

Cosan (Joe-Sean) Daskiran, PhD

PO Box 6000, Binghamton, NY 13902-6000
(607) 777 4984 • cdaskiran@binghamton.edu
[Website](#) • [Google Scholar](#) • [ResearchGate](#)

APPOINTMENTS	Assistant Professor of Mechanical Engineering Binghamton University	2022 - Present
	Postdoctoral Research Associate New Jersey Institute of Technology (NJIT)	2018-2022
EDUCATION	Lehigh University <i>Ph.D. in Mechanical Engineering</i> Dissertation title: Large-eddy simulations of ventilated micro-hydrokinetic turbine and pump-turbines	Bethlehem, PA 2016 - 2018
	Lehigh University <i>M.S. in Mechanical Engineering</i> Thesis title: Steady-State and Transient Computational Study of Multiple Hydrokinetic Turbines	Bethlehem, PA 2014 - 2016
	Istanbul Technical University <i>B.S. in Mechanical Engineering</i> Thesis title: Hand-Pumped Auto-Discharged Exhibit Design	Istanbul, Turkey 2008 - 2012
RESEARCH INTERESTS	Experiments and computational fluid dynamics (CFD) simulations of multiphase flows, mass/heat transport phenomena, turbulent flows, unsteady swirling and shearing flows, flows in a porous medium, free-surface flows and jet flows.	

PEER-REVIEWED JOURNAL PUBLICATIONS

- **Daskiran, C.**, Cui, F., Boufadel, M. C., Liu, R., Zhao, L., Ozgokmen, T., Socolofsky, S. A. and Lee, K., 2022. Computational and experimental study of an oil jet in crossflow: Coupling population balance model with multifluid large eddy simulation. *Journal of Fluid Mechanics*, 932, A15. doi:10.1017/jfm.2021.1002
- **Daskiran, C.**, Liu, R., Lee, K., Katz, J. and Boufadel, M.C., 2022. Estimation of overall droplet size distribution from a local droplet size distribution for a jet in crossflow: Experiment and multiphase large eddy simulations. *International Journal of Multiphase Flow*, 156, p.104205.
- **Daskiran, C.**, Xue, X., Cui, F., Katz, J. and Boufadel, M. C., 2022. Impact of a jet orifice on the hydrodynamics and the oil droplet size distribution. *International Journal of Multiphase Flow*, 147, p.103921.
- Zhao, L., **Daskiran, C.**, Mitchell, D., Panetta, P., Boufadel, M. and Nedwed, T., 2022. Proof of concept study for in-situ burn application using conventional containment booms – Design of Burning Tongue. *Journal of Hazardous Materials*, 439, p.129403.
- Ji, W., Khalil, C. A., Boufadel, M. C., Coelho, G., **Daskiran, C.**, Robinson, B., King, T., Lee, K. and Galus, M., 2022. Impact of mixing and resting times on the droplet size distribution and the petroleum hydrocarbons' concentration in diluted bitumen-based water-accommodated fractions (WAFs). *Chemosphere*, 296, p.133807.

