Stanford

William Abraham Tarpeh

Associate Professor of Chemical Engineering and, by courtesy, of Civil and Environmental Engineering

Curriculum Vitae available Online

Bio

BIO

Reimagining liquid waste streams as resources can lead to recovery of valuable products and more efficient, less costly approaches to reducing harmful discharges to the environment. Pollutants in effluent streams can be captured and used as valuable inputs to other processes. For example, municipal wastewater contains resources like energy, water, nutrients, and metals. The Tarpeh Lab develops and evaluates novel approaches to resource recovery from “waste” waters at several synergistic scales: molecular mechanisms of chemical transport and transformation; novel unit processes that increase resource efficiency; and systems-level assessments that identify optimization opportunities. We employ understanding of electrochemistry, separations, thermodynamics, kinetics, and reactor design to preferentially recover resources from waste. We leverage these molecular-scale insights to increase the sustainability of engineered processes in terms of energy, environmental impact, and cost.

ACADEMIC APPOINTMENTS

- Associate Professor, Chemical Engineering
- Associate Professor (By courtesy), Civil and Environmental Engineering
- Member, Bio-X

PROFESSIONAL EDUCATION

- PhD, University of California, Berkeley , Environmental Engineering (2017)
- MS, University of California, Berkeley , Environmental Engineering (2013)
- BS, Stanford University , Chemical Engineering (2012)

LINKS

- Tarpeh Research Group: https://www.tarpehlab.com/
- XEIET120 The Role of Water and Energy for Circular Economies: https://online.stanford.edu/courses/xeiet120-role-water-and-energy-circular-economies

Teaching

COURSES

2025-26

- Chemical Engineering Plant Design: CHEMENG 180 (Spr)
- Graduate Practical Training: CHEMENG 299 (Win, Spr)
- Introduction to Chemical Engineering: CHEMENG 20, ENGR 20 (Win)

2024-25

- Chemical Engineering Plant Design: CHEMENG 180 (Spr)
- Colloquium: CHEMENG 699 (Aut, Win, Spr)
- Electrochemical Water Treatment: Materials and Processes: CEE 271C, CHEMENG 175X, CHEMENG 475 (Aut)
- Graduate Practical Training: CHEMENG 299 (Win, Spr)
- Introduction to Chemical Engineering: CHEMENG 20, ENGR 20 (Win)

2023-24

- Chemical Engineering Plant Design: CHEMENG 180 (Spr)
- Graduate Practical Training: CHEMENG 299 (Win, Spr, Sum)
- Introduction to Chemical Engineering: CHEMENG 20, ENGR 20 (Win)

2022-23

- Chemical Engineering Plant Design: CHEMENG 180 (Spr)
- Introduction to Chemical Engineering: CHEMENG 20, ENGR 20 (Win)
- Special Topics in Electrochemistry and Water Treatment: CHEMENG 524 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Ashton Aleman, Colin Crago, Alex Fontani Herreros, Anna Gomes, Genni Liccardo, Milenia Rojas Mendoza, Aditya Shah

Postdoctoral Faculty Sponsor

Michael Baird, Carlos Fernandez Otero, Samay Garg, Hannah Holmes, Veronica Pereira, Pingyu Wang

Doctoral Dissertation Advisor (AC)

Kristen Abels, Edward Apraku, Orisa Coombs, Peter Cruz-Grace, Daniel Howell, Uran Iwata, Wylie Kau, Nick Snyder, Diana Tiburcio, Wrayzene Willoughby

Doctoral Dissertation Co-Advisor (AC)

Izoduwa Aimiuwu, Joyce An, Lia Bu, Chi Cao, Liam Herndon

Doctoral (Program)

Edward Apraku, Victoria Yang

Publications

PUBLICATIONS

- **Multilevel Analysis of Electrochemically Mediated Methanolysis of Poly(ethylene terephthalate) (PET).** *Environmental science & technology*
  Bunke, S. P., Zhou, R., Cha, H. G., Sun, L., Sun, P., Delferro, M., Kang, D., Tarpeh, W. A.
  2026
- **Advancing Electrochemical Technologies for Sustainable Water Treatment and Resource Recovery** *ACS ES&T ENGINEERING*
  Chaplin, B., Unwin, P., Cho, K., Hatzell, M., Martinez-Huitle, C. A., Macpherson, J., Mul, G., Crespo, G. A., Garcia-Segura, S., Tarpeh, W. A.
  2026
- **Fate of organic contaminants in electrochemical nitrogen recovery from urine** *ENVIRONMENTAL SCIENCE-ADVANCES*
  Kogler, A., Tarpeh, W. A.
  2026

