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RANGANATHAN GOPALAKRISHNAN

Education:

- Ph. D., University of Minnesota – Twin Cities, Minneapolis, MN, U. S. A. August 2013.
  Co-Advisers: Prof. Christopher J. Hogan Jr. and Prof. Peter H. McMurry
  Thesis Title: Transition Regime Collisions in Aerosols
  Recipient of 2012-13 University of Minnesota Doctoral Dissertation Fellowship
  Honorable Mention, University of Minnesota Best Dissertation Competition 2014

- Bachelor of Technology (Mechanical Engineering), National Institute of Technology, Tiruchirapalli, India. May 2008.

Current Employment:

- Postdoctoral Scholar in Chemical Engineering, University of California Berkeley.
  October 2014 to present
  Research Supervisor: Professor David B Graves

Previous Employment:

- Postdoctoral Scholar in Chemical Engineering, California Institute of Technology.
  September 2013 to September 2014.
  Research Supervisor: Professor Richard C. Flagan

Teaching Experience:

ME 4031W: Basic Mechanical Measurements Laboratory (University of Minnesota)
Terms: Fall 2009, Fall 2010, Spring 2011, Fall 2011 and Spring 2012
Instructor: Prof. Peter H. McMurry
Responsibilities: Leading lab sections, grading lab reports, conducting Labview® hands on demonstrations, lab management, assistance in student projects.

ME 3332: Thermal Sciences II (University of Minnesota)
Term: Spring 2010
Instructor: Prof. Christopher J. Hogan Jr.
Responsibilities: Leading Recitations, grading, holding office hours for assisting students.

Professional Service

- Reviewer, Aerosol Science and Technology Journal
- Reviewer, Journal of Aerosol Science

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Peer Reviewed Journal Publications:

1. **Gopalakrishnan, R.,** & Hogan, C. J. (2011), Determination of the Transition Regime Collision Kernel from Mean First Passage Times. *Aerosol Science and Technology.45: 1499-1509.*

2. **Gopalakrishnan, R.**, Thajudeen, T. & Hogan, C. J. (2011), Collision limited Reaction Rates for Arbitrarily Shaped Particles Across the entire Diffusive Knudsen Number Range. *Journal of Chemical Physics. 135: 054302.*

3. **Gopalakrishnan, R.,** & Hogan, C. J. (2012), Coulomb-Influenced Collisions in Aerosols and Dusty Plasmas. *Phys. Rev. E 85, 026410.*

4. Thajudeen, T., **Gopalakrishnan, R.** & Hogan, C. J. (2012), The Collision Rate of Non-spherical Particles and Aggregates for all Diffusive Knudsen Numbers. *Aerosol Science and Technology, 46:11, 1174-1186.*

5. Ouyang, H., **Gopalakrishnan, R.** & Hogan, C. J. (2012), Nanoparticle Collisions and Growth in the Gas Phase in the Presence of Singular Attractive Potentials. *Journal of Chemical Physics. 137: 064316.*

6. **Gopalakrishnan, R.**, Meredith, M. J., Larriba, C. & Hogan, C. J., Brownian Dynamics Determination of the Bipolar Steady Charge Distribution on Sphere and Non-spheres in the Transition Regime. (2013). *Journal of Aerosol Science 63:126-145*.

7. **Gopalakrishnan, R.**, Thajudeen, T., Ouyang, H. & Hogan, C. J., The Unipolar Diffusion Charging of Arbitrary Shaped Aerosol Particles. (2013). *Journal of Aerosol Science 64:60-80*.

8. **Gopalakrishnan, R.**, McMurry, P. H., & Hogan, C. J., Experimental Verification of a Transition Regime Drag Law using High Aspect Ratio Nanoparticles. Accepted for publication with *Journal of Aerosol Science*

9. **Gopalakrishnan, R.**, McMurry, P. H., & Hogan, C. J., Experimental Studies of Bipolar Diffusion Charging of Spherical and Cylindrical Aerosol Particles. (*In preparation*)

10. **Gopalakrishnan, R.**, Efficient Methods for calculating Image and Dispersion Interactions for Arbitrary Morphologies. (*In preparation*)

11. **Gopalakrishnan, R.**, & Flagan, R. C., Re-entrainment of carbon black nanoparticles from glass surfaces for indoor air quality studies. (*In preparation*)

Conference Posters and Presentations:

1. **Gopalakrishnan, R.** (Presenter), Thajudeen, T., McMurry, P. H., & Hogan, C. J., Bipolar and Unipolar Charging of Non-Spherical Particles using Brownian Dynamics

Simulations. *International Aerosol Conference*, Helsinki, Finland, August 29th – September 3rd, 2010.

2. **Gopalakrishnan, R.** (Presenter), Thajudeen, T., & Hogan, C. J., A Shape Independent Collision Kernel Valid for All Knudsen Numbers. *European Aerosol Conference*, Manchester, United Kingdom, September 4th – 9th, 2011.

3. **Gopalakrishnan, R.** & Hogan, C. J. (Presenter), A revised model of Aerosol Diffusion Charging. *American Association for Aerosol Research Annual Conference*, Orlando, FL, October 3rd – 7th, 2011.

4. Hogan, C. J. (Presenter), **Gopalakrishnan, R.** & Ouyang, H., Determination of the Transition Regime Collision Rate in the Presence of Potential Interactions from Mean First Passage Time Calculations. *European Aerosol Conference*, Granada, Spain, September 2nd – 7th, 2012.

5. Ouyang, H., **Gopalakrishnan, R.,** & Hogan, C. J., Potential Enhanced Particle Growth in the Transition regime. *American Association for Aerosol Research Conference*, Minneapolis, MN, USA, October 8th – 12th, 2012.

6. **Gopalakrishnan, R.**, Thajudeen, T., & Hogan, C. J., Diffusion Charging of Non-Spherical Aerosol Particles from Brownian Dynamics Simulations. *American Association for Aerosol Research Conference*, Minneapolis, MN, USA, October 8th – 12th, 2012.

7. **Gopalakrishnan, R.** (Presenter), McMurry, P. H., & Hogan C. J., Drag Measurements of Cylindrical Aerosol Particles in the Transition Regime. *American Association for Aerosol Research Conference*, Minneapolis, MN, USA, October 8th – 12th, 2012.

8. **Gopalakrishnan, R.,** & Hogan C. J. (Presenter), The Unipolar Charging Rate and Bipolar Charge Distribution for Nonspherical Particles. *European Aerosol Conference*, Prague, Czech Republic, September 1st – 6th, 2013.

9. **Gopalakrishnan, R.** (Presenter), & Hogan C. J., Study of the Unipolar and Bipolar Diffusion Charging of Arbitrary Shaped Aerosol Particles by Brownian Dynamics Simulations. *American Association for Aerosol Research Conference*, Portland, OR, USA, September 30th- October 4th, 2013.

10. **Gopalakrishnan, R.**, McMurry, P. H., & Hogan C. J. (Presenter), Experimental Bipolar Diffusion Charging of Spherical and Cylindrical Aerosol Particles with Detailed Characterization of the Charging Ions. *American Association for Aerosol Research Conference*, Orlando, FL, USA, October 20th – 24th, 2014.

11. Leppa, J. (Presenter), **Gopalakrishnan, R.**, & Flagan, R. C., A Method for Estimating the Bipolar Charge Distribution Variation of Aerosol Particles with Atmospheric Conditions. Fall Meeting of the American Geophysical Union, San Francisco, CA, USA, December 15th-19th, 2014.