

Mawuli K. Afenyo, Ph.D.

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ACADEMIC BACKGROUND

Doctor of Philosophy in Oil and Gas Engineering (PhD)

2014 – 2017

Memorial University of Newfoundland, Canada

Master of Business Administration in Green Energy and Sustainable Businesses (MBA)

2012 – 2013

Bologna Business School-University of Bologna, Italy

Master of Science in Petroleum Engineering (MSc)

2010 – 2012

Politecnico di Torino (Technical University of Turin), Italy

Bachelor of Science (BSc)

2005 – 2009

Kwame Nkrumah University of Science and Technology, Ghana

COURSES TAUGHT

- Principles of Macro Economics
- Maritime Economics Theory and Applications
- Environmental management in the Energy Industry
- Principles of Transportation Economics
- Global Supply Chain Management
- Oil and Gas Engineering Capstone Project
- Reliability and Safety Engineering
- Project Management

RESEARCH AND PUBLICATIONS

[Total citations as of March 8, 2022: Google Scholar = 488; h-index = 10; i10-index = 10]

REFERED PUBLICATIONS

RP17. Adumene, S., Afenyo, M., Salehi, V., William, P., (2022). An adaptive model for human factor assessment in maritime operations.

International Journal of Industrial Ergonomics.89: 103293. <https://doi.org/10.1016/j.ergon.2022.103293> (IF: 2.656)

RP16. Panahi, R., Afenyo, M., Ng, A.K. Y.(2022). Developing a Resilience Index for Safer and More Resilient Arctic

Shipping. *Maritime Policy & Management Online* <https://doi.org/10.1080/03088839.2022.2061059> (IF: 3.778)

RP15. Adumene, S., Okwu, M., Yazdi, M., Afenyo, M., Islam, R., Charles Ugochukwu Orji, C.U., Obeng, F., Goerlandt, F., (2021) Dynamic logistics disruption risk model for offshore supply vessel operations in Arctic waters. *Maritime Transport Research*, 2:100039

RP14. Ceasar, L. D., Lewis, J., Afenyo, M., Brho, M., (2021). Global maritime piracy: Impact on seafaring and the factors shaping confrontational outcomes. *Journal of Transportation Security*

RP13. Afenyo, M. Ng, A.K.Y., Jiang, C. (2021): A Multi-Period Model for Assessing the Socio-Economic Impact of Oil Spills in the Arctic. *Risk Analysis: An international Journal* (IF:3.137; ABS Grade 4; JCR: Q1)

RP12. Panahi, R., Ng, A.K. Y., Afenyo, M., Lau, Y.Y.J (2020): Reflecting on Forty Years Contextual Evolution of Arctic Port Research: The past and now. *Transportation Research Part A: Policy and Practice*, 144:189-203 (IF: 3.992; JCR: Q1)

RP11. Panahi, R., Afenyo, M., Ng, A.K. Y., Haeri, F. (2020). A Novel Approach in Probabilistic Quantification of Risks within the Context of Maritime Supply Chain: The Case of Extreme Weather Events in the Arctic. *Accident Analysis & Prevention*, 144: 105673 (IF: 3.655; JCR: Q1)

RP10. Helle,I., Mäkinen,J., Nevalainen,M., Afenyo, M., Vanhatalo,J., 2020. Impacts of oil spills on Arctic marine ecosystems: A quantitative and probabilistic risk assessment perspective. *Environmental Science & Technology* 54 (4), 2112-2121 (IF: 7.864; JCR: Q1)

RP9. Afenyo, M., Khan,F., Veitch,B., Ng,A.K.Y., Sajid,Z., Fahd,F. 2019. An explorative object-oriented Bayesian network model for oil spill response in the Arctic Ocean. *Safety in Extreme Environments*. pp 1-12

RP8. Ducruet, C., Panahi, R., Ng, A.K.Y., Jiang, C., Afenyo, M., 2019. Between Geography and transportation: A Scientometric analysis of port studies. *Journal of Transport Geography*. 81:102527. (IF: 3.834; JCR: Q1)