- **High Detection Frequency of Enteric Pathogens: Insight from Wastewater-Based Epidemiology (WBE) Surveillance Approach in Dakar, Senegal.** *International journal of environmental research and public health*
  Coundoul, S., Diaby, N., Tène, S. D., Sané, S., Souaré, M., Sylla, A. S., Dieng, M., Grijalva, L. M., Diop, B. S., Diop, P. S., Sarr, S. C., Tall, H., Niang, et al
  2026; 23 (3)
- **Translating Fundamental Insights into Ag-Based Bimetallic Electrocatalysts to Anion-Exchange Membrane Fuel Cells** *ACS ENERGY LETTERS*
  Schroder, J., Douglin, J. C., Zamora Zeledon, J. A., Aleman, A. M., Liu, M. J., Guo, J., Miller, D., Stone, K. H., Tarpeh, W. A., Dekel, D. R., Gunasooriya, G., Burke Stevens, M., Jaramillo, et al
  2026
- **Operando Scanning Electrochemical Microscopy of Electrocatalytic Nitrate Reduction Intermediates** *ENVIRONMENTAL SCIENCE & TECHNOLOGY LETTERS*
  Lee, W., Kim, Y., Tarpeh, W. A.
  2026
- **Unit Process Modeling to Benchmark and Translate Electrocatalytic Reactive Separations of Wastewater Nitrate** *ACS ES&T ENGINEERING*
  Miller, D. M., Abels, K., Kau, W. F., Tarpeh, W. A.
  2025
- **Unraveling Foulant Deposition Mechanisms on Cation Exchange Membranes during Electrochemical Stripping for Wastewater-Ammonia Recovery.** *Environmental science & technology*
  Sharma, N., Kogler, A., Williams, K. S., Nelson Weker, J., Bone, S. E., Tarpeh, W. A.
  2025
- **Electrochemical reactive separations enable electrified nitrogen manufacturing and remediation** *CURRENT OPINION IN ELECTROCHEMISTRY*
  Holmes, H. E., Guo, J., Miller, D. M., Tarpeh, W. A.
  2025; 54
- **Current developments in electrochemical separations** *NATURE CHEMICAL ENGINEERING*
  Arges, C. G., Bazant, M. Z., Cusick, R. D., Hatton, T., Hawks, S. A., Hou, C., Kamcev, J., Kwabi, D. G., Landon, J., Lin, S., Lin, Y. J., Liu, C., Su, et al
  2025
- **Optimization of Mixed Metal Oxide Electrodes for Chlorine Generation: An Alternative to Conventional Platinum Group Metal Materials.** *Environmental science & technology*
  Hancox, S. M., Shao, X., Lee, W., Tobiason, J. E., Tarpeh, W. A., McBeath, S. T.
  2025
- **Probing the Mechanism of Selective Phosphate Adsorption from Wastewater Using Aqueous and Synchrotron X-ray Characterization.** *Journal of the American Chemical Society*
  Sharma, N., Apraku, E., Holmes, H. E., Gong, M., Bustamante, D., Martinez, A. N., Weker, J. N., Bone, S., Tarpeh, W. A.
  2025
- **Prototyping and modelling a photovoltaic-thermal electrochemical stripping system for distributed urine nitrogen recovery** *NATURE WATER*
  Coombs, O. Z., Joo, T., Botelho Junior, A., Chalise, D., Tarpeh, W. A.
  2025; 3 (8)
- **Titanium-, Nitrogen-Doped Carbon Flowers Catalyze Electrochemical Nitrate Reduction Reaction to Ammonia.** *Journal of the American Chemical Society*
  Liu, M. J., Fernández Otero, C. A., Patino, D. U., Gong, H., Hossain, M. D., Matthews, J. E., Williams, K. S., Vargas, A., Zachman, M. J., Hoffman, A. S., Nordlund, D., Bajdich, M., Bare, et al
  2025
- **How the electric double layer impacts nitrate reduction to ammonia** *EES CATALYSIS*
  Czerny-Holownia, S., Boyer, H. R., King, A. J., Yang, V. Y., Guo, J., Liu, M. J., Bui, J. C., Tarpeh, W. A., Lees, E. W.
  2025
- **Investigating the Effect of Membrane Composition on the Selective Ammonium Transport of Escherichia coli AmtB Membrane Proteins** *ACS APPLIED ENGINEERING MATERIALS*

