

## Publications

### Journals

- [1] Rahardianto, A, H. Gu, **B.M. Khan**, M. H. Plumlee, et al., (2020). Real-Time RO Monitoring to Select Antiscalant Dose for Advanced Treatment of Wastewater, AWWA Water Science, Topical Collection on Potable Water Reuse (2020), DOI:10.1002/aws2.1196.
- [2] **Bilal, M.**, Oh E., Liu, R., Breger, J., Medintz, I. & Cohen, Y, (2019). Bayesian Network Resource for Meta-Analysis: Cellular Toxicity of Quantum Dots. *Small*, 1900510. <https://doi.org/10.1002/sml.201900510>  
[Appeared as cover figure on the journal](#)
- [3] Yang Zhou, **Bilal Muhammad Khan**, Jin Choi, Anditya Rahardianto & Yoram Cohen (2020), Water use patterns in small agricultural communities, (under review), *Journal of Water Resource Planning and Management*
- [4] **Bilal, M.**, Kumar, K., Church, P., Liu R. & Cohen, Y, (2019). NanoDatabank: A Flexible Database Management System for Nanomaterials. (Ready for submission). *Beilstein J. Nanotechnol.*
- [5] S. Kim, Y. Cohen, K.J. Moses, S. Sharma, **M. Bilal**, (2019). Polysulfone surface nano-structured with tethered polyacrylic acid. *Appl. Surf. Sci.*, 470, pp. 411-422
- [6] Soomin Kim; Kari Moses; Shivani Sharma; **Muhammad Bilal**, Yoram Cohen, (2019). Polysulfone Surface Nano- Structured with Tethered Polyacrylic Acid. *Data in Brief*, <https://doi.org/10.1016/j.dib.2019.103747>
- [7] **Bilal, M.**, Khan, W., Muggleton, J., Rustighi, E., Jenks, H., Pennock, S.R., Atkins, P.R., & Cohn, A. (2018). Inferring the most probable maps of buried underground utilities using Bayesian mapping model. (2018), vol. 150, pp. 52-66, <https://doi.org/10.1016/j.jappgeo.2018.01.006>
- [8] Yoram Cohen, **Muhammad Bilal.**, & Haoyang Liu (2018). Comment on “Assessing the Risk of Engineered Nanomaterials in the Environment: Development and Application of the nanoFate Model”. *Environ. Sci. Technol.* DOI: [10.1021/acs.est.8b00486](https://doi.org/10.1021/acs.est.8b00486)
- [9] Romero-Franco, **M. Bilal.**, Godwin, H.A., Cohen, Y. (2018). Assessment of information availability for environmental impact assessment of engineered nanomaterials. *J Nanopart Res*, <https://doi.org/10.1007/s11051-018-4402-4>
- [10] Kari J. Moses-Varin, **Muhammad Bilal.**, Soomin Kim and Yoram Cohen. (2018). Tethered Hydrophilic Polymers Layers on a Polyamide Surface (2018) *Journal of Applied Polymer Science*, <https://doi.org/10.1002/app.46843>
- [11] **Bilal, M.**, Liu, H., Liu, R., & Cohen, Y. (2017). Bayesian Network as Support Tool for Rapid Query of the Environmental Multimedia Distribution of Nanomaterials. *Nanoscale*. doi: [10.1039/C6NR08583K](https://doi.org/10.1039/C6NR08583K)
- [12] E. Oh, R. Liu, A. Nel, K. Gemill, **M. Bilal.**, Y. Cohen & I. Medintz, (2016) “Meta-analysis of cellular toxicity for cadmium-containing quantum dots”, **Nature Nanotechnology**, doi: [10.1038/nnano.2015.338](https://doi.org/10.1038/nnano.2015.338)