RP7. Afenyo, M., Ng, A.K.Y., and Jiang, C., 2019. Climate change and Arctic shipping: A method for assessing the impacts of oil spills in the Arctic. *Transportation Research Part D*. 77:476-490 (IF: 3.834; JCR: Q1)

RP6. Ng, A.K.Y., Zhang, H., Afenyo, M., Becker, A., Cahoon, S., Chen, S.L., Esteben, M., Ferrari, 4 C., Lau, Y.Y., Lee, P.T.W., Monios, J., Tei, A., Yang, Z. and Acciaro, M. 2018. 'Port 5 decision-maker perceptions on the effectiveness of climate adaptation actions. *Coastal Management* (doi: 10.1080/08920753.2018.1451731). (IF: 1.57)

RP5. Afenyo, M., Khan, F. Veitch, B., and Yang, M., 2017. Arctic shipping accident scenario analysis using Bayesian Network approach. *Ocean Engineering*. 133:224-230 (IF: 3.250)

RP4. Afenyo, M., Khan, F. Veitch, B., and Yang, M., 2017. A probabilistic ecological risk model for Arctic marine oil spills. *Journal of Environmental Chemical Engineering*. 5(2):1494-1503 (IF: 4.020)

RP3. Afenyo, M., Khan, F. Veitch, B., and Yang, M., 2016. Dynamic fugacity model for accidental oil release during Arctic shipping. *Marine Pollution Bulletin*. 111(1-2):347-353 (IF: 3.750)

RP2. Afenyo, M., Khan, F. Veitch, B., and Yang, M., 2016. Modelling oil weathering and transport in sea ice. *Marine Pollution Bulletin*. 107(1):206-215 (IF: 3.750).

RP 1. Afenyo, M., Khan, F., Veitch, B., 2015. A state-of-the-art review of fate and transport of oil spills in open and ice-covered water. *Ocean Engineering*. **119**:233-248 (IF: 3.250).

SELECTED CONFERENCE PROCEEDINGS

CP9. Afenyo, M., Hong, L., Ng, A.K. Y., Jiang, C. (2021). An integrated insurance underwriting tool for Arctic shipping. *International Association of Maritime Economist (IAME)*, Rotterdam.

CP8. Zhu, S., Afenyo, M., Roozbeh P., Ng, A.K. Y., Bell, M.G.H (2020). Socio-economic impacts of shipping along the Northwest Passage: The cost to locals. *International Association of Maritime Economist (IAME)*, Hong Kong.

CP7. Panahi, R., Afenyo, M., Ng, A.K. Y., Haeri, F. (2020). Quantification of Extreme Weather Events Risks for Arctic Supply Chain Using Bayesian Belief Network. *International Association of Maritime Economist (IAME)*, Hong Kong.

CP6. Afenyo, M., Ng, A.K.Y., and Jiang, C., 2018. A method for assessing the socio-economic impact of oil spills generated by Arctic shipping. *International Association of Maritime Economist (IAME) 2019 Conference, Athens, Greece.*

CP5. Afenyo, M., Khan, F. Veitch, B., and Ng, A.K.Y., Khan, F. 2018. An Object-Oriented Bayesian Network (OOBN) for Oil Spill Management, *4th Workshop and Symposium on Safety and Integrity Management* (paper selected for publication in the journal of *Safety in Extreme Environments: People, Risk and Security*).

