

# Dr. M. Sneha Maria

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## Contact Details

Address: 389, O.V. Joseph Street, Golden George Nagar, Mogappair East, Chennai – 600107, Tamilnadu.

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Mobile No: +91-9994985421

## EDUCATION

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Course	Institution	Board/ University	Year of Completion	Marks % / CGPA
Ph.D	Indian Institute of Technology Madras	IIT Madras	2017	8.75
M.Tech	Anna University, Chennai	Anna University	2013	9.59
B. Tech	P.S.G. College Of Technology, Coimbatore.	Anna University	2011	8.68
XII	S.B.O.A. Mat. Hr. Sec. School, Madurai.	State Board	2007	94.91
X	S.B.O.A. Mat. Hr. Sec. School, Madurai.	Matriculation	2005	92.54

## RESEARCH EXPERIENCE

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Oct 2017 – till date	<b>Post-Doctoral Fellow, Indian Institute of Technology Madras</b> Development of a colorimetric detection module for dengue diagnosis
April 2017 – Oct 2017	<b>Pre-Doctoral Fellow, Indian Institute of Technology Madras</b> Development of a colorimetric detection module for dengue diagnosis
July 2013 – April 2017	<b>Doctoral Fellow, Indian Institute of Technology Madras</b> Development of microfluidic devices for blood plasma separation
Dec 2012 – April 2013	<b>Project Intern, National Centre for Cell Science, Pune</b> Molecular motors as Nanocircuits in <i>Leishmania major</i> : Systems and Synthetic Biology perspective
Dec 2010 – April 2011	<b>Project Intern, Madras Diabetes Research Foundation, Chennai</b> Amelioration of glucolipotoxicity-induced Endoplasmic Reticulum stress

May 2009

by a chemical chaperone in Human THP-1 monocytes

**Summer Intern, Sugarcane Breeding Institute, Coimbatore**

Tissue culture of sugarcane and rooting

## **RESEARCH SKILLS**

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### Molecular and Cell Biology

DNA/RNA isolation, Gel electrophoresis, Blotting Techniques (Western and Southern), Molecular cloning, Separation techniques (Filtration, Centrifugation, Paper Chromatography, Thin layer chromatography, Column Chromatography), DNA/RNA/Protein Quantification, DNS Assay, Plant tissue culture techniques, ROS Measurement by Confocal Microscopy, Comet Assay, Animal cell culture, cDNA Conversion, Real time PCR, Caspase 3 assay, MDA assay, ELISA, FACS studies, Antibody/Antigen immobilization on PDMS/silicon, Immochromatographic lateral flow assay.

### Microscopy

Simple, Reflective, Inverted microscopes with Fluorescence filters.

### Bioprocess Technology

Measurement of Fermentor Characteristics.

### Microfluidics

UV lithography, soft lithography, fabrication of PDMS and PMMA microdevices, Ellipsometer, Electron-Beam lithography.

### Nanoscience and technology

Ball Milling, Sol-gel method, Biosynthesis, Chemical precipitation method synthesis of nanomaterials, Graphene synthesis, Spin coating, Graphene Oxide synthesis and reduction, ATR-FTIR, Atomic Force Microscope, Particle Size Analyzer, TG-DTA, UV-Visible Spectrometry, Extraction using Schottky apparatus

### Softwares

MATLAB, Basic Bioinformatics tools, Statistical analysis by SPSS software, Tinker Cell, Berkeley Madonna, Molecular Dynamics Simulation, Homology Modelling, XPPAUT, TINA-TI, ANSYS Fluent.

## **JOURNAL PUBLICATIONS**

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- **M. Sneha Maria, T. S. Chandra, A. K. Sen**, "Capillary flow-driven blood plasma separation and on-chip analyte detection in microfluidic devices" *Microfluidics and Nanofluidics*, 21(72), 1-21, 2017.

Publication : Springer Berlin Heidelberg, Impact factor: 2.344

- **M. Sneha Maria, P. E. Rakesh, T. S. Chandra, A. K. Sen**, “Capillary flow driven microfluidic device with wettability gradient and sedimentation effects for blood plasma separation” *Scientific Reports*, 7(43457), 1-12, 2017.