Clark, B. D., Chou, J., Stafford, V., Lurie, F., Dassama, L. M. K., Tarpeh, W. A.
2025

- **In Situ Neutron Reflectometry Reveals the Interfacial Microenvironment Driving Electrochemical Ammonia Synthesis.** *Journal of the American Chemical Society*
  Niemann, V. A., Doucet, M., Benedek, P., Deissler, N. H., Mygind, J. B., Lee, S. W., Rios Amador, I., Willoughby, W. L., Chorkendorff, I., Nielander, A. C., Tarpeh, W. A., Jaramillo, T. F.
  2025
- **Nitrate Reduction Modeling under Acidic Conditions with Late Transition Metals** *ACS CATALYSIS*
  Tang, M. T., Halldin Stenlid, J., Guo, J., Corson, E., Tarpeh, W., Abild-Pedersen, F.
  2025
- **Integrating adsorbents and electrochemistry to advance selective wastewater phosphate separations** *CURRENT OPINION IN CHEMICAL ENGINEERING*
  Sharma, N., Apraku, E., Gong, M., Tarpeh, W. A.
  2025; 47
- **Lithium Extraction by Electrodialysis: Effect of Co-Occurring Ions for Application in Brine Processing** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Botelho Junior, A., Abels, K., Espinosa, D., Tarpeh, W. A.
  2025; 172 (2)
- **Life cycle comparison of industrial-scale lithium-ion battery recycling and mining supply chains.** *Nature communications*
  Machala, M. L., Chen, X., Bunke, S. P., Forbes, G., Yegizbay, A., de Chalendar, J. A., Azevedo, I. L., Benson, S., Tarpeh, W. A.
  2025; 16 (1): 988
- **Electrochemically Mediated Alkaline Hydrolysis and Methanolysis of Poly(ethylene terephthalate) (PET)** *ACS SUSTAINABLE CHEMISTRY & ENGINEERING*
  Bunke, S. P., Williams, K. S., Tarpeh, W. A.
  2025
- **Enhancing the regeneration efficiency of a hybrid anion exchange resin for removal of phosphorus from wastewater with a lower environmental impact** *JOURNAL OF WATER PROCESS ENGINEERING*
  Foster, X., Tarpeh, W. A., Dong, H., Vaneeckhaute, C.
  2025; 69
- **Extraction of Lithium from Brine by Electrodialysis**
  Botelho Junior, A., Abels, K., Tarpeh, W. A., Minerals, M.
  SPRINGER INTERNATIONAL PUBLISHING AG.2025: 1122-1129
- **Ligand content and driving force effects on ion-ion permselectivity in ligand-functionalized membranes** *JOURNAL OF MEMBRANE SCIENCE*
  Abels, K., Junior, A., Chen, X., Tarpeh, W. A.
  2025; 714
- **Informing Ion-Exchange Membrane Design Targets for Donnan Dialysis-Mediated Lithium Brine Concentration** *INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH*
  Abels, K., Yang, V., Tarpeh, W. A.
  2024
- **Toward a circular nitrogen bioeconomy: integrating nitrogen bioconcentration, separations, and high-value products for nitrogen recovery.** *Current opinion in biotechnology*
  Apraku, E., Farmer, M., Lavallais, C., Soriano, D. A., Notestein, J., Tyo, K., Dunn, J., Tarpeh, W. A., Wells, G. F.
  2024; 91: 103225
- **35 challenges in materials science being tackled by PIs under 35(ish) in 2024** *MATTER*
  Abanades Lazaro, I., Anastasaki, A., Ardona, H. M., Arguilla, M. Q., Bati, A. S. R., Batmunkh, M., Besford, Q. A., Browne, M. P., Batmunkh, M., Besford, Q. A., Browne, M. P., Bryant, S. J., Carlotti, et al
  2024; 7 (11): 3699-3706

