Feng, Jie

CONTACT INFORMATION

Department of Mechanical and Aerospace Engineering
Princeton University, Princeton, NJ 08544 USA

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RESEARCH INTERESTS

Fluid Mechanics, Nanomaterials and Nanofabrications, Colloidal Science, Microfluidics
Laser-induced Breakdown Spectroscopy

EDUCATION

Princeton University, Princeton, NJ

Ph.D., Mechanical and Aerospace Engineering, Date of graduation: 2016

- Thesis: *"Study of particles interacting with complex interfaces"* (Advisor: Howard A. Stone) – Investigation of hydrodynamic and physicochemical phenomena for scenarios of particles interacting complex interfaces with potential environmental impacts and industrial applications.

Tsinghua University, Beijing, China

M.S., Thermal Engineering, **with highest honors** 2011

- High Honors Thesis: *"Coal analysis using laser-induce breakdown spectroscopy"*

B.S., Thermal Engineering, **with highest honors** 2009

PUBLICATIONS

Peer-Reviewed Journal Papers

12. J. Feng, J. K. Nunes, S. Shin, J. Yan, Y. L. Kong, R. K. Prud'homme, L. N. Arnaudov, S. D. Stoyanov, H. A. Stone, ***A scalable platform for functional nanoemulsions***, under review.
11. J. Feng, I. Jacobi, H. A. Stone, ***Experimental investigation of the Faraday instability on patterned surfaces***, under review.
10. J. Feng, M. Muradoglu, H. A. Stone, ***Dynamics of a bubble bouncing at a compound interface***, under review.
9. P. S. Stewart, J. Feng, L. S. Kimpton, I. M. Griffiths, H. A. Stone, ***Stability of a bi-layer free film: separated or simultaneous rupture***, Journal of Fluid Mechanics, 777, 27–49, 2015.
8. J. Feng, M. Roché, D. Vigolo, L. N. Arnaudov, S. D. Stoyanov, T. D. Gurkov, G. G. Tsutsumanova, H. A. Stone, ***Nanoemulsions obtained via bubble-bursting at a compound interface***, **Nature Physics**, 10, 606–612, 2014 (**highlighted in "News and Views" of Nature Physics**).
7. O. S. Park*, J. Feng*, H. A. Stone, ***Viscous Marangoni migration of a drop in a Poiseuille flow at low surface Peclet numbers***, Journal of Fluid Mechanics, 753, 535–552, 2014. (*equal contribution)
6. D. B. Quinn, J. Feng, H. A. Stone, ***Analytical model for the deformation of a fluid–fluid interface beneath an AFM Probe***, Langmuir, 29, 1427–1434, 2013.
5. J. Feng, Z. Wang, L. Li, Z. Li, W. Ni, ***A nonlinearized multivariate dominant factor-based partial least squares model for coal analysis by using laser-induced breakdown spectroscopy***, Applied Spectroscopy, 67, 291–300, 2013.
4. Z. Wang, J. Feng, L. Li, W. Ni, Z. Li, ***A multivariate model based on dominant factor for laser-induced breakdown spectroscopy measurements***, Journal of Analytical Atomic Spectrometry, 26, 2289–2299, 2011.
3. Z. Wang, J. Feng, L. Li, W. Ni, Z. Li, ***A non-linearized PLS model based on multivariate dominant factor for laser-induced breakdown spectroscopy measurements***, Journal of Analytical Atomic Spectrometry, 26, 2175-2182, 2011.
2. J. Feng, Z. Wang, L. West, Z. Li, W. Ni, ***A PLS model based on dominant factor for coal analysis using laser-induced breakdown spectroscopy***, Analytical and Bioanalytical Chemistry, 400, 3261–3271, 2011.

1. J. Feng, Z. Wang, Z. Li, W. Ni, ***Study to reduce laser-induced breakdown spectroscopy measurement uncertainty using plasma characteristic parameters***, Spectrochimica Acta Part B, 65, 549–556, 2010.

Conference Proceedings\Presentations

7. J. Feng, H. A. Stone, ***Bubble bursting at a compound interface: nanoemulsions and nanoparticle encapsulation***, Oil Spill and Ecosystem Science Conference, Houston, TX, February 2015.
6. J. Feng, M. Muradoglu, H. A. Stone, ***Dynamics of a bubble bouncing at a compound interface***, 67th Annual Meeting of the APS Division of Fluid Dynamics, San Francisco, CA, November 2014.
5. J. Feng, M. Roché, D. Vigolo, L. N. Arnaudov, S. D. Stoyanov, H. A. Stone, ***Nanoemulsions obtained via bubble bursting at a compound interface***, AIChE Annual Meeting, Atlanta, GA, November 2014.
4. J. Feng, M. Roché, D. Vigolo, L. N. Arnaudov, S. D. Stoyanov, H. A. Stone, ***Nanoemulsions obtained via bubble bursting at a compound interface***, Oil Spill and Ecosystem Science Conference, Mobile, AL, February 2014.
3. J. Feng, G. Rubinstein, I. Jacobi, H. A. Stone, ***Faraday instability on patterned surfaces***, 66th Annual Meeting of the APS Division of Fluid Dynamics, Pittsburgh, PA, November 2013.
2. J. Feng, M. Roché, D. Vigolo, L. N. Arnaudov, S. D. Stoyanov, H. A. Stone, ***Bulk dispersal of submicrometre-sized droplets by bubble bursting at a compound interface***, SES 50th Annual Technical Meeting, Providence, RI, July 2013.
1. J. Feng, M. Roché, D. Vigolo, L. N. Arnaudov, S. D. Stoyanov, H. A. Stone, ***Fabrication of nanoemulsions by bursting bubble at a liquid-liquid interface***, 65th Annual Meeting of the APS Division of Fluid Dynamics, San Diego, CA, November 2012.

Selected Scholarships & Awards

- **Wallace Memorial Honorific Fellowship**, *Princeton University* 2015
- **Wu Prize for Excellence**, *Princeton University* 2015
- **Eli and Britt Harari University Fellowship**, *Princeton University* 2013
- **Thesis with Highest Honors**, *Tsinghua University* 2009, 2011
- **Mitsubishi Heavy Industries Scholarship**, *Tsinghua University* 2010
- **Tsinghua-TOSHIBA Scholarship**, *Tsinghua University* 2010
- **Graduate with Highest Honors**, *Tsinghua University* 2009, 2011
- **National Scholarship**, *Tsinghua University* 2007, 2008
- **Tsinghua-SAMSUNG Scholarship**, *Tsinghua University* 2006

Patents

3. L. N. Arnaudov, S. D. Stoyanov, H. A. Stone, J. Feng, M. Roché, D. Vigolo. Formation of Nanoemulsions by Bursting Bubbles in a Liquid-Liquid Interface - A Novel and Low-Cost Method for Nano-emulsion Preparation. Princeton Docket#13-2871-1, filed on Jul 26, 2013
2. Z. Li, Z. Wang, J. Feng. A Coal Measurement Method Based on Dominant Factors and Partial Least Square Analysis. China Patent NO. CN103234944A, filed on Aug 7, 2013
1. Z. Li, Z. Wang, J. Feng. A Coal Measurement Method Based on Regression Analysis. China Patent NO. CN101509872B, filed on Aug 18, 2009

Teaching Experience

Princeton University, Princeton, NJ

Lab Assistant, MAE224: "Integrated Engineering Science Laboratory" Spring 2015

Teaching Assistant, MAE335: "Fluid Dynamics" Fall 2013

Service

Memberships

American Physical Society, American Institute of Chemical Engineers,
Princeton Carbon Mitigation Initiative