

## PERSONAL INFORMATION

Neethish M M



## WORK EXPERIENCE

July 2023 – Present **Postdoctoral Researcher**Sapienza University  
Rome, Italy

Conduct research, disseminate the findings, mentor students

May 2015 – August 2016 **Subject Matter Expert, Physics**SPI Technologies India Pvt. Ltd.  
Ramapuram, Chennai, India  
Answering Physics related questions raised by students upto master's level

## EDUCATION AND TRAINING

2016–2022 **PhD - Thesis Title: “Supercontinuum generation in Barium Zinc Borate glasses”**

Pondicherry University, Pondicherry, India

2013–2015 **Master of Science in Physics**

Pondicherry University, Pondicherry, India

2010–2013 **Bachelor of Science in Physics**

Calicut University, Kerala

## RESEARCH EXPERIENCE

July 2023 – Present **Nonlinear Raman Spectroscopy**Postdoctoral Researcher  
Sapienza University  
Rome, Italy

Conduct research in Impulsive Vibrational Spectroscopy, focusing on ultrafast dynamics in complex materials.

August 2016 - November 2022 **Supercontinuum generation in Barium Zinc Borate glasses**PhD Thesis  
Pondicherry University  
Pondicherry, India

Studied Barium Zinc Borate glasses, correlating structure with nonlinear coefficients, optimizing supercontinuum generation, and proposing rare-earth doping to overcome bandgap dependency.

January 2019 - October 2021 **Bismuth silicate glasses -Linear and Nonlinear optical studies**DST-SERB Project Assistant  
(Junior Research Fellow)  
Pondicherry University  
Pondicherry, India  
Synthesized Bismuth silicate glasses, and controlled luminescence via bismuth valence tuningDecember 2014 - April 2015 **Automation of Z-scan experimental setup using LABVIEW**MSc Thesis  
Pondicherry University  
Pondicherry, India

Developed a LABVIEW program to integrate a motion controller and power meter, successfully demonstrating open and closed aperture Z-scan curves for a microscopic glass slide.

#### INVITED TALKS, CONFERENCES AND WORKSHOPS

##### July 2024 International Conference on Raman Spectroscopy

Sapienza University  
Rome, Italy  
Delivered an oral presentation titled "Nonlinear Raman spectroscopy of ChCl-EG Deep Eutectic Solvents".

##### March 2023 National Conference on Recent Advances in Physics

Sullamussalam Science College  
Malappuram, India  
Delivered an invited talk titled "Shining light on the glass edge" at the National conference on "Recent Advances in Physics (RAP-23)".

##### December 2022 National Laser Symposium

IIT Kharagpur  
Kharagpur, India  
Presented a poster titled "Supercontinuum generation from Barium Zinc Borate glasses" at the National Laser Symposium.

##### August 2022 International Conference on Advances in Glass & Glass-Ceramics

CGCRI  
Kolkata, India  
Delivered an oral presentation titled "Supercontinuum generation in Barium Zinc Borate glasses: Revisiting the bandgap dependency".

##### December 2019 DAE-Solid State Physics Symposium

IIT Jodhpur  
Jodhpur, India  
Presented a poster titled "New candidate for red phosphor applications" at the Solid State Physics Symposium.

##### October 2019 International Conference on Optics & Electro optics

IRDE  
Dehradun, India  
Presented a poster titled "Tailoring glasses for supercontinuum generation" at the International Conference on Optics and Electro-optics.

##### July 2019 National conference on Light Matter Interaction at Nanoscale

IGCAR  
Kalpakkam, India  
Presented a poster titled "Understanding the Bismuth luminescence through silver doped Bismuth silicate glasses" at the National Conference on Light Matter Interaction at Nanoscale.

##### December 2018 Winter School on Synchrotron Techniques in Material Science

SN Bose Institute  
Kolkata, India  
Attended Winter School on Synchrotron Techniques in Material Science (WSSTM) which was meant to familiarise the capabilities of synchrotron sources in material science.

##### Nov 2016 Short GIAN course on computational nonlinear optics

NIT Goa  
Goa, India  
Attended 10 days short course on computational nonlinear optics, which covered numerical simulations of propagation of light and its interaction with matter.