- **Electrodialysis and nitrate reduction (EDNR) to enable distributed ammonia manufacturing from wastewaters** *ENERGY & ENVIRONMENTAL SCIENCE*
  Guo, J., Liu, M. J., Laguna, C., Miller, D. M., Williams, K. S., Clark, B. D., Munoz, C., Blair, S. J., Nielander, A. C., Jaramillo, T. F., Tarpeh, W. A.
  2024
- **Persistence of respiratory, enteric, and fecal indicator viruses in fecal sludge from on-site sanitation in Dakar, Senegal** *JOURNAL OF WATER SANITATION AND HYGIENE FOR DEVELOPMENT*
  Grijalva, L., Seck, A., Roldan-Hernandez, L., Graham, K. E., Boehm, A. B., Tarpeh, W. A.
  2024
- **Enhancing Resource Recovery through Electro-Assisted Regeneration of an Ammonia-Selective Cation Exchange Resin** *ACS ES&T WATER*
  Apraku, E., Laguna, C. M., Wood, R. M., Sharma, N., Dong, H., Tarpeh, W. A.
  2024
- **Flexible Electrochemical Stripping for Wastewater Ammonia Recovery with On-Demand Product Tunability** *ENVIRONMENTAL SCIENCE & TECHNOLOGY LETTERS*
  Kogler, A., Gong, M., Williams, K. S., Tarpeh, W. A.
  2024
- **Engineering a molecular electrocatalytic system for energy-efficient ammonia production from wastewater nitrate** *ENERGY & ENVIRONMENTAL SCIENCE*
  Miller, D. M., Liu, M. J., Abels, K., Kogler, A., Williams, K. S., Tarpeh, W. A.
  2024
- **A US perspective on closing the carbon cycle to defossilize difficult-to-electrify segments of our economy.** *Nature reviews. Chemistry*
  Shaw, W. J., Kidder, M. K., Bare, S. R., Delferro, M., Morris, J. R., Toma, F. M., Senanayake, S. D., Autrey, T., Biddinger, E. J., Boettcher, S., Bowden, M. E., Britt, P. F., Brown, et al
  2024
- **Atomically Dispersed Ru-doped Ti4O7 Electrocatalysts for Chlorine Evolution Reaction with a Universal Activity.** *Small (Weinheim an der Bergstrasse, Germany)*
  Lee, W., Choung, S., Kim, S., Hong, J., Kim, D., Tarpeh, W. A., Han, J. W., Cho, K.
  2024: e2401248
- **ATR-SEIRAS Method to Measure Interfacial pH during Electrocatalytic Nitrate Reduction on Cu** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
  Corson, E. R., Guo, J., Tarpeh, W. A.
  2024; 171 (4)
- **Long-Term Robustness and Failure Mechanisms of Electrochemical Stripping for Wastewater Ammonia Recovery.** *ACS environmental Au*
  Kogler, A., Sharma, N., Tiburcio, D., Gong, M., Miller, D. M., Williams, K. S., Chen, X., Tarpeh, W. A.
  2024; 4 (2): 89-105
- **Ligand Exchange Adsorbents for Selective Phosphate and Total Ammonia Nitrogen Recovery from Wastewaters** *ACCOUNTS OF MATERIALS RESEARCH*
  Clark, B., Sharma, N., Apraku, E., Dong, H., Tarpeh, W. A.
  2024
- **Electrochemical sulfate production from sulfide-containing wastewaters and integration with electrochemical nitrogen recovery.** *Journal of hazardous materials*
  Shao, X., Huang, Y., Wood, R. M., Tarpeh, W. A.
  2024; 466: 133527
- **Long-Term Robustness and Failure Mechanisms of Electrochemical Stripping for Wastewater Ammonia Recovery** *ACS ENVIRONMENTAL AU*
  Kogler, A., Sharma, N., Tiburcio, D., Gong, M., Miller, D. M., Williams, K. S., Chen, X., Tarpeh, W. A.
  2024
- **Meta-omic profiling reveals ubiquity of genes encoding for the nitrogen-rich biopolymer cyanophycin in activated sludge microbiomes.** *Frontiers in microbiology*

