

Dr. Jenel Vatamanu

Research Associate,

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Research interest:

Molecular dynamics simulations, energetic materials, room temperature ionic liquids, supercapacitors, Li-batteries, hydrogen storage systems, electric double layer structure, nucleation and growth of ordered phases, gas hydrates, classical force-field development, coarse-graining, code development and maintenance, analytical theories for condensed phases.

Education:

Ph. D., Queen's University, Chemistry Department, Kingston, ON, Canada

M. Sc., Al. I. Cuza University of Iasi, Chemistry Department, Iasi, Romania

B. Sc., Dunarea de Jos University, Chemistry Department, Galati, Romania

Publications:

- Vatamanu J., Bedrov D., “Capacitive Energy Storage: Current and Future Challenges”, *Journal of Physical Chemistry Letters*, **2015**, 18, 3594–3609.
- Vatamanu J., Vatamanu M., Bedrov D., “Non-Faradaic energy storage by ionic liquids in nanoporous electrodes.”, *ACS Nano*, **2015**, 9, 5999–6017
- McOwen D. W., Seo D. M., Borodin O., Vatamanu J., Boyled P. D., Henderson W. A., “Concentrated electrolytes: decrypting electrolyte properties and reassessing Al corrosion mechanisms”, *Energy & Environmental Science*, **2014**, 7, 416-426.
- Vatamanu, J., Hu, Z., Bedrov, D., Perez, C., Gogotsi, Y., “Increasing Energy Storage in Electrochemical Capacitors with Ionic Liquid Electrolytes and Nanostructured Carbon Electrodes”, *Journal of Physical Chemistry Letters*, **2013**, 4, 2829-2837.
- Xing, L., Vatamanu, J., Borodin, O., Bedrov, D., “On the Atomistic Nature of Capacitance Enhancement Generated by Ionic Liquid Electrolyte Confined in Subnanometer Pores”, *Journal of Physical Chemistry Letters*, **2013**, 4, 132-140.
- Xing, L., Vatamanu, J., Smith, G. D., Bedrov, D., “Nanopatterning of Electrode Surfaces as a Potential Route to Improve the Energy Density of Electric Double Layer Capacitors: Insight from Molecular Simulations.”, *Journal of Physical Chemistry Letters*, **2012**, 3, 1124–1129.
- Vatamanu, J., Cao, L., Borodin, O., Bedrov, D., Smith, G.D., “On the influence of surface topography on the electric double layer structure and differential capacitance of graphite/ionic liquid interfaces”, *Journal of Physical Chemistry Letters*, **2011**, 2, 2267-2272.
- Vatamanu, J., Borodin, O., Smith, G.D., “Molecular insights into the potential and temperature dependences of the differential capacitance of a room-temperature ionic liquid at graphite electrodes”, *Journal of the American Chemical Society*, **2010**, 132, 14825-14833.
- Vatamanu, J., Kusalik, P.G., “Unusual crystalline and polycrystalline structures in methane hydrates”, *Journal of the American Chemical Society*, **2006**, 128, 15588-15589.