

Franky Djutanta

Curriculum Vitae

Higher Education

- Jan 2019 **PhD.**, ARIZONA STATE UNIVERSITY (ASU), Tempe, AZ, GPA: 4.0 / 4.0.
 - Present Mechanical Engineering, Ira A. Fulton Schools of Engineering
- Jul 2014 **MSc.**, INSTITUT TEKNOLOGI BANDUNG (ITB), Indonesia, GPA: 3.96 / 4.0.
 - Apr 2016 Aeronautics and Astronautics, Faculty of Mechanical and Aerospace Engineering
- Jul 2010 **BSc.**, INSTITUT TEKNOLOGI BANDUNG (ITB), Indonesia, GPA: 3.86 / 4.0.
 - Jul 2014 Aeronautics and Astronautics, Faculty of Mechanical and Aerospace Engineering

Ongoing Ph.D. thesis

Theme **Exploring strategy of oil spill mitigation by investigating multiphase hydrodynamics**

PIs Dr. Rizal F. Hariadi (Arizona State University) and Dr. Bernard Yurke (Boise State University)

Description My thesis is exploring the following questions: (1) what would happen to multiphase flow between oil spill and ocean surface subjected to vast hydrodynamic forces? (2) how to incorporate knowledge of fluid mechanics in dealing with oil remediation? (3) how geophysical landscape of ocean, such as ocean gyres, contributes to oil spill remediation?

Publications

- [1] DJUTANTA, Franky ; KHA, Rachael ; YURKE, Bernard ; HARIADI, Rizal F.: Oily ocean surface films as a cradle for the emergence of life. (manuscript in preparation)
- [2] SGOURALIS, Ioannis ; MADAAN, Shreya ; DJUTANTA, Franky ; KHA, Rachael ; HARIADI, Rizal F. ; PRESSÉ, Steve: A bayesian nonparametric approach to single molecule forster resonance energy transfer. In: *The Journal of Physical Chemistry B* 123 (2018), Nr. 3, S. 675–688

Professional experiences

- Feb 2017 **Research scientist**, ASU Biodesign Institute, Tempe, Arizona.
 - Jan 2019
 - o Worked on DNA mobility in viscous fluid, molecular biophysics, and origin of life research.
 - o Was responsible in establishing protein patterning technique, building fluorescence microscope, and training undergraduate students ($n > 10$) in the lab.
- Jul 2016 **CFD consultant**, Flow diagnostic laboratory, Bandung, Indonesia.
 - Feb 2017 Worked on designing automobile fan of Toyota Fortuner using genetic algorithm (GA) optimization directly coupled with computational fluid dynamics analysis—using OpenFOAM
- Jun – Dec 2016 **Analyst**, ITB CFD laboratory, Bandung, Indonesia.
 - 2016 Modelled flow dispersion of power plant pollutants at 8 cities in Indonesia for environment certification by using ANSYS CFX.
- Jun 2014 **Linux server administrator**, Flow Diagnostic Laboratory, Bandung, Indonesia.
 - Mar 2016 Designed and maintained computing system server for a computational fluid dynamics (CFD) lab
- Jan 2014 **Teaching assistant**, Faculty of mechanical and aerospace engineering, Indonesia.
 - Dec 2015 Responsible for teaching part of advanced mathematics course for master and undergraduate program
- Jan – Mar 2015 **Core trainer team**, ITB CFD laboratory, Bandung, West Java.
 - 2015 Developed and delivered CFD course for automotive part company
- Jun – Jul 2013 **Sales engineer intern**, Toshiba corporation, Hamamatsuchō, Tokyo, Japan.
 - 2013 Designed a feasible modern transport system plan using Toshiba transport technology. The internship was remarked as excellent followed by a job offer at the end of the program

Scientific meetings and conferences

- 26 – 28 **Synthetic cell conference**, Santa Fe, NM.
May 2020 Awarded a travel award of \$600, but the event was canceled due to COVID-19 pandemic
- 18 – 20 **System chemistry virtual symposium**, Online using Twitter.
May 2020 Presented a poster: *Oily ocean surface films as a cradle for the emergence of life*
- 18 – 24 **GRC seminar/conference**, Galveston, TX.
Jan 2020
 - Selected to give a talk: *Oily ocean surface films as a cradle for the emergence of life*
 - Awarded a travel award of \$265
- 30 March **Biophysics conference**, Arizona State University.
2019 Presented a poster: *Production of cell-like structures by rain impacting oil film*
- 24 – 26 **Workshop on structural DNA nanotechnology**, University of Illinois Urbana-Champaign.
Sep 2018 Attended hands-on workshop on structural DNA nanotechnology simulation
- 5 May **Biophysics conference**, University of Arizona.
2018 Presented a poster: *Ultra-fast rotating dsDNA under viscous flows*
- 24 – 28 **DNA nanotechnology conference**, University of Texas at Austin.
Sep 2017 Presented two posters: *Ultra-fast rotating dsDNA under viscous flows* and *DNA nanotubes as fluid flow sensors for measuring hydrodynamic forces in raindrop impacts*
- 22 April **Biophysics conference**, Arizona State University.
2017 Presented a poster: *Ultra-fast rotating dsDNA under viscous flows*

Volunteer experiences

- Feb 2017 **Public outreach**, Biodesign Institute, ASU, Tempe, AZ.
– Present Organize outreach activities annually to disseminate scientific knowledge to Arizona community
- Mar – Aug **Project leader for remote village development**, Cihurip Village, South Garut, Indonesia.
2012
 - Led 182 ITB students to develop engineering and economics prospects in a very remote village.
 - Directed multiple teams to plan and develop electrical power distribution with micro-hydro power plant sources.

Awards

- 2020 Travel award of ~\$600 for presenting a poster at Synthetic Cell conference in Santa Fe, NM (*event was canceled due to COVID-19 pandemic*)
- 2020 Travel award of \$265 for giving a talk at Gordon Research Conference in Galveston, TX
- 2016 1st ranked master student for April commencement
- 2014 Full scholarship for distinguished master degree in Aeronautics and Astronautics
- 2013 1st ranked undergraduate student for class of 2014

Certification

- 2017 Certified LabVIEW Associate Developer (License: 100-317-21364)

Some skills

- Programming bash/UNIX, C++, Fortran, Matlab, Mathematica, ~~TeX~~TeX, Vi/Vim, Bash, Imagemagick, Ghostscript, LabVIEW
- Wet lab protein expression, protein patterning, HPLC, gel electrophoresis, PCR, DNA nanotechnology, click chemistry, surface passivation
- Imaging single-molecule microscopy, high-speed camera, macro photography
- Mathematics image analysis, FFT, perturbation methods, numerical DE, Bayesian inference