Farmer, M., Rajasabhai, R., Tarpeh, W., Tyo, K., Wells, G.
2023; 14: 1287491

- **Cation Incorporation into Copper Oxide Lattice at Highly Oxidizing Potentials.** *ACS applied materials & interfaces*
  Ostervold, L., Smerigan, A., Liu, M. J., Filardi, L. R., Vila, F. D., Perez-Aguilar, J. E., Hong, J., Tarpeh, W. A., Hoffman, A. S., Greenlee, L. F., Clark, E. L., Janik, M. J., Bare, et al
  2023

- **Electrochemical Wastewater Refining: A Vision for Circular Chemical Manufacturing.** *Journal of the American Chemical Society*
  Miller, D. M., Abels, K., Guo, J., Williams, K. S., Liu, M. J., Tarpeh, W. A.
  2023

- **Understanding the Catalytic Active Sites of Crystalline CoSbxOy for Electrochemical Chlorine Evolution.** *ACS applied materials & interfaces*
  Dong, H., Shao, X., Hancox, S., McBeath, S. T., Tarpeh, W. A., Hoffmann, M. R.
  2023

- **X-ray Absorption Spectroscopy Reveals Mechanisms of Calcium and Silicon Fouling on Reverse Osmosis Membranes Used in Wastewater Reclamation** *ACS ES&T WATER*
  Niemann, V. A., Huck, M., Steinrueck, H., Toney, M. F., Tarpeh, W. A., Bone, S. E.
  2023

- **Reports from the Frontier: Electrifying Chemical Transformations and Separations to Valorize Wastewater Nitrogen** *ELECTROCHEMICAL SOCIETY INTERFACE*
  Liu, M. J., Tarpeh, W. A.
  2023; 32 (2): 29-31

- **Reactive Separation of Ammonia from Wastewater Nitrate via Molecular Electrocatalysis** *ENVIRONMENTAL SCIENCE & TECHNOLOGY LETTERS*
  Liu, M. J., Miller, D. M., Tarpeh, W. A.
  2023; 10 (5): 458-463

- **Mass Transport Modifies the Interfacial Electrolyte to Influence Electrochemical Nitrate Reduction** *ACS SUSTAINABLE CHEMISTRY & ENGINEERING*
  Guo, J., Brimley, P., Liu, M. J., Corson, E., Munoz, C., Smith, W., Tarpeh, W. A.
  2023

- **Co-designing Electrocatalytic Systems with Separations To Improve the Sustainability of Reactive Nitrogen Management** *ACS CATALYSIS*
  Niemann, V. A., Benedek, P., Guo, J., Xu, Y., Blair, S. J., Corson, E. R., Nielander, A. C., Jaramillo, T. F., Tarpeh, W. A.
  2023; 13 (9): 6268-6279

- **A Unit Process Approach to Nontarget Screening of Organic Contaminants during Urine Treatment** *ACS ES&T ENGINEERING*
  Tarpeh, W. A., Du, Y., Carpenter, C. M. G., Rodriguez, E. E., Helbling, D. E., Aga, D. S., Love, N. G., Wigginton, K. R.
  2023

- **Electrifying climate change mitigation** *NATURE ENERGY*
  Tarpeh, W. A.
  2022

- **Electrified Ion Exchange Enabled by Water Dissociation in Bipolar Membranes for Nitrogen Recovery from Source-Separated Urine.** *Environmental science & technology*
  Dong, H., Laguna, C. M., Liu, M. J., Guo, J., Tarpeh, W. A.
  2022

- **QSDsan: an integrated platform for quantitative sustainable design of sanitation and resource recovery systems** *ENVIRONMENTAL SCIENCE-WATER RESEARCH & TECHNOLOGY*
  Li, Y., Zhang, X., Morgan, V. L., Lohman, H. A. C., Rowles, L. S., Mittal, S., Kogler, A., Cusick, R. D., Tarpeh, W. A., Guest, J. S.
  2022

- **Advanced ion transfer materials in electro-driven membrane processes for sustainable ion-resource extraction and recovery** *PROGRESS IN MATERIALS SCIENCE*
  Zhao, Y., Mamrol, N., Tarpeh, W. A., Yang, X., Gao, C., van der Bruggen, B.

