

Hervé Nganguia

Department of Mathematics
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Current position

Assistant Professor, Department of Mathematics, Towson University

Areas of specialisation

Fluid Dynamics; Mathematical Biology; Data Science

Appointments held

2014-2015 Postdoctoral Researcher, New Jersey Institute of Technology
2016-2018 Postdoctoral Researcher, Santa Clara University
2018-2021 Assistant Professor, Indiana University of Pennsylvania
2021- Assistant Professor, Towson University

Education

2003 BSc in Engineering Sciences, City University of New York - College of Staten Island
2005 MSc in Biomedical Engineering, Columbia University
2008 MSc in Applied Mathematics, San Diego State University
2014 PhD in Mathematical Sciences, New Jersey Institute of Technology

Grants, honours & awards

2021-2022 "Mathematics Enhances Teamwork in STEM (METinSTEM)", *FCSM General Endowment Funds*, Towson University, **\$3,240.00**
2022-2024 "LEAPS-MPS: Mathematical Modeling of Targeted Drug Delivery: Unifying Lighthill and Taylor Theories", *LEAPS MPS-2211633*, National Science Foundation, **\$242,132.00**

Publications & talks (2016-)

PEER-REVIEWED JOURNAL ARTICLES

2016 **H. Nganguia**, Y.-N. Young, A. T. Layton, M.-C. Lai, and W.-F. Hu, "Electrohydrodynamics of a viscous drop with inertia", *Physical Review E*, 93:053114.
2017 **H. Nganguia**, K. Pietrzyk, O. S. Pak, "Swimming efficiency in a shear-thinning fluid", *Physical Review E*, 96:062606.

- 2018 **H. Nganguia**, O. S. Pak, "Squirming motion in a Brinkman medium", *Journal of Fluid Mechanics*, 855:554-573.
- 2019a K. Pietrzyk, **H. Nganguia**, C. Datt, L. Zhu, G. Elfring, and O. S. Pak, "Flow around a squirmer in a shear-thinning fluid", *Journal of Non-Newtonian Fluid Mechanics*, 268:101-110.
- 2019b **H. Nganguia**, O. S. Pak, and Y.-N. Young, "Effects of surfactant transport on electrodeformation of a viscous drop", *Physical Review E*, 99:063104.
- 2020a **H. Nganguia**, L. Zhu, D. Palaniappan, and O. S. Pak, "Squirming in a viscous fluid enclosed by a Brinkman medium", *Physical Review E*, 101:063105.
- 2020b **H. Nganguia**, K. Zheng, Y. Chen, O. S. Pak, and L. Zhu, "A note on a swirling squirmer in a shear-thinning fluid", *Physics of Fluids*, 32:111906.
- 2021a K. Qin, Y. Chen, Z. Peng, **H. Nganguia**, L. Zhu, and O. S. Pak, "Propulsion of an elastic filament in a shear-thinning fluid", *Soft Matter*, 17:3829.
- 2021b **H. Nganguia**, W.-F. Hu, M.-C. Lai, and Y.-N. Young, "Effects of surfactant solubility on the hydrodynamics of a viscous drop in a DC electric field", *Physical Review Fluids*, 6:064004.

CONFERENCES

- 2017 "Swimming in a Brinkman Porous Medium at low Reynolds number", *American Physical Society 70th Annual Division of Fluid Dynamics Meeting*.
- 2018a "Electrohydrodynamics of Surfactant-laden Drops and Vesicles", *SIAM conference on the Life Sciences*.
- 2018b "Effects of Surfactant Transport on the Electro-Deformation of Viscous Drops", *American Physical Society 71st Annual Division of Fluid Dynamics Meeting*.
- 2018c "Swimming in a Two-Fluid Model", *American Physical Society 71st Annual Division of Fluid Dynamics Meeting*.
- 2019a "Electrohydrodynamics of Surfactant-Laden Drops", *American Physical Society March Meeting*.
- 2019b "Sorption-controlled electrohydrodynamics of a surfactant-covered viscous drop", *American Physical Society 72nd Annual Division of Fluid Dynamics Meeting*.
- 2020 "Effects of surfactant solubility on the hydrodynamics of a viscous drop in a dc electric field", *American Physical Society 73rd Annual Division of Fluid Dynamics Meeting*.
- 2021 "Swimming in a fluid pocket enclosed by a porous medium", *Society for Mathematical Biology*.

Teaching (2018-)

TOWSON UNIVERSITY

- 2021-2022 Calculus I; Experimental Mathematics; Linear Algebra; Mathematical Models

INDIANA UNIVERSITY OF PENNSYLVANIA

- 2018-2021 Applied Math for Business; Calculus I/II for Business, Natural, and Social Science; Elementary Functions; Introduction to Linear Algebra; Modeling and Simulation; Numerical Methods; Ordinary Differential Equations

Service to the profession

Reviewers - Journals: *Applied Sciences*, *Electronics*, *Energies*, *Journal of Biomechanics*, *Journal of Engineering Mathematics*, *Physics of Fluids*, *Soft Matter*.