

## Dr. Jenel Vatamanu, Scientist

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### Research interest:

- marine environment and pollution, microplastics, water desalinization, low molecular weight organo-gelators
- detonation and explosions, shockwaves, fuel combustion, underwater explosions
- asphaltenes, materials for marine and naval applications, corrosion
- energy storage and renewable energy
- hydrogen storage, gas hydrates, crystallization
- molecular dynamics simulations, scientific software development and maintenance

### Teaching:

- Course of General Chemistry.
- Course of Selected Topics in Theoretical and Computational Chemistry.

### Education:

- **Ph. D.**, Theoretical and Computational Chemistry, Queen’s University, Kingston, ON, Canada.
- **M. Sc.**, Physical Chemistry, Al. I. Cuza University, Iasi, Romania.
- **B. Sc.**, Physical Chemistry, Dunarea de Jos University, Galati, Romania.

### Publications (more recent):

- 1) Ma Z//, Xie Z//, Liu J, Vatamanu J\*, Xing L\*, Li W, “Distinct roles: Co-solvent and additive synergy for expansive electrochemical range and low-temperature aqueous batteries”, *Energy Storage Materials*, **2024**, 66, 103203, DOI: <https://doi.org/10.1016/j.ensm.2024.103203>
- 2) Yang C, Xia J, Cui C, Pollard T, Vatamanu J, Faraone A, Dura JA, Tyagi M, Kattan A, Thimsen E, Xu J, Song W, Hu E, Ji X, Hou S, Zhang X, Ding MS, Hwang S, Su D, Ren Y, Yang X-Q, Wang H, Borodin O\*, Wang C\*, “All-temperature zinc batteries with high-entropy aqueous electrolyte”, *Nature Sustainability*, **2023**, 6, 325–335, DOI: <https://doi.org/10.1038/s41893-022-01028-x>
- 3) Ma L//\*, Vatamanu J//, Hahn NT, Pollard T, Borodin O\*, Petkov V., Schroeder MA, Ren Y, Ding MS, Lou C\*, Allen JL, Wang C, Xu K\* “Highly reversible Zn metal anode enabled by sustainable hydroxyl chemistry”, *Proceedings of the National Academy of Sciences (PNAS)*, **2022**, 119, e2121138119, DOI: <https://doi.org/10.1073/pnas.2121138119>
- 4) Cao L//, Li D//, Pollard T//, Deng T, Zhang B, Yang C, Chen L, Vatamanu J, Hu E, Hourwitz MJ, Ma L, Ding M, Li Q, Hou S, Gaskell H, Fourkas JT, Yang X-Q, Xu K\*, Borodin O\*, Wang C\* “Fluorinated interphase enables reversible aqueous zinc battery chemistries”, *Nature Nanotechnology*, **2021**, 16, 902, DOI: <https://doi.org/10.1038/s41565-021-00905-4>
- 5) Liu M, Vatamanu J, Chen X, Xing L\*, Xu K\*, Li W “Hydrolysis of LiPF6-Containing Electrolyte at High Voltage”, *ACS Energy Lett.* **2021**, 6, 2096, DOI: <https://doi.org/10.1021/acsendergylett.1c00707>