

## Alexander Dudchenko

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### Publications

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#### PUBLICATIONS

- **Optimization of Desalination Systems with Detailed Water Chemistry through Integration of Reactors in WaterTAP** *ACS ES&T ENGINEERING*  
Akkor, I., Amusat, O. O., Vecchiarelli, P., Gounaris, C. E., Knueven, B., Dudchenko, A. V.  
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- **Model-based economic analysis under uncertainty for PFAS treatment by granular activated carbon and ion exchange technologies.** *Journal of environmental management*  
Barber, H., Sitterley, K. A., Hardikar, M., Atia, A. A., Dudchenko, A. V., Lima, F. V.  
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- **Conductivity-Driven Origin of the Limiting Current in Concentrated Electrolytes** *ACS ENERGY LETTERS*  
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2026
- **Incorporating corrosion design constraints in desalination process optimization: A case study in mechanical vapor compression** *DESALINATION*  
Tucker, C. I., Amusat, O. O., Atia, A. A., Dudchenko, A., Bartholomew, T., Mauter, M. S.  
2026; 621
- **Assessing the Accuracy of Property Model Predictions for Cost Optimization of Desalination Technologies** *ACS ES&T ENGINEERING*  
Sakhai, S. S., Bartholomew, T. V., Dudchenko, A. V., Lima, F. V.  
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- **Tracking Spatiotemporal Electric Potential in Batteries Using High-Resolution *Operando* X-ray Transmission Imaging** *JOURNAL OF PHYSICAL CHEMISTRY C*  
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- **De-risking high-recovery brackish water desalination via flow reversal and feed flushing using techno-economic assessment** *DESALINATION*  
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- **Component innovations for lower cost mechanical vapor compression.** *Water research*  
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2024; 260: 121950
- **Novel method for accurately estimating membrane transport properties and mass transfer coefficients in reverse osmosis** *JOURNAL OF MEMBRANE SCIENCE*  
Liang, Y., Dudchenko, A., Mauter, M. S.  
2023; 679
- **Inadequacy of current approaches for characterizing membrane transport properties at high salinities** *JOURNAL OF MEMBRANE SCIENCE*  
Liang, Y., Dudchenko, A. V., Mauter, M. S.  
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- **Guidance on Nusselt Number Correlation Selection in Membrane Distillation** *ACS ES&T ENGINEERING*  
Dudchenko, A. V., Hardikar, M., Anand, A., Xin, R., Wang, R., Gopu, C., Mauter, M. S.  
2022
- **Desalination Process Design Assisted by Osmotic Power for High Water Recovery and Low Energy Consumption** *ACS SUSTAINABLE CHEMISTRY & ENGINEERING*  
Touati, K., Dudchenko, A., Mauter, M. S., Rahaman, M.  
2022; 10 (7): 2409-2419
- **High-impact innovations for high-salinity membrane desalination.** *Proceedings of the National Academy of Sciences of the United States of America*  
Dudchenko, A. V., Bartholomew, T. V., Mauter, M. S.  
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- **Cost optimization of multi-stage gap membrane distillation** *JOURNAL OF MEMBRANE SCIENCE*  
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- **Foulant Adsorption to Heterogeneous Surfaces with Zwitterionic Nanoscale Domains** *ACS APPLIED POLYMER MATERIALS*  
Dudchenko, A., Bengani-Lutz, P., Asatekin, A., Mauter, M. S.  
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- **Cost optimization of high recovery single stage gap membrane distillation** *JOURNAL OF MEMBRANE SCIENCE*  
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- **Neural networks for estimating physical parameters in membrane distillation** *JOURNAL OF MEMBRANE SCIENCE*  
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- **Impact of module design on heat transfer in membrane distillation** *JOURNAL OF MEMBRANE SCIENCE*  
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- **Enhancing boron rejection on electrically conducting reverse osmosis membranes through local electrochemical pH modification** *DESALINATION*  
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