

## Andrew Carter Lesh

- Ph.D. Student in Civil and Environmental Engineering, admitted Autumn 2022
- Ph.D. Minor, Computer Science

### Publications

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#### PUBLICATIONS

- **Solvent selection enables sustainable and affordable lignin biocomposite for cement-free construction** *CLEANER MATERIALS*  
Miao, B. H., Woo, D., Lesh, A. C., Loftus, D. J., Lepech, M. D.  
2026; 19
- **AI-powered non-destructive testing for smart manufacturing of carbon-negative biopolymer-bound soil composite.** *Communications engineering*  
Miao, B. H., Dong, Y., Theissler, A., Lesh, A. C., Loftus, D. J., Lepech, M. D.  
2026
- **Recycling of lignin-based biocomposites: Improving sustainability and enhancing material strength** *RESOURCES CONSERVATION AND RECYCLING*  
Miao, B. H., Woo, D., Javan, D., Garboczi, E. J., Headrick, R. J., Lesh, A. C., Li, Z., Loftus, D. J., Lepech, M. D.  
2025; 215
- **Taking advantage of biological binders to solidify granular material: manufacture and recyclability of lignin-based biopolymer composites**  
Miao, B. H., Lesh, A. C., Loftus, D. J., Lepech, M. D.  
edited by Knez, M., Martín-Palma, R. J., Lakhtakia, A.  
SPIE-INT SOC OPTICAL ENGINEERING.2025
- **Lunar Farside Technosignature & Transients Telescope (LFT3)**  
DeBoer, D. R., Ashe, C. K., Johnson, O. A., Keane, E. F., Lesh, A. C., Marshall, E. J., Prabu, S., Reenock, K. L., Slosar, A., Tremblay, C. D., Turner, J. D., Warnick, K. F., Siemion, et al  
Breakthrough Initiatives.  
2025
- **BioSys: Efficient Quality Control System for Manufacturing of Sustainable Biopolymer Composites**  
Miao, B. H., Dong, Y., Theissler, A., Lesh, A. C., Loftus, D. J., Lepech, M. D., ACM  
ASSOC COMPUTING MACHINERY.2024: 11-21
- **Modular Outfitting Systems for Lunar Habitation** *SpaceChi 3.0 conference*  
Konstantatou, M., Navarro Perez, S., Gallou, I., Punch, O., Guberman, M., Dobbin, B., Goodloe, D., Loftus, D. J., Lesh, A., Lepech, M. D.  
2023
- **Manufacturing Development of Chargeable Atomic Batteries, an Affordable Alternative to Plutonium-based Radioisotope Heater Units and Thermoelectric Generators** *Nuclear and Emerging Technologies for Space*  
Lesh, A., Morrison, C.  
Oak Ridge National Laboratory.2021
- **Modeling Chemical Reactions and Diffusion in an MMRTG Plutonia Pellet** *Nuclear and Emerging Technologies for Space*  
Cheu, D., Hafen, J., Herring, S., Judd, K., Killian, Q., Lesh, A., Nielsen, C., Perry, A.  
Oak Ridge National Laboratory.2020