

Education

 Louisiana State University, Baton Republic Ph.D., Department of Chemical Engined 	ouge, LA, US ering	(2012-2017)
• Louisiana State University, Baton R. M.Sc. Degree, Department of Computer	ouge, LA, US · Science	(2016-2017)
• Louisiana State University, Baton R M.Sc. Degree, Department of Oceanogr	ouge, LA, US aphy and Coastal Science	(2009-2012)
 Nanjing University, Nanjing, Jiang Su, China B.Sc. Degree, Department of Geography and Oceanography 		(2005-2009)
Research Interests		
 Fluid mechanics of multiphase flows Computational fluid dynamics Fluid structure interaction and immersed Granular media and discrete element m Mixing and heat transfer 	d boundary method nethod	
Work Experience		
• MIT, Cambridge, US.	Postdoctoral Research Associate	(2019-2020)
• LSU, Baton Rouge, US.	Postdoctoral Research Associate	(2018-2019)

Expertise

- Applied Mathematics, asymptotic analysis
- Python, C++
- COMSOL, ANSYS Fluent, Gurobi

Journal Publications

- **C. Zhang** (2020). sdfibm: a signed distance field based discrete forcing immersed boundary method in OpenFOAM, *Computer Physics Communications*.
- C. Zhang and K. Nandakumar (2019). Enhancement of heat transfer in laminar flows using a toroidal-helical pipe, *Industrial & Engineering Chemistry Research*.
- C. Zhang, C. Wu, and K. Nandakumar (2019). Effective geometric algorithms for immersed boundary method using signed distance field, <u>ASME Journal of Fluids Engineering</u>.
- C. Zhang, A. R. Ferrell, and K. Nandakumar (2019). Study of a toroidal-helical pipe as an innovative static mixer in laminar flows, *Chemical Engineering Journal*.
- C. Zhang and C. Li (2019). Effects of hurricane forward speed and approach angle on storm surge: an idealized numerical experiment, <u>Acta Oceanologica Sinica</u>.
- **C. Zhang** and K. Nandakumar (2018). Approaches to the numerical estimates of grid convergence of NSE in the presence of singularities, *International Journal of Nonlinear Sciences and Numerical Simulation*.
- **C. Zhang**, H. Wong, and K. Nandakumar (2018). Axial flow in a 2D microchannel induced by a traveling temperature wave imposed at the bottom wall, *Journal of Fluid Mechanics*.
- **C. Zhang** and X. Li (2017). Automatic quad meshing by simulating NaCl crystallization, *Procedia Engineering* (presented at International Meshing Roundtable).

Conference Publications

- **C. Zhang** (*session chair*) and K. Nandakumar, Toroidal-helical pipe as a passive mixing and heat transfer device in laminar flows, presented at the 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, Washington, November 23-26, 2019.
- Z. Ding, C. Zhang, S. Tiwari, J. Joshi, and K. Nandakumar, A study of locking phenomenon of elliptical particle in shear flow with DNS, presented at the 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, Washington, November 23-26, 2019.
- G. He, C. Zhang, and K. Nandakumar, Stability and bifurcation of a freely-rotating discontinuity in a symmetrically driven square cavity, presented at the 72nd Annual Meeting of the APS Division of Fluid Dynamics, Seattle, Washington, November 23-26, 2019.
- **C. Zhang**, H. Wong, and K. Nandakumar, Axial flow in a two-dimensional microchannel induced by a travelling temperature wave imposed at the bottom wall, presented at the 71st Annual Meeting of the APS Division of Fluid Dynamics, Atlanta, Georgia, November 18-20, 2018.
- C. Zhang, A. R. Ferrell, and K. Nandakumar, Optimal design of a novel static mixing device using Computational Fluid Dynamics, presented at the North American Mixing Forum (NAMF) MIXING XXVI Conference, Puerto Rico, June 24-29, 2018.
- **C. Zhang**, A'mer Shamleh, J. Joshi, C. Wu, and K. Nandakumar, Understanding fluid-particle interaction in structured environments by direct numerical simulation, presented at the "New Frontiers in Multiphase CFD for the 21st Century Energy Mix" workshop, Oaxaca, Mexico, August 19-24, 2018.
- **C. Zhang**, J. Yu, C. Wu, and K. Nandakumar, Structured transitions and pattern formation in particle-particle and fluid-particle interactions, presented at the TOTAL-MATHIAS meeting, Paris, France, 2018.