CP4. Dudley, E.B., Afenyo, M., Veitch, B., Khan, F. 2019. Experimental observations of oil encapsulation and migration in ice. *42nd AMOP Conference, Halifax, Canada.*

CP3. Helle, I., Mäkinen, J., Nevalainen, M., Afenyo, M., Vanhatalo, J. 2019. Marine oil spills in the Arctic: quantitative oil spill risk assessment with limited data and high uncertainties. *SETAC Meeting 29th Annual Meeting, Helsinki, Finland.*

CP2. Afenyo, M., Khan, F., Veitch, B. and Yang, M. 2016 (October 24-26). An exploratory review of weathering and transport modelling of accidental oil releases in Arctic waters. *Arctic Technology Conference, St. John's.*

CP1. Afenyo, M., Khan, F., Veitch, B. and Yang, M. 2017 (October 3-5). A risk-based tool to evaluate oil spill prevention and mitigative measures. *40th AMOP Conference, Calgary.*

BOOK CHAPTERS

BC4. Afenyo, M., Hubert, C.R.J., Bhatnagar, S., Jiang, C. (2022). The interplay between marine shipping insurance premiums and marine microbial genomics. In Lopez-Correa. *Genomics and the Global Bioeconomy*, Elsevier (Accepted for inclusion in book)

BC3. Afenyo, M., Khan, F. and Ng, A.K.Y. (2020): 'Assessing the risk of potential oil spills in the Arctic due to shipping'. In: Ng, A.K.Y., Monios, J. and Jiang, C. (Eds.): *Maritime Transport and Regional Sustainability*. Elsevier, Cambridge, MA, Chapter 11.

BC2. Afenyo, M., Lin, Y. and Ng, A.K.Y., Jiang, C. (2020): 'The opportunities and challenges of developing the Arctic area and shipping in the Arctic'. In: Lasserre, F., and Faury, O. (Eds.): *Arctic shipping: Climate change, commercial traffic and port development*. Elsevier, Cambridge, MA, Chapter 12.

BC 1. Lin, Y., Afenyo, M. and Ng, A.K.Y. (2020): 'Climate change, a double-edged sword: The case of Churchill on the northwest passage'. In: Ng, A.K.Y., Monios, J. and Jiang, C. (Eds.): *Maritime Transport and Regional Sustainability*. Elsevier, Cambridge, MA, Chapter 13.

PROFESSIONAL PUBLICATIONS

PP1. Ng, A.K.Y., Roozbeh, P. Afenyo, M. (Sept. 2019) Key factors for successful climate adaptation & resilience. *Environment Health and Safety. Port Technology*. <https://www.porttechnology.org/technical-papers/key-factors-for-successful-climate-adaptation-resilience/>

PP2. Adzraku, M., Afenyo, M. (June 2020). Dealing with e-wastes in Ghana. The role of the ports. *The Maritime Economist*. <https://www.mmag.org/infocus>

PP3. Panahi, R., Ng, A.K. Y., Haeri, F., Afenyo, M., (2020). Arctic shipping-growth amid uncertainty. *Seaways*.

PROFESSIONAL TECHNICAL REPORTS

PTR 1. CBI Shipping Criteria: The shipping criteria for the climate bond standard and certification scheme, April 2022 Assessed at: <https://www.climatebonds.net/files/standards/Waterborne%20Transport%20%28Shipping%29/CBI%20Certification%20-%20Shipping%20Criteria%20V1b%2020211215.pdf>

(Served as adaptation & resilience expert)

WORKING/ SUBMITTED JOURNAL/CONFERENCE PAPERS & BOOK CHAPTER

WP 1. Afenyo, M., Ng, A.K.Y., Jiang, C. (2021). A Bayesian-Loss Function (BLF) Hybrid model for assessing the Marine Liability Regime for Ship-Source Oil Spills in the Arctic. (*Risk Analysis: An International Journal*)

SELECTED PROFESSIONAL EXPERIENCE

Assistant Professor, (Tenure Track) 2021- Present
Texas A & M University, USA

Researcher & Instructor, 2017 – 2021
University of Manitoba, Canada

Project Manager & Research Associate 2017- 2017
Memorial University of Newfoundland

Visiting Researcher

<i>University of Helsinki, Finland</i>	2016 - 2016
Visiting Researcher <i>Dalhousie University, Canada</i>	2015-2015
Project Manager <i>Dismeco Srl, Italy</i>	2013- 2013
Market Analyst for Launching Commercial Production of Products <i>KiteGen, Italy</i>	2013- 2013