2022; 128

- **Taking Earth's Pulse with Low-Cost Sensors** *ACS SENSORS*
  Bakker, E., Ward, C. P., Tarpeh, W., Wang, Z.
  2022; 7 (6): 1613
- **Recovery of Clean Water and Ammonia from Domestic Wastewater: Impacts on Embodied Energy and Greenhouse Gas Emissions.** *Environmental science & technology*
  Shin, C., Szczuka, A., Liu, M. J., Mendoza, L., Jiang, R., Tilmans, S. H., Tarpeh, W. A., Mitch, W. A., Criddle, C. S.
  2022
- **Diurnal Variability of SARS-CoV-2 RNA Concentrations in Hourly Grab Samples of Wastewater Influent during Low COVID-19 Incidence.** *ACS ES&T water*
  Mendoza Grijalva, L., Brown, B., Cauble, A., Tarpeh, W. A.
  2022; 2 (11): 2125-33
- **Catalytic Performance and Near-Surface X-ray Characterization of Titanium Hydride Electrodes for the Electrochemical Nitrate Reduction Reaction.** *Journal of the American Chemical Society*
  Liu, M. J., Guo, J., Hoffman, A. S., Stenlid, J. H., Tang, M. T., Corson, E. R., Stone, K. H., Abild-Pedersen, F., Bare, S. R., Tarpeh, W. A.
  2022
- **Resin-Mediated pH Control of Metal-Loaded Ligand Exchangers for Selective Nitrogen Recovery from Wastewaters.** *ACS applied materials & interfaces*
  Clark, B., Gilles, G., Tarpeh, W. A.
  2022
- **Quantifying and Characterizing Sulfide Oxidation to Inform Operation of Electrochemical Sulfur Recovery from Wastewater** *ACS ES&T ENGINEERING*
  Shao, X., Johnson, S. R., Tarpeh, W. A.
  2022
- **Application of plasma for the removal of pharmaceuticals in synthetic urine** *ENVIRONMENTAL SCIENCE-WATER RESEARCH & TECHNOLOGY*
  Rodriguez, E. E., Tarpeh, W. A., Wigginton, K. R., Love, N. G.
  2022
- **Systematic Evaluation of Emerging Wastewater Nutrient Removal and Recovery Technologies to Inform Practice and Advance Resource Efficiency** *ACS ENVIRONMENTAL SCIENCE AND TECHNOLOGY ENGINEERING*
  Kogler, A., Farmer, M., Simon, J. A., Tilmans, S., Wells, G. F., Tarpeh, W. A.
  2021; 1 (4): 662-684
- **An Evolving Insight into Metal Organic Framework-Functionalized Membranes for Water and Wastewater Treatment and Resource Recovery** *Industrial & Engineering Chemistry Research*
  Le, T., Chen, X., Dong, H., Tarpeh, W., Perea-Cachero, A., Coronas, J., Martin, S. M., Mohammad, M., Razmjou, A., Esfahani, A. R., Koutahzadeh, N., Cheng, P., Kidambi, et al
  2021; 60 (19): 6869–6907
- **Making wastewater obsolete: Selective separations to enable circular water treatment.** *Environmental science and ecotechnology*
  Tarpeh, W. A., Chen, X.
  2021; 5: 100078
- **Selective aqueous ammonia sensors using electrochemical stripping and capacitive detection** *AIChE Journal*
  Lalwani, A., Dong, H., Mu, L., Woo, K., Johnson, H. A., Holliday, M. A., Guo, J., Senesky, D. G., Tarpeh, W. A.
  2021
- **Electro-assisted regeneration of pH-sensitive ion exchangers for sustainable phosphate removal and recovery.** *Water research*
  Dong, H., Wei, L., Tarpeh, W. A.
  2020; 184: 116167
- **Selective recovery of ammonia nitrogen from wastewaters with transition metal-loaded polymeric cation exchange adsorbents.** *Chemistry (Weinheim an der Bergstrasse, Germany)*
  Clark, B., Tarpeh, W.

