

# Venketesh Ranganathan, M.Sc

[ St John's], [Newfoundland, Canada]

[Phone: +1 709 771 9979] [vthrithamara@gmail.com]

## Summary

- ✓ Soft matter/Bio physics researcher with expertise in diverse experimental techniques leading to 4 publications and 3 project grants.
- ✓ Successful communicator and collaborator with experience in presenting detailed research in bound time to scientific and non-scientific audience leading to 2 invited talks, 10 presentations, and building 2 international collaborations.
- ✓ A multitask manager with excellent leadership and teamwork skills leading to holding executive positions in 5 committees.

## Work Experience

*PhD in soft matter/Biophysics*

2017-2021

A living biological cell is crowded with multiple molecules at a high concentration of 300 to 400 g/L. Each molecule is in the simultaneous action of multiple potentials. We create laboratory models for such complex system to understand the dynamics of molecules under complex crowding conditions using **nuclear magnetic resonance spectroscopy** and structure using **small angle neutron scattering experiments**. We measure their flow and mechanical properties using **rheology** techniques.

*Supervisors grant for scattering experiments*

Jan-2020

At NIST USA, we have performed **small angle neutron scattering** experiments to understand and model the structure and effects of crowding on structure of a polysaccharide Laboratory model crowders, Ficoll.

*MITACS globalink research grant*

2019

CNRS - France

Experimented the possibilities of producing enzyme functionalized nano-particles and characterizing them with **dynamic light scattering** experiments and chemical kinetics with **UV-Vis spectroscopy**

*Research Assistant*

2015-2017

Raman Research Institute, Bangalore

- ✓ Designed a project to develop time dependent mechanical strength clay gels and characterized it using **rheometry, scanning electron microscopy** and **UV-Vis spectroscopy**
- ✓ Developed a project theme to understand the influence of structural correlations in water on the mechanical properties of aqueous clay suspensions (Project submitted to Langmuir, ACS Journal, 2020).

Indian Institute of Technology, Madras

- ✓ Using **broadband dielectric spectroscopy** and **Raman spectroscopy**, our group identified and explained the physics behind broadening of isopermittive point observed in water under low frequency scans and correlated to the hydrogen bond structural correlations in water.

## Education

Ph.D., Soft matter/Biophysics, Memorial University of Newfoundland, Canada	2017 – Present
M.Sc, Physics, Indian Institute of Technology, Madras, India	2013 – 2015
B.Sc., Physics major, University of Calicut, Kerala, India	2007 - 2010

## Honors & Awards

- ✓ MITACS globalink award 2019
- ✓ Research Assistant fellowship from RRI Bangalore
- ✓ Project grant from Indian Institute of Astrophysics – Summerintern
- ✓ GSU graduate student of the week award from GSU for the service to graduate students at Memorial University
- ✓ Certificate award from Freedom employability academy for mentorship and guidance to disadvantaged youth in India.

## Conferences/Talks

- ✓ Biophysics 65<sup>th</sup> annual conference: to be held in February 23<sup>rd</sup>
- ✓ Resource person for Amal Jyothi Engineering College special conference of biomedical instrumentation: research challenges 26-Augus-2020
- ✓ Soft matter conference Canada 17-June-2020
- ✓ Invited Talk at University of British Colombia, Canada 2018 & 2020
- ✓ MITACS research talk 20-June-2019
- ✓ Annual In-house meeting Raman Research Institute Bangalore, India 2016 & 2017
- ✓ Phenomenon in soft and active matter physics: Conference JNCASR Bangalore 2017
- ✓ Annual in house meeting Indian Institute of Technology Madras 2015

## International Collaborators

- ✓ Dr Francesco Piazza University of Orléans and Centre de Biophysique Moléculaire (CBM), CNRS - UPR4301, Orléans, France
- ✓ Dr Josef Hamacek Institution: University of Orléans and Centre de Biophysique Moléculaire (CBM), CNRS - UPR4301, Orléans, France
- ✓ Dr Yun Liu, Instrument Scientist at NCNR, NIST USA

## **Publications**

- ✓ **Ranganathan, Venketesh Thrithamara**, Yun Liu, and Anand Yethiraj. "Structure and Dynamics of Ficoll (Polysucrose)." *Biophysical Journal* 120.3 (2021): 76a.
- ✓ Misra, Chandeshwar, **Venketesh T. Ranganathan**, and Ranjini Bandyopadhyay. "Competing effects of solvent microstructures and electrostatic interactions on the aging dynamics and rheology of aqueous suspensions of a soft colloidal clay (*Submitted to Langmuir after revision on 18/02/2020*).
- ✓ Geethu, P. M., **Venketesh T. Ranganathan**, and Dillip K. Satapathy. "Inferences on hydrogen bond networks in water from isopermittive frequency investigations." *Journal of Physics: Condensed Matter* 30.31 (2018): 315103.
- ✓ **Ranganathan, Venketesh Thrithamara**, and Ranjini Bandyopadhyay. "Effects of aging on the yielding behaviour of acid and salt induced Laponite gels." *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 522 (2017): 304-309.

## **Leadership activities**

- ✓ President Graduate Student Society of B & C Family Residency
- ✓ Graduate student representative Biopolymers in vivo group of Biophysical Society
- ✓ Vice president – International Student resource Centre Memorial University of Newfoundland
- ✓ Graduate Student Representative in Graduate Student Union from Physics Dept, Memorial University.
- ✓ Member at Large Graduate Physical Society
- ✓ Member of Biophysical Society.
- ✓ Ex-Mentor to disadvantaged youth in India for assisting their professional development through Freedom English Academy

## **Other Activities**

- ✓ Referee for the Journal, Journal of Physics Condensed Matter IOPScience