CONFERENCE ORGANISATION

1st & 2nd Conference on Climate Change Adaptation Planning for Ports, Transportation Infrastructure and the Arctic, Winnipeg, MB-
Main Coordinator Link: https://005ab085-f83f-40ce-b679-65860c00a53b.filesusr.com/ugd/d186f1_e6e158a1d03f40e68dee51c64198fca6.pdf
Link: <https://www.ccapptia.com/21conference>

CONSULTING SERVICES

- **Fair Ventures, 2019, Canada**-Providing services for the calculation of greenhouse emission for transporting grains from Churchill to Europe
- **Climate Bond Initiative, 2018-, UK**-Resilience Expert for Climate Bond Initiative working group
Link: <https://www.climatebonds.net/shipping>

GRANTS AND PARTNERSHIPS (Applicant/co-applicant/Collaborator)

- SHHRC Connection grant (Successful) (Worth: **CAD 50,000**) 2021
- Health Canada Emergency funding on COVID-19- (Successful) (worth: **CAD235, 000**) 2020
- Research Manitoba Proof of Concept grant (under review) (Worth: **CAD 150000**) 2020
- Genome Canada GENICE II (Successful) (Worth: **CAD 8 Million**) 2021

Working Grants:

Canada First Research Excellent Fund-Melting Ice (*Collaboration with the University of Manitoba*) (In progress) 2021

SELECTED HONORS AND AWARDS

- KLU Young Researcher Best Paper Award 2019
- Outstanding award for graduate studies (Fellow School of Graduate Studies), Memorial University of Newfoundland, Canada. 2017
- Hult Prize (*Largest Social Entrepreneurship competition in the world for Business Schools*), Semi Finalist team, Dubai University of Bologna 2013

SELECTED SERVICES

Texas A & M University

- **Library Committee Member** 2021- Present

International Association of Maritime Economist (IAME)

- Executive committee member 2021- Present
- Treasurer & Webmaster and council member 2022-Present
- Co-editor official magazine of IAME 2020-Present

CCAPPTIA

- Editorial manager of Newsletter 2018-Present

SCIENTIFIC EXPEDITIONS

- Scientist in the 3rd leg of the 2019 Amundsen Ice-breaker Expedition -organised by Amundsen Science and the Canadian Coast Guard

SELECTED MEMBERSHIP OF PROFESSIONAL ORGANISATIONS

- International Association of Maritime Economists (IAME)
- Transportation Research Board (TRB).

SELECTED MEDIA APPEARANCES

1. Researchers win award for new way to assess impact of Arctic oil spills

Link: <http://genomealberta.ca/genomics/listen-assessing-the-impact-of-oil-spills-in-the-arctic.aspx>

2. Assessing and minimising risk: Oil spills and shipping

Link: http://www.andrewsafer.com/articles/2016-03_assessing_minimising_risk_oil_spills_shipping.pdf

3. Clean, Safe Arctic Seas

Link: <https://www.marinelog.com/tag/arctic/>

4. Oil spill in Canadian Arctic could be devastating for environment and indigenous peoples, study finds.

Link: <https://e360.yale.edu/digest/with-growth-of-arctic-shipping-canada-must-prepare-for-devastating-oil-spills-research-shows>

SELECTED REVIEWER ACTIVITIES

- External Reviewer for Canada's Tri-Agency Interdisciplinary-NSERC Discovery Horizon Grant 2021
- External Reviewer for the intermediate report from the Centre of Excellence for Scenario-based Risk Management in Polar Waters (CEPOLAR) on *recommended practice for scenario-based risk management for Arctic waters* 2021
- Case Studies on Transport Policy 2021

- Guest Editor for special Issue in *Sustainability* 2020
- Safety Science 2020
- Transportation Research Part D 2020
- Transportation Research part E 2020
- International Association of Maritime Economics Conference, 2020
- Journal of Integrated Environmental Assessment and Management 2019
- The Asian Journal of Shipping and Logistics 2019
- 7th Conference on Emerging Energy and Process Technology 2018
- European Journal of International Management 2017