- **Daskiran, C.**, Xue, X., Cui, F., Katz, J. and Boufadel, M.C., 2021. Large eddy simulation and experiment of shear breakup in liquid-liquid jet: Formation of ligaments and droplets. *International Journal of Heat and Fluid Flow*, 89, p.108810.
- **Daskiran, C.**, Cui, F., Boufadel, M.C., Socolofsky, S.A., Katz, J., Zhao, L., Ozgokmen, T., Robinson, B. and King, T., 2021. Transport of oil droplets from a jet in crossflow: Dispersion coefficients and Vortex trapping. *Ocean Modelling*, 158, p.101736.
- Liu, R., **Daskiran, C.**, Cui, F., Ji, F., Zhao, L., Robinson, B., King, B., Lee, K. and Boufadel, M.C., 2021. Experimental investigation of oil droplet size distribution in underwater oil and oil-air jet. *Marine Technology Society Journal*, 55(5), pp.196-209.
- Cui, F., **Daskiran, C.**, Lee, K. and Boufadel, M.C., 2021. Transport and Formation of OPAs in Rivers. *Journal of Environmental Engineering*, 147(5), p.04021012.
- **Daskiran, C.**, Cui, F., Boufadel, M.C., Zhao, L., Socolofsky, S.A., Ozgokmen, T., Robinson, B. and King, T., 2020. Hydrodynamics and dilution of an oil jet in crossflow: The role of small-scale motions from laboratory experiment and large eddy simulations. *International Journal of Heat and Fluid Flow*, 85, p.108634.
- **Daskiran, C.**, Ji, W., Zhao, L., Lee, K., Coelho, G., Nedwed, T.J. and Boufadel, M.C., 2020. Hydrodynamics and Mixing Characteristics in Different-Size Aspirator Bottles for Water-Accommodated Fraction Tests. *Journal of Environmental Engineering*, 146(3), p.04019119.
- Cui, F., **Daskiran, C.**, King, T., Robinson, B., Lee, K., Katz, J. and Boufadel, M.C., 2020. Modeling oil dispersion under breaking waves. Part I: wave hydrodynamics. *Environmental Fluid Mechanics*, 20(6), pp.1527-1551.
- Cui, F., Zhao, L., **Daskiran, C.**, King, T., Lee, K., Katz, J. and Boufadel, M.C., 2020. Modeling oil dispersion under breaking waves. Part II: Coupling Lagrangian particle tracking with population balance model. *Environmental Fluid Mechanics*, 20(6), pp.1553-1578.
- Boufadel, M.C., Socolofsky, S., Katz, J., Yang, D., **Daskiran, C.** and Dewar, W., 2020. A review on multiphase underwater jets and plumes: Droplets, hydrodynamics, and chemistry. *Reviews of Geophysics*, 58(3), p.e2020RG000703.
- **Daskiran, C.**, Attiya, B., Altimemy, M., Liu, I.H. and Oztekin, A., 2019. Oxygen dissolution via pump-turbine—Application to wastewater treatment. *International Journal of Heat and Mass Transfer*, 131, pp.1052-1063.
- Attiya, B., Altimemy, M., Caspar, J., **Daskiran, C.**, Liu, I.H. and Oztekin, A., 2019. Large eddy simulations of multiphase flows past a finite plate near a free surface. *Ocean Engineering*, 188, p.106342.
- Altimemy, M., Attiya, B., **Daskiran, C.**, Liu, I.H. and Oztekin, A., 2019. Mitigation of flow-induced pressure fluctuations in a Francis turbine operating at the design and partial load regimes—LES simulations. *International Journal of Heat and Fluid Flow*, 79, p.108444.
- Attiya, B., Liu, I.H., Altimemy, M., **Daskiran, C.** and Oztekin, A., 2019. Vortex identification in turbulent flows past plates using the Lagrangian method. *Canadian Journal of Physics*, 97(8), pp.895-910.
- **Daskiran, C.**, Riglin, J., Schleicher, W.C. and Oztekin, A., 2018. Computational study of aeration for wastewater treatment via ventilated pump-turbine. *International Journal of Heat and Fluid Flow*, 69, pp.43-54.
- **Daskiran, C.**, Attiya, B., Riglin, J. and Oztekin, A., 2018. Large eddy simulations of ventilated micro hydrokinetic turbine at design and off-design operating conditions. *Ocean Engineering*, 169, pp.1-18.
- **Daskiran, C.**, Riglin, J., Schleicher, W. and Oztekin, A., 2017. Transient analysis of micro-hydrokinetic turbines for river applications. *Ocean engineering*, 129, pp.291-300.
- **Daskiran, C.**, Liu, I.H. and Oztekin, A., 2017. Computational study of multiphase flows over ventilated translating blades. *International Journal of Heat and Mass Transfer*, 110, pp.262-275.

- Riglin, J., Carter III, F., Oblas, N., Schleicher, W.C., **Daskiran, C.** and Oztekin, A., 2016. Experimental and numerical characterization of a full-scale portable hydrokinetic turbine prototype for river applications. *Renewable Energy*, 99, pp.772-783.
- Riglin, J., **Daskiran, C.**, Jonas, J., Schleicher, W.C. and Oztekin, A., 2016. Hydrokinetic turbine array characteristics for river applications and spatially restricted flows. *Renewable energy*, 97, pp.274-283.

CONFERENCE PROCEEDINGS, PRESENTATIONS AND POSTERS (*the presenter is shown in italic*)

