

# Vida Jamali

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## Position

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### University of California, Berkeley

Dec 2017-present

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

## Research Interests

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Soft matter, nanomaterials and nanotechnology, advanced materials

## Education

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### 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, Sibani Lisa Biswal, Cecilia Clementi

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. "LEIF: Light emitting integrated fiber". *in preparation*.
  8. **Jamali, V.**, Mirri, F., Liberman, L., Biggers, E., Talmon, Y., MacKintosh F., Pasquali, M. "Self-assembly of carbon nanotubes into columnar phase at low concentrations revealed by small angle x-ray scattering". *in preparation*.
  7. Marincel, D.M., **Jamali, V.**, Sun, L., Park, C., Pasquali, M. "Liquid crystals of boron nitride nanotubes". *in preparation*.
  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* (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* (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* (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* (2017).

2. 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* (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* (2015).

## Honors and Awards

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**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

**ConocoPhillips Fellowship (2014)**

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

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

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

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

## Research Experience

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**University of California, Berkeley**

*Postdoctoral Researcher*

Developing nanomaterial building blocks and integrating them into functional devices such as electrically pumped light emitting fibers

**Rice University**

*Graduate Research Assistant*

Studying the phase behavior of liquid crystalline solutions of carbon nanotube using small angle x-ray and neutron scattering; developing 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 biphasic solutions of carbon nanotubes in chlorosulfonic acid

## Selected Talks and Presentations

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

Physics of Living Systems Short Talk Series, 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 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, Syracuse University, Syracuse, NY.	Jun 2016
Wetting behavior, shape, and morphology of sessile lyotropic liquid crystal microdroplets SCI Transdisciplinary Symposium, Rice University, Houston, TX.	Apr 2016
Experimental realization of crossover in shape and director field of nematic tactoids Texas Soft Matter Meeting, Houston, TX.	Aug 2015
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
Tactoids of nematic phase in carbon nanotubes solutions Texas Soft Matter Meeting, Houston, TX.	Jan 2013

## Patents

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Light Emitting Fibers, Ref. No.: BK-2018-163

## Mentoring Experience

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Undergraduate Researcher: Tanner Yamada (University of California, Berkeley)	Fall 2018-present
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

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<i>Dean's Teaching Assistant:</i> Thermodynamics I (CHBE 411) Rice University	Fall 2014
<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

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Session Co-chair, AIChE Conference	2017
Referee, Journal of Rheology	2015-present
Recitation Chair, CHBE Graduate Student Association, Rice University	2013-2014
Workshop Presenter, Sally Ride Science Festival for Girls, Houston, TX	2012 & 2013
Member of Materials Research Society	2018-present
Member of American Chemical Society	2017-present
Member of Society of Rheology	2014-present
Member of American Physical Society (GSOF, DPOLY)	2015-present
Member of American Institute of Chemical Engineers (NSEF)	2016-present
Authorized manager of the Rice optical microscopy shared facility	2014-2017

## References

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### **Professor A. Paul Alivisatos**

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Samsung Distinguished Professor of Nanoscience and Nanotechnology  
Department of Chemistry and Materials Science and Engineering  
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### **Professor Matteo Pasquali**

A. J. Hartsook Professor of Chemical and Biomolecular Engineering  
Department of Chemical and Biomolecular Engineering, Chemistry, and Material Science and Nano Engineering  
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### **Professor Yeshayahu (Ishi) Talmon**

Director of Technion Russell Berrie Nanotechnology Institute  
Professor of Chemical Engineering  
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### **Professor Paul van der Schoot**

Lorentz Professor of Theoretical Physics  
Institute for Theoretical Physics, Utrecht University, Utrecht, The Netherlands  
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