- [13] Romero, M., Godwin, H., **Bilal M.**, Cohen Y. (2017). Needs and Challenges for Assessing the Environmental Impacts of Engineered Nanomaterials (ENMs), Beilstein J. Nanotechnol. 8, 989–1014. DOI: [10.3762/bjnano.8.101](https://doi.org/10.3762/bjnano.8.101)
- [14] Thompson, J., Rahardianto, A., Kim, S., **Bilal M.**, Breckenridge, R., Cohen, Y. (2017) Real-time direct detection of silica scaling on RO membranes. J of Membrane Science, Vol 528, 15, Pp. 346-358. <https://doi.org/10.1016/j.memsci.2017.01.027>
- [15] Liu R, Rallo R, **Bilal M.**, Cohen, Y. (2015) Quantitative structure-activity relationships for cellular uptake of surface- modified nanoparticles, Combinatorial Chemistry & High Throughput Screening. 18(4): 365-375. DOI: [10.2174/1386207318666150306105525](https://doi.org/10.2174/1386207318666150306105525)
- [16] H. Liu, **M. Bilal**, A. Lazareva, A. Keller & Y. Cohen. (2015). Simulation tool for assessing the release and environmental distribution of nanomaterials. Beilstein J. Nanotechnol. 2015, 6, 938–951. [doi:10.3762/bjnano.6.97](https://doi.org/10.3762/bjnano.6.97)
- [17] **M. Bilal**, P.M.L. Chan, W. Khan. (2016). Cooperative Network for Emergency Communications: Fair Distribution of Reward among Players based on their Marginal Contribution. JSAT.
- [18] Khan, W., Darren, A., Kuru, K. & **M. Bilal**. (2018). The Flight Guardian: Autonomous Flight Safety Improvement by Monitoring Aircraft Cockpit Instruments. J of Aerospace Inf. Systems. V. 15, No. 4, pp. 203- 214.<https://doi.org/10.2514/1.I010570>
- [19] Wasiq Khan, Keeley Crockett, **M. Bilal**. (2018). Adaptive framing based similarity measurement between time warped speech signals using Kalman filter. ntl Journal of Speech Technology. Vol. 21. pp. 1- 12. <https://doi.org/10.1007/s10772-018-9511-z>
- [20] W. Khan, P. Jiang, P. Chan, **M. Bilal**. (2014). A Creative Application of Wavelet Transform and Kalman Filter for Children Proof-reading and Continuous Speech Tracking in Online Stories and TV Programs, Inderscience publishers.
- [21] **M. Bilal**. Osborne. O., Liu, R., Harper, S., & Cohen, Y. (ready for submission). Assessment of embryonic zebrafish (EZ) toxicity of diverse nanomaterials based on meta-analysis. Nanotoxicology.

## Conferences

- [1] W. Khan, A. Hussain, **B. Khan**, R. Nawaz & T. Bakar (2019). Novel Framework for Outdoor Mobility Assistance and Auditory Display for Visually Impaired People. 12th IEEE Intl. Conf. on Developments in e-Systems Engineering, Russia.
- [2] Liu, H. H. **Bilal, M.**, Lazareva, A., Keller, A., Cohen, Y., (2014). Regional multimedia distribution of nanomaterials and associated exposures: A software platform. 2014 IEEE International Conference on Bioinformatics and Biomedicine. 2014, 10. DOI: [10.1109/BIBM.2014.6999368](https://doi.org/10.1109/BIBM.2014.6999368)
- [3] **M. Bilal**, I. Awan, S. Mockford and A. e-Yar, (2012). A Unique Global Mobile Network Service Tracker and User Centric Data Analyser. 2012 Seventh International Conference on Broadband, Wireless Computing, Communication and Applications, Victoria, BC, pp. 534-539. doi: [10.1109/BWCCA.2012.94](https://doi.org/10.1109/BWCCA.2012.94)