- **Daskiran, C.**, Cui, F., Zhao, L., Socolofsky, S. A., Lee, K. and Boufadel, M. C., 2021. Experimental and computational study of oil jet in crossflow. International Oil Spill Conference (IOSC) Proceedings.
- *Cui, F.*, **Daskiran, C.**, Zhao, L., Boufadel, M. C., Robinson B., King, T. and Lee, K., 2021. Oil droplets dispersion under a deep-water plunging breaker: Experimental measurements and numerical modeling. International Oil Spill Conference (IOSC) Proceedings.
- **Daskiran, C.**, Ji, W., Behzad, H., Zhao, L., Lee, K., Coelho, G., Nedwed, T. J. and Boufadel, M.C., 2021. Hydrodynamics and Mixing Characteristics in Different Size Aspirator Bottles for the Water Accommodated Fraction (WAF) Tests. International Oil Spill Conference (IOSC) Proceedings (Poster).
- **Daskiran, C.**, *Attiya, B.*, Altimemy, M., Liu, I.H. and Oztekin, A., 2018, November. Large Eddy Simulation of Ventilated Pump-Turbine for Wastewater Treatment. In *ASME International Mechanical Engineering Congress and Exposition* (Vol. 52101, p. V007T09A006). American Society of Mechanical Engineers.
- *Attiya, B.*, Liu, I.H., Altimemy, M., **Daskiran, C.** and Oztekin, A., 2018, November. Investigation of Three-Dimensional Lagrangian Coherent Structures in Flow Past Single and Arrays of Plate: Linear Energy Harvesting Applications. In *ASME International Mechanical Engineering Congress and Exposition* (Vol. 52101, p. V007T09A069). American Society of Mechanical Engineers.
- **Daskiran, C.**, *Attiya, B.*, Liu, I.H., Riglin, J. and Oztekin, A., 2017, November. Large Eddy Simulations of Ventilated Micro Hydrokinetic Turbine. In *ASME International Mechanical Engineering Congress and Exposition* (Vol. 58424, p. V007T09A003). American Society of Mechanical Engineers.
- *Attiya, B.*, Liu, I.H., **Daskiran, C.**, Riglin, J. and Oztekin, A., 2017, November. Computational Fluid Dynamics Simulations in Flow Past Arrays of Finite Plate: Marine Current Energy Harvesting Applications. In *ASME International Mechanical Engineering Congress and Exposition* (Vol. 58424, p. V007T09A064). American Society of Mechanical Engineers.
- **Daskiran, C.**, *Riglin, J.* and Oztekin, A., 2016, November. Numerical analysis of blockage ratio effect on a portable hydrokinetic turbine. In *ASME International Mechanical Engineering Congress and Exposition* (Vol. 50619, p. V007T09A064). American Society of Mechanical Engineers.
- **Daskiran, C.**, Riglin, J. and Oztekin, A., 2015, November. Computational study of multiple hydrokinetic turbines: the effect of wake. In *ASME International Mechanical Engineering Congress and Exposition* (Vol. 57465, p. V07AT09A021). American Society of Mechanical Engineers.
- Riglin, J., **Daskiran, C.**, Oblas, N., Schleicher, W.C. and Oztekin, A., 2015, November. Design and Characteristics of the Micro-Hydrokinetic Turbine System. In *ASME International Mechanical Engineering Congress and Exposition* (Vol. 57434, p. V06AT07A053). American Society of Mechanical Engineers.
- **Daskiran, C.**, Cui, F., Socolofsky, S. A., Katz, J., Lee, K. and Boufadel, M. C., 2020. Investigation of Turbulent Mixing and Primary Breakup for Turbulent Oil Jets. Gulf of Mexico Oil Spill & Ecosystem Science Conference (GoMOSES), Tampa, FL (Presentation).
- Gao, F., **Daskiran, C.**, Ji, W., Zhao, L., Cui, F., Ozgokmen, T., Lee, K. and Boufadel, M.C., 2019. Experimental and Numerical Characterization of Multiphase Flow from Underwater Blowout: A Combined Particle Imaging

Velocimetry and Computational Fluid Dynamics Approach. Gulf of Mexico Oil Spill & Ecosystem Science Conference (GoMOSES), Tampa, FL (Presentation).

- *Ji, W., Daskiran, C., Zhao, L., Lee, K., Coelho, G., Nedwed, T. J. and Boufadel, M.C., 2019. Hydrodynamics and Mixing Characteristics in Different Size Aspirator Bottles for the Water Accommodated Fraction (WAF) Tests. Gulf of Mexico Oil Spill & Ecosystem Science Conference (GoMOSES), Tampa, FL (Poster).*

TEACHING **Mechanical Engineering Department**, Binghamton University

ME 550 - Introduction to Fluid Dynamics

Mechanical Engineering Department, Lehigh University

Teaching Assistant for:

- Thermodynamics
- Numerical Methods in Engineering
- Finite Element Methods

Note: Some of the tutoring classes (Fluid Mechanics and Physical Processes) at Lehigh and NJIT were also covered.

SERVICES **Journal Reviewer**

Ocean Engineering, Environmental Fluid Mechanics, Renewable Energy, Water, Energies.

HONORS
&
AWARDS

2021 – The International Oil Spill Conference (IOSC) Scholarship.

2018 – J. David A Walker and M. Elizabeth Walker Fellowship, Lehigh University, PA (declined due to graduation).

2018 – Certificate of Achievement, U.S. Department of Energy's Industrial Assessment Center Program at Lehigh University, PA.

2017 – Ph.D. Fellowship, Lehigh University, PA.

2014 – Certificate of Participation in the Teacher Development Program, Lehigh University, PA.