Publication : Nature, Impact factor: 4.259

- **M. Sneha Maria, P. E. Rakesh, T. S. Chandra, A. K. Sen**, “Capillary flow of blood in a microchannel with differential wetting for blood plasma separation and on-chip glucose detection” *Biomicrofluidics*, 10(054108), 1-15, 2016.

Publication : AIP Publishing, Impact factor: 2.535

- **M. Sneha Maria, B. S. Kumar, T. S. Chandra, A. K. Sen**, “Development of a microfluidic device for cell concentration and blood cell-plasma separation” *Biomedical Microdevices*, 17(115), 1-19, 2015.

Publication : Springer, Impact factor: 2.924

- **M. Sneha Maria, Arul Prakash Francis, Thiyagarajan Devasena**, “In situ isolation and characterization of nano-usnic acid for medical applications” *International Journal of Pharmacy and Pharmaceutical Sciences*, 6(6), 222-226, 2014.

Publication : Innovare Academic Sciences, Impact factor: 0.51

- **Raji Lenin, M. Sneha Maria, Madhur Agrawal, Jayashree Balasubramanyam, Viswanathan Mohan, and Muthuswamy Balasubramanyam**, “Amelioration of Glucolipototoxicity-Induced Endoplasmic Reticulum Stress by a “Chemical Chaperone” in Human THP-1 Monocytes,” *Experimental Diabetes Research*, 356487, 1-10, 2012.

Publication : Hindawi, Impact factor: 2.717

## PRESENTATIONS AT INTERNATIONAL CONFERENCES

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- **M. Sneha Maria, P. E. Rakesh, T. S. Chandra, A. K. Sen**, “Asymmetric capillary flow driven blood-plasma separation in microchannel with a hydrophobic patch and on-chip detection”, 20<sup>th</sup> *International Conference on Miniaturized Systems for Chemistry and Life Sciences,  $\mu$ TAS 2016, Dublin, Ireland, October 09-13, 2016.*
- **M. Sneha Maria, B. S. Kumar, T. S. Chandra, A. K. Sen**, “A microfluidic device for cell concentration and blood cell-plasma separation” 23<sup>rd</sup> *National and 1<sup>st</sup> International ISHMT ASTFE Heat and Mass Transfer Conference, ISRO, Trivandrum, Kerala, India, December 17-20, 2015.*
- **M. Sneha Maria, B. S. Kumar, T. S. Chandra, A. K. Sen**, “Microfluidic device for blood plasma separation” *International Conference on MEMS and Sensors (ICMEMSS 2014), IIT Madras, December 18-20, 2014.*

## AWARDS

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- **Keshav-Rangnath Excellence in Research Award 2017** for Best PhD thesis at IIT Madras.
- **Special Recognition award** for research presentation at RSD-ID 2016, IIT Madras.

## **GRANTS AND SCHOLARSHIPS**

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- **GATE** (Govt. of India) for Masters degree. Period: 24 months. GATE Score : 411, All India Rank: 991
- **Half-time Research Assistantship**, MHRD, India for Doctoral Research at IIT Madras. Period : 4 years
- **Research Scholar Innovative Projects**, IIT Madras. Period : 1 year.
- **Pre-doctoral fellowship** (IIT Madras) for finishing PhD within 4 years from the date of registration. Period : 6 months

## **WORK EXPERIENCE**

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- **Teaching Assistant**, IIT Madras. Period : 2013-2017
- **Post Doctoral Fellow**, IIT Madras. Period: Oct 12, 2017 – till date

## **PERSONAL INFORMATION**

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**Name** : Dr. M. Sneha Maria

**Father's name** : S. Mariawilliam

**Date of Birth** : 24/04/1990      **Gender** : Female      **Nationality** : Indian

**Marital status** : Married      **Spouse's name** : S. Kingsly Arun Kumar

**Languages known** : Tamil, English