- [4] **M. Bilal**, A. Yar, S. Mockford, W. Khan, & I. Awan, (2012). Tracesaver: A Tool for Network Service Improvement and Personalized Analysis of User Centric Statistics. 6th, Power control and optimization; Proceedings of the Sixth Global Conference on Power Control and Optimization; 2012; Las Vegas, NV. DOI: [10.1063/1.4768990](https://doi.org/10.1063/1.4768990)
- [5] **M. Bilal**, M. O. Hussain and P. M. L. Chan, (2012). A Reception Based Node Selection Protocol for Multi-hop Routing in Vehicular Ad-hoc Networks. 2012 IEEE 11th International Conference on Trust, Security and Privacy in Computing and Communications, Liverpool, pp. 1593-1600. doi: [10.1109/TrustCom.2012.52](https://doi.org/10.1109/TrustCom.2012.52)
- [6] **M. Bilal**, P.M.L. Chan, F.S. Meddings, A. Konstadopoulou. (2011). Learner Centered EAssessment with a Universal Marking Scheme. IEEE Int. Conf. Teaching & Learning. ICTL. Penang, Malaysia.
- [7] **M. Bilal**, P.M.L. Chan. (2011). Student Coursework Repository (SCORE): The hub for online assessment and learner support repository. Conf. Teaching & Learning. LTA. Bradford, United Kingdom.
- [8] **M. Bilal**, P.M.L. Chan, (2011). A Coalitional Incentive Scheme based on Game Theory for Multi-hop Routing in Vehicular Ad hoc Networks. IEEE 6th int. Conf. FCST 2011. Changsha, China. DOI: [10.1109/TrustCom.2011.227](https://doi.org/10.1109/TrustCom.2011.227)
- [9] **M. Bilal**, P. M. L. Chan and P. Pillai. (2010). A fastest multi-hop routing scheme for information dissemination in Vehicular Communication systems. SoftCOM 2010, 18th International Conference on Software, Telecommunications and Computer Networks, Split, Dubrovnik, 2010, pp. 35-41. [arXiv: 5623628](https://arxiv.org/abs/5623628)
- [10] **M. Bilal**, P. M. L. Chan and P. Pillai, (2010). Fastest-Vehicle Multi-hop Routing in Vehicular Ad hoc Networks. 2010 10th IEEE International Conference on Computer and Information Technology, Bradford, 2010, pp. 773-778. doi: [10.1109/CIT.2010.148](https://doi.org/10.1109/CIT.2010.148)
- [11] C. Evans and **M. Bilal**, (2007). Developing a WAP Application for Mobile Retail Customers. 2007 2nd International Conference on Pervasive Computing and Applications, Birmingham, 2007, pp. 328-332. doi: [10.1109/ICPCA.2007.4365463](https://doi.org/10.1109/ICPCA.2007.4365463)

### Invited Talks and Presentations

- [1] **Bilal, M.** (2020). Machine learning models for water use patterns analysis in small rural agricultural communities for informed decision and deployment of membrane-based water system, AIChE annual meeting - The increasing diversity of chemical engineering, November 15-20.
- [2] Yang Zhou, **Bilal, M.** (2020). Operational improvements of ultrafiltration treatment of RO feedwater driven by neural network models of UF fouling and backwash, AIChE annual meeting - The increasing diversity of chemical engineering, November 15-20.
- [3] **Bilal, M.** (2018). A Framework for the Assessment of Adequacy of Information for Environmental Impact Assessment of Engineered Nanomaterials, (Oral Presentation), AIChE, Pittsburgh, PA, Oct 28. 2018.
- [4] **Bilal, M.** (2018). Real-time Online Membrane Surface Monitor (MeMo™) and Operator Decision Support, ACE Innovation Lounge, June 14, 2018, Las Vegas.

- [5] **Bilal, M.** (2018). NanoDatabank Training: Flexible Database Management System for Nanomaterials Research, CEIN Workshop on Data Management, Jan 12, 2018, University of California Santa Barbara, Santa Barbara.
- [6] **Bilal, M.** Liu, R. & Cohen Y. (2017). Association Rule Mining for Assessing the Relationships among Biological Responses of Embryonic Zebrafish, (Oral Presentation) AIChE, Annual Meeting, October 31, 2017, Minneapolis.
- [7] **Bilal, M.** & Cohen, Y. (2017). NanoDatabank: A Flexible Database Management System for Nanomaterial Research and Integration. Nano Working Group Webinar, NanoStandards, UCLA (Oral Presentation), June 1, 2017.
- [8] **Bilal, M.** (2017). Nanoinformatics platform for environmental impact assessment of engineered nanomaterials. American Chemical Society (ACS) National Meeting, (Oral Presentation), April 2-6, 2017, San Francisco.
- [9] **Bilal, M.** (2016). Meta-Analysis of Cellular Toxicity of Cadmium-Containing Quantum Dots Using Bayesian Networks. AIChE Annual Meeting, 11/14/2016, San Francisco.
- [10] Cohen, Y. & **Bilal, M.** (2016). et al. Environmental Decision Analysis for Nanomaterials. NSF Review, UC Center for Environmental Implications of Nanotechnology (UC CEIN). May 6, 2016.
- [11] **Bilal, M.** (2015). ToxNano: A Toolkit for Toxicity Data Analysis of Engineered Nanomaterials. Gordon Research Conference, (Oral Presentation), June 21-26, 2015, West Dover, VT.
- [12] **Bilal, M.** (2015). Development of a Framework for Environmental Impact Assessment of Engineered Nanomaterials (ENMs). Gordon Research Conference, (Oral Presentation), June 21-26, 2015, West Dover, VT.
- [13] **Bilal, M.** (2015). Probabilistic Assessment of the Potential Environmental Impact of Engineered Nanomaterials. Nanoinformatics Workshop, (Oral Presentation), Jan 26-28, 2015, Arlington, VA.
- [14] **Bilal, M.** (2015). Nanoinfo.org: An integrated Nanoinformatics Web Portal., Nanoinformatics Workshop, (Oral Presentation), Jan. 28, 2015, Arlington, VA
- [15] **Bilal, M.** (2014). Probabilistic Nanoinformatics Modeling Platform for Assessing the Potential Environmental Impact of Engineered Nanomaterials. American Chemical Society, National Meeting, (Oral Presentation), August 11, 2014, San Francisco, CA
- [16] **Bilal, M.** (2014). Nanoinformatics platform for assessing the potential environmental distribution and exposure levels of engineered nanomaterials (ENMs). American Chemical Society Meeting, (Oral Presentation), Aug. 11, 2014, San Francisco, CA
- [17] **Bilal, M.** (2012). RA Reception Based Node Selection Protocol for Multi-hop Routing in Vehicular Ad-hoc Networks. Int. conf. IEEE IUCC, (Oral Presentation), Liverpool, UK, 25-27 June 2012.
- [18] **Bilal, M.** (2011). Learner Centered E-Assessment with a Universal Marking Scheme. IEEE Int. Conf. Teaching & Learning, (Oral Presentation). ICTL. Penang, Malaysia, Nov, 2011.

