Neha Kulkarni

Hyderabad, TS, 500084 | 8208554182 | nehakulkarni1394@gmail.com

Skills:

- Experimental Skills: Emulsions, Microspheres Synthesis, Nanoparticle Synthesis, Confocal Laser Scanning Microscope (CLSM), Fluorescence Microscope, Optical Microscope, Goniometer (contact angle measurement), Dynamic Laser Scanning (DLS), Fluorescence Spectrophotometer, Homogenizer, Scanning Electron Microscope (SEM)
- Programming Skills: Python, C, C++, MATLAB, Image Processing
- Analytical Skills: Statistical Analysis, Design of Experiments (DOE)

Projects:

- **Stability of water-in-water pickering emulsions** **July 2017 – Jan 2021**
  Master's Project **IIT-Madras**

  Water-in-water (w/w) emulsions are formed by mixing two uncharged polymers which are extensively used in food formulation (eg: flavor delivery in ice-creams), cosmetics (oil-free creams) and pharmaceutical industries (drug delivery). Kinetic stability of w/w emulsions was investigated by adding oppositely charged particles. Emulsions were observed under CLSM and characterized by size and number of emulsion droplets.

- **Self assembly of oppositely charged particles at oil-water interface** **Aug 2017 – Nov 2017**
  Course Project **IIT-Madras**

  Colloidal particles adsorb at fluid-fluid interfaces and interact via capillary force and electrostatic dipolar repulsion. Different patterns were observed under microscope as charged particles modulate these forces and assemble at the oil-water interface.

Publication:

Neha Kulkarni & Ethayaraja Mani, Stabilization of water-in-water pickering emulsions by charged particles, *Journal of Dispersion Science and Technology*, 2021, DOI:10.1080/01932691.2021.1931285

Education:

- Master of Science: Chemical Engineering, IIT Madras, Chennai **July 2017 – Jan 2021**
  Polymer Engineering and Colloid Science Lab (PECS) **GPA: 7.81**
  Course work in Advanced Chemical Engineering Thermodynamics, Mathematical Methods in Chemical Engineering, Colloids and Surfaces, Chemical Reactor Theory, Design of Experiments
- Advance post graduate Diploma in Process Engineering, MIT Skills, Pune **Aug 2016 – Dec 2016**
  Course work in Basic Engineering Package (BEP), Industrial Processes for Separation, Fluid handling, Utility handling, Reactor design **Score: 71.45%**
- Bachelor of Engineering in Chemical engineering **June 2016 GPA: 8.65**

Conferences:

- Poster Presentation, "**Stabilization of water-in-water emulsions by oppositely charged particles**", **Neha Kulkarni**, Ethayaraja Mani, September 2019, European Colloid and Interface Society (ECIS), **KU Leuven**, **Belgium.**