#### PUBLICATIONS

[1] E. Emauele, G. Batignani, G. Cerullo, G. Leita, **M M Neethish**, E. Mai, M. Martinati, C. Mele, T. Scopigno, and B. Bozzini. "Solving ZIB challenges: the dynamic role of water in deep eutectic solvents electrolyte." In: *Journal of Material Chemistry A* 13 (2025), pp. 9778–9790.

[2] Giovanni Batignani, Emanuele Mai, Miles Martinati, **M M Neethish**, Shaul Mukamel, and Tullio Scopigno. "Temperature Dependence of Coherent versus Spontaneous Raman Scattering." In: *Physical Review Letters* 133 (2024), p. 206902.

[3] **M M Neethish**, V.V.R.K. Kumar, S.A. Nalam, S S Harsha, and P.P Kiran. "Supercontinuum generation from zinc borate glasses: bandgap versus rare-earth doping." In: *Optics Letters* 46 (2021), pp. 1201–1204.

[4] **M M Neethish**, V.V.R.K. Kumar, S.A. Nalam, S S Harsha, and P.P Kiran. "Effect of chirp on supercontinuum generation from Barium Zinc Borate glasses." In: *Optics and Laser Technology* 149 (2022), p. 107890.

[5] **M M Neethish**, J Nath, G.V. Prakash, and V.V.R.K. Kumar. "Effect of Zinc Fluoride addition on structure of barium Borate glasses for nonlinear optical applications." In: *Optical Materials* 121 (2021), p. 111626.

[6] **M M Neethish**, J Nath, P.P Kiran, G.V. Prakash, Alok. Sharan, and V.V.R.K. Kumar. "Broad white light supercontinuum generation in Barium Zinc Borate glasses." In: *Journal of Luminescence* 251 (2022), p. 119190.

[7] Laya Krishnan, **M M Neethish**, and V.V.R.K. Kumar. "Structural and optical studies of rare earth-free bismuth silicate glasses for white light generation." In: *Journal of Luminescence* 201 (2018), pp. 442–450.

[8] V.S Vendamani, R Beeram, **M M Neethish**, S.V.S. Nageswara Rao, and S. Venugopal Rao. "Wafer-scale silver nanodendrites with homogeneous distribution of gold nanoparticles for biomolecules detection." In: *Iscience* 25 (2022), p. 104849.

[9] Laya Krishnan, **M M Neethish**, V.V.R.K. Kumar, V.S Vendamani, K. Devarani Devi, D. Bharathi Mohan, P. Nandhagopal, and Namita Behera. "Photoluminescence and structural studies of Ag: Alkali Bismuth Silicate glasses." In: *Optik* 273 (2022), p. 170474.

[10] Alan B. Samuel, **M M Neethish**, V.V.R.K. Kumar, S.A. Nalam, S S Harsha, and P.P Kiran. "Supercontinuum generation in antimony zinc borate glasses—A material perspective." In: *Journal of Applied Physics* 133 (2023), p. 093104.

[11] P. Vijayakumari, Youssef Trabelsi, A. Trabelsi Youssef and Sharafali, and T. Liya. "Modulation instability induced supercontinuum generation in Barium Zinc Borate glass doped with Praseodymium based photonic crystal fiber." In: *Optical and Quantum Electronics* 55 (2023), p. 1057.

[12] N Arun, **M M Neethish**, V.V.R.K. Kumar, S.V.S. Nageswara Rao, and AP. Pathak. "Resistive switching properties of hafnium oxide thin-films sputtered at different oxygen partial pressures." In: *Journal of Material Science: Materials in Electronics* 25 (2022), p. 104849.

[13] **M M Neethish**, M.P. Kishore, and V.V.R.K. Kumar. "New candidate for red phosphor applications." In: *AIP Conference Proceedings* 2265 (2020), p. 030221.

#### PERSONAL SKILLS

Mother tongue Malayalam

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user  
[Common European Framework of Reference for Languages](https://ec.europa.eu/eurydice/documents/ceefr_en.pdf)

Experimental Skills – Melt quench glass preparation, Designing optical experiments with Femtosecond ,Nanosecond, Diode & HeNe lasers

Softwares/Packages – MATLAB, LABVIEW, Origin, Microsoft Office Word, Powerpoint, Excel

Material characterisations – XRD, Raman, FTIR, UV-Vis Absorption, Photoluminescence spectroscopy