- [19] **Bilal, M.** (2010). A Fastest-Vehicle Multi-Hop Routing in Vehicular Ad hoc Networks. IEEE Conf. CIT – 2010, Bradford, UK (Oral Presentation).
- [20] **M. Bilal,** (2007). "Developing a WAP Application for Mobile Retail Customers," 2007 2nd International Conference on Pervasive Computing and Applications, Birmingham, 2007. (Oral presentation)

### Technical Reports and Short Papers

- [1] **Haase, & Klaessig.** (2018). EU US Roadmap Nanoinformatics 2030. EU Nanosafety Cluster. <http://doi.org/10.5281/zenodo.1486012> Chapters 5,6 & 8
- [2] Cohen Y. & **Bilal, M.** et al. (2019). Environmental Decision Analysis for Nanomaterials. UC CEIN, Final Project Progress Report, April 22, 2019.
- [3] Cohen, Y., Godwin, H., **Bilal, M.** & Romero, M. F. (2018). Evaluating and Integrating the Body of Evidence for Environmental Decision Analysis of Engineered Nanomaterials (ENMs). Background Paper in University of California Los Angeles Workshop on Alternative Testing, Feb. 20 – 21, 2018.
- [4] Cohen Y. & **Bilal, M.** (2017). A nanoinformatics Platform for Environmental Impact Assessment of Manufactured Nanomaterials. Herman Skolnik Award Symposium.
- [5] **Bilal, M.** et al. (2017). QSAR Model Development. Short paper: QSAR Modeling. 2018 (under review).
- [6] **Bilal, M.** et al. (2018). An information assessment tool for nanomaterials (IANano) for assessment of the adequacy of the body of evidence for conducting environmental impact assessment. UC CEIN, NSF/EPA Review, Progress Report.
- [7] **Bilal, M.** et al. (2017). Online data exploration techniques for assessing the associations among biological responses for the development of nano-structure activity relationships. UC CEIN, NSF/EPA Review Report.
- [8] **Bilal, M.** et al. (2017). Web-based data repository for Nanomaterial data and integration with environmental impact assessment tools. NSF/EPA Review Report.
- [9] **Bilal, M.** et al. (2016). Development of a CEIN framework for environmental impact assessment (EIA) of Engineered Nanomaterials. UC CEIN, NSF/EPA Review Report.
- [10] **Bilal, M.** et al. (2016). Bayesian Networks platform as a decision support tool for exploration of toxicity geared at assessing causal relationships. CEIN Report.
- [11] **Bilal, M.** et al. (2015). Environmental impact analysis for Nanomaterials. UC Center for Environmental Implications of Nanotechnology (UC CEIN), NSF/EPA Review, Progress Report, 2015.
- [12] **Bilal, M.** et al. (2015). Computational models of Nanomaterials Toxicity. UC CEIN, NSF/EPA Review Report.
- [13] **Bilal, M.** et al. (2015). Multimedia Analysis of the Environmental Distribution of Nanomaterials. UC CEIN, NSF/EPA Review Report.
- [14] **Bilal, M.** et al. (2014). QSARs of Nanomaterials Toxicity and Physicochemical Properties. UC CEIN, NSF/EPA Review Report.