Aditya Jaishankar

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA
Ph.D. candidate in Mechanical Engineering, GPA: 4.7/5.0, Minor in Mathematics **June 2014**
Master of Science in Mechanical Engineering **June 2011**

INDIAN INSTITUTE OF TECHNOLOGY MADRAS, Chennai, India. **July 2009**
Bachelor of Technology in Mechanical Engineering, GPA: 9.21/10.0, Minor in Chemistry

EXPERIENCE

NON-NEWTONIAN FLUIDS LAB (MIT), Cambridge, MA **2009-Present**
Graduate Research Assistant: Conducted modeling and experimental research on power law rheology of physically and chemically cross-linked gels, polymers, biomacromolecules and soft materials.

- Developed a constitutive model to predict the tack force generated by pressure sensitive adhesives.
- Pinpointed the origin of unusual shear thickening exhibited by a polysaccharide physical gel using shear and extensional rheology.
- Measured the extensional viscoelasticity of Hylauronic acid solutions using cross-slot extensional rheometry and proposed a diagnostic tool for arthritis patients.
- Developed constitutive models to describe and characterize power law rheological responses exhibited by physical and chemical gels, biological cells, polymer-nanoparticle mixtures, and viscoelastic interfaces.
- Clarified and investigated in detail the existence and origin of interfacial viscoelasticity exhibited by globular protein solutions.

CENTER FOR NON-DESTRUCTIVE TESTING (IIT-M), Chennai, India **2007-2009**
Undergraduate Research Assistant: Applied the principles of non-destructive testing to composite materials.

- Built molds for studying the vacuum assisted resin transfer molding process for glass fiber reinforced composites.
- Experimentally determined the location of the fill front during the curing process of glass fiber reinforced composites using ultrasonic lamb waves.

LEADERSHIP

MENTOR, DEPARTMENT OF MECHANICAL ENGINEERING, MIT, Cambridge, MA **Summer 2011**
Advised summer high school intern and provided research guidance in microscopy techniques. Student was successfully admitted to MIT Class of 2016.

TEACHING ASSISTANT, DEPARTMENT OF MECHANICAL ENGINEERING, MIT, Cambridge, MA **Fall 2011**
Conducted problem solving sessions and maintained weekly office hours for graduate level fluid mechanics (80 students). Received an overall teaching score of 6.3/7.0.

LAB TRAINER, NON-NEWTONIAN FLUIDS GROUP, MIT, Cambridge, MA **2010-Present**
Conducted training sessions for stress and strain controlled rheometry for MIT researchers. Proposed initial experimental protocols.

AWARDS AND ACTIVITIES

- Awarded the MIT Presidential Fellowship.
- Awarded a gold medal and adjudged 'Best in the experimental program' at the Indian National Chemistry Olympiad amongst 30,000 candidates.
- Peer reviewer for Soft Matter and Rheologica Acta journals.

SKILLS

Experimental: Stress- and strain-controlled rheometry, microfluidic viscometry, capillary breakup, filament stretching and cross-slot extensional rheometry, surface tensiometry, flow-induced-birefringence, particle image velocimetry, optical microscopy, high speed videography.
Tools: Mathematica, MATLAB, LaTeX, SolidWorks, Blender.

PUBLICATIONS

Journal Papers: 2 first author, 2 second author, and 1 third author, 5 conference oral presentations and 1 conference poster presentation. Detailed list is available upon request or at http://web.mit.edu/adityaj/www/