Mythreyi Sivaraman

Education

PhD student in Civil and Environmental Engineering, University of Massachusetts, Lowell- *Current*

Master of Engineering in Chemical Engineering, University of Waterloo, Waterloo, ON – *2016*

Bachelor of Technology in Chemical Engineering, Sastra University, India – *2014*

Research Experience

Research Assistant *Sep 2019-Present*

University of Massachusetts, Lowell, MA

As research assistant, lead research activities for selective ion separation of rare earth elements using ion-exchange membranes and characterization of microplastics using thermal degradation and microscopic analysis.

- Design and perform experiments for selective ion removal.
- Characterize microplastics using Pyrolysis- Gas Chromatography-Mass Spectrometry and Fluorescence microscopy.
- Analyze experimental results using Atomic Absorption Spectroscopy and Inductively Coupled Plasma Emission Spectroscopy.
- Review technical documents and manuscripts for data gathering and result validation.

Research Associate *Aug 2018 – Jun 2019*

University of Waterloo, Waterloo, ON

As a research engineer lead the development of environmental models for better understanding the environmental impact of high-level radioactive waste.

- Developed conceptual kinetic and rate transport models, through extensive research on electrochemical and thermodynamic properties of Copper, Bentonite and other materials used in the engineered barriers.
- Performed probabilistic analysis on long lived radionuclide behaviour in the environment, defining safe exposure ranges within specified Canadian limits.

Professional Experience

Operator in Training *July 2017 – Aug 2018*

Bruce Power, Tiverton, ON

Key Responsibilities:

- Monitor plant parameters in accordance with environmental protection standards to detect actual or potential problems that could hamper plant operation. Investigate discrepancies with utmost caution and conservative attitude.
- Apply human performance tools when operating plant equipment understanding manipulation of components.
- Review of operating documentation to enhance knowledge and be up to date on plant operating conditions.
- Collaborate with engineering teams to understand system design and system purposes.

Awards

- **Second place Poster Competition,** 36th Annual East Coast Conference, Amherst
- **Award for Innovation,** Society for Petrochemical Engineers, Waterloo
- **Graduate Research Scholarship,** Waterloo

Publications

- Barragan N, Bedi D, Sivaraman M, Loya J, Hutchins K, Findlater, Yan W “Selective Removal of Barium and Hardness Ions from Brackish Water with Chemically Enhanced Electrodialysis” **ES& T Water**