

Department of Physics (2021-22)  
Mount Carmel College, Bengaluru

Webinar

Webinar

Date: 28th October, 2021  
Time: 5:30 PM- 6:30 PM  
Platform: Microsoft Teams

Fluid Dynamics and Droplets

Dr. K S Shamala, Associate Professor  
Dept of Physics, Mount Carmel College

Mount Carmel College Autonomous  
SCIENCE WEEK  
PRATIBIMB AYUSHI  
THE PHYSICS  
ASSOCIATION PRESENTS  
A Webinar on:  
**FLUID DYNAMICS OF DROPLETS**



By Dr. Shamala K S  
Associate Prof.  
Mount Carmel  
College.

28th October,  
Thursday  
5:30-6:30pm  
Platform:MS Teams

FOR QUERIES,  
CONTACT:  
Sonia M.- 9384531879  
Andrea-7781051101

Fluid Dynamics Of Droplets - Webinar

55:52

Request control

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RN NIVEDITHA R  
PJ PETRICIA CHRISTINA JOHN  
PC PRATHISHTA GOWRAMMA K C  
RP RAKSHITHA U P  
RT RAVINA THAKUR  
RM RIA MAJUMDAR  
RICHIA DUGAR  
RA RUQIYA ALI  
SABAUNNISA S  
ST SHIV PRIYA THAKUR

Droplet nuclei, will penetrate deeper into the respiratory system, and this could affect the progression and intensity of the infection. Imaging modalities such as computed tomography (CT) and magnetic resonance imaging (MRI) provide realistic anatomical models for experiments and CFD models from which local deposition can be quantified. A recent study even included the immune system response in the model (Haghnegahdar, Zhao & Feng 2019), and similar models that combine fluid dynamics, biomechanics and virology could serve as important tools in combating such pandemics.

Measures to mitigate transmission  
4.1 Mucus property modification  
The physical properties of the mucus play a key role in droplet formation within the respiratory tract. Transient modification of the physical properties of the mucus lining via material delivery to enhance mucus stability therefore provides a means for reducing infection rates. Fiegel et al. (2006) used isotonic saline to change the mucus lining properties via the induced ionic charge to reduce droplet formation, and Edwards et al. (2004) explored the use of surface-tension-enhancing inhalants to reduce droplet generation. These techniques involve complex multiphysics flow phenomena that could benefit from advanced experimental and computational techniques.

Dr. Shamala K S

Activate Windows  
Go to Settings to activate Windows.

Type here to search

25°C Haze 6:06 PM 28-Oct-21

**Talk**

**Date:** 27<sup>th</sup> November, 2021

**Time:** 9:30 PM

**Platform:** You tube

<https://youtu.be/uaVJgwzoUpw>

**Cosmic Tales Session 8: Fly to Space**

**Miss Osho Priya**

**NASA L'Space Proposal Writing and Evaluation team**



**Cosmic Tales**  
The Astronomy Series - Session 8

**Fly to Space with Miss Osho Priya!**

*An insight into undergrad student research, international transfer of credits and getting involved in space with any major.*

**27 NOV** | **9:30 PM (IST)**  
**11:00 AM (EST)**

**Guest Speaker**  
Miss Osho Priya  
Undergrad Research student at University at Buffalo

**Registration Link**  
[shorturl.at/lxOW5](https://shorturl.at/lxOW5)



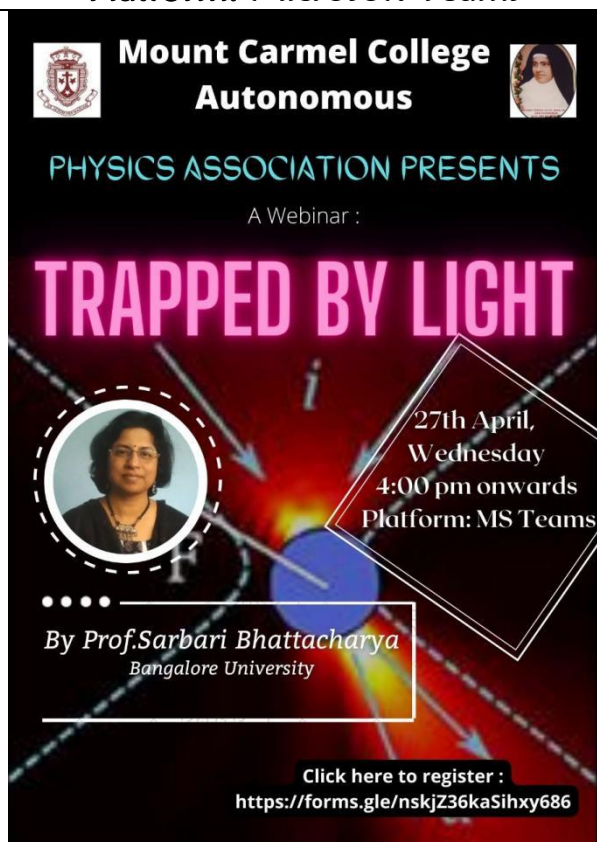
Talks through the projects she has been working on and also her transfer process and how to get involved in Space projects especially when the school and university doesn't have much to offer. She'll also shares her knowledge, pathways and opportunities from a student's perspective.

## Webinar

Date: 27<sup>th</sup> April, 2022

Time: 4:00 PM

Platform: Microsoft Teams



**Mount Carmel College Autonomous**

PHYSICS ASSOCIATION PRESENTS

A Webinar :

# TRAPPED BY LIGHT

27th April, Wednesday  
4:00 pm onwards  
Platform: MS Teams

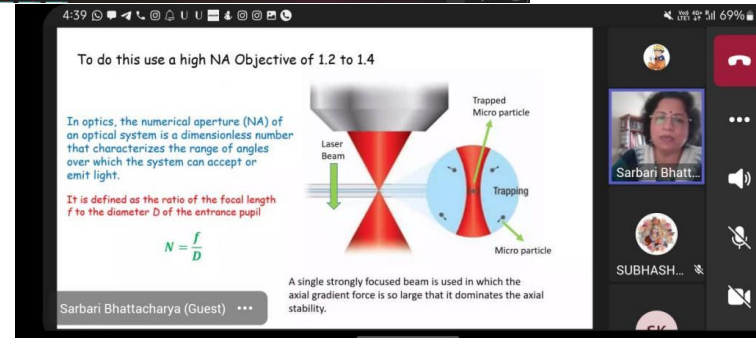
By Prof. Sarbari Bhattacharya  
Bangalore University

Click here to register :  
<https://forms.gle/nskjZ36kaSihxy686>

How does the idea of trapping particles using light translate into an invaluable tool to understand biological systems?

## Trapped by Light

Dr. Sarbari Bhattacharya, Assistant professor,  
Dept. of Physics, Bangalore University



To do this use a high NA Objective of 1.2 to 1.4

In optics, the numerical aperture (NA) of an optical system is a dimensionless number that characterizes the range of angles over which the system can accept or emit light.

It is defined as the ratio of the focal length  $f$  to the diameter  $D$  of the entrance pupil

$$N = \frac{f}{D}$$

A single strongly focused beam is used in which the axial gradient force is so large that it dominates the axial stability.

Sarbari Bhattacharya (Guest)