2020

- **Novel two-chamber tubular microbial desalination cell for bioelectricity production, wastewater treatment and desalination with a focus on self-generated pH control** *Desalination*
  Jafary, T., Al-Mamun, A., Alhimali, H., Baawain, M., Rahman, S., Tarpeh, W. A., Dhar, B., Kim, B.
  2020; 481

- **The role of intraparticle diffusion path length during electro-assisted regeneration of ion exchange resins: implications for selective adsorbent design and reverse osmosis pretreatment** *Chemical Engineering Journal*
  Dong, H., Wu, Z., Liu, M. J., Tarpeh, W. A.
  2020

- **Validation and mechanism of a low-cost graphite carbon electrode for electrochemical brine valorization** *ACS Sustainable Chemistry & Engineering*
  Mu, L., Wang, Y., Tarpeh, W. A.
  2020; 8 (23): 8648-8654

- **Process design tools and techno-economic analysis for capacitive deionization.** *Water research*
  Hasseler, T. D., Ramachandran, A. n., Tarpeh, W. A., Stadermann, M. n., Santiago, J. G.
  2020; 183: 116034

- **Building an operational framework for selective nitrogen recovery via electrochemical stripping.** *Water research*
  Liu, M. J., Neo, B. S., Tarpeh, W. A.
  2019; 169: 115226

- **Selective Hydrogenation of Furfural in a Proton Exchange Membrane Reactor Using Hybrid Pd/Pd Black on Alumina** *CHEMELECTROCHEM*
  Carl, S., Waldrop, K., Pintauro, P., Thompson, L. T., Tarpeh, W. A.
  2019

- **Sanitation for Low-Income Regions: A Cross-Disciplinary Review.** *Annual review of environment and resources*
  Hyun, C., Burt, Z., Crider, Y., Nelson, K. L., Sharada Prasad, C. S., Rayasam, S. D., Tarpeh, W., Ray, I.
  2019; 44 (1): 287-318

- **Quantitative Evaluation of an Integrated System for Valorization of Wastewater Algae as Bio-oil, Fuel Gas, and Fertilizer Products** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Li, Y., Tarpeh, W. A., Nelson, K. L., Strathmann, T. J.
  2018; 52 (21): 12717–27

- **Effects of operating and design parameters on ion exchange columns for nutrient recovery from urine** *ENVIRONMENTAL SCIENCE-WATER RESEARCH & TECHNOLOGY*
  Tarpeh, W. A., Wald, I., Wiprachtiger, M., Nelson, K. L.
  2018; 4 (6): 828–38

- **Electrochemical Stripping to Recover Nitrogen from Source-Separated Urine** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Tarpeh, W. A., Barazesh, J. M., Cath, T. Y., Nelson, K. L.
  2018; 52 (3): 1453–60

- **Evaluating ion exchange for nitrogen recovery from source-separated urine in Nairobi, Kenya** *Development Engineering*
  Tarpeh, W. A., Wald, I., Omollo, M. O., Egan, T., Nelson, K. L.
  2018; 3: 188-195

- **Life-Cycle Cost and Environmental Assessment of Decentralized Nitrogen Recovery Using Ion Exchange from Source-Separated Urine through Spatial Modeling** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Kavvada, O., Tarpeh, W. A., Horvath, A., Nelson, K. L.
  2017; 51 (21): 12061–71

- **The sanitation and urban agriculture nexus: urine collection and application as fertilizer in Sao Paulo, Brazil** *JOURNAL OF WATER SANITATION AND HYGIENE FOR DEVELOPMENT*
  Chrispim, M. C., Tarpeh, W. A., Salinas, D. T. P., Nolasco, M. A.
  2017; 7 (3): 455–65

- **Comparing Ion Exchange Adsorbents for Nitrogen Recovery from Source-Separated Urine** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
  Tarpeh, W. A., Udert, K. M., Nelson, K. L.
  2017; 51 (4): 2373–81