. Cho, H., Moreno-Hernandez, I., **Jamali, V.**, Oh, M., Alivisatos, A. P. "In situ quantification of interactions between charged nanorods in a predefined potential energy landscape". Draft available upon request.

## Grant Proposals Writing Experience

NSF -CBET, lead writer, funded for $135k
(PI: A. Paul Alivisatos, Co-PI: Kranthi Mandadapu) June 2020
EAGER: Towards molecular scale resolution in studies of the anomalous motion of nanoparticles using liquid phase electron microscopy

NSF-DMR co-writer, later used as basis for a successful Welch foundation proposal
(PI: Matteo Pasquali, Co-PIs: Fred MacKintosh, Yeshahayu Talmon) Nov 2016
Nanotube-based soft conductors with tunable mechanical properties

AFRL/AFOSR co-writer, funded for $800k
(PI: Matteo Pasquali) Oct 2014
Soft, lightweight, multi-functional conductors from fullerene carbon nanotubes

## Patents

Alivisatos A.P., Niroui, F., Jamali, V., Pasquali M., "Light emitting fibers", USSN 62/714,561
Alivisatos A.P., Jamali, V., "Processing method for fabricating perovskite-carbon nanotube fibers and devices", USSN 62/958,394

## 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

## Mentoring Experience

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|---|---|
| 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

*Dean's Teaching Assistant:* Thermodynamics I (CHBE 411) Fall 2014
Rice University

*Teaching Assistant:* Colloidal & Interfacial Phenomena (CHBE 560) Spring 2014
Rice University

*Teaching Assistant:* Transport Phenomena I (CHBE 401) Fall 2012
Rice University

*Teaching Assistant:* Chemical Engineering Lab II (CHBE 433) Fall 2011
Rice University

## Professional Activities

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| Postdoc representative, Chemistry Graduate Life Committee, University of California, Berkeley, CA | 2019-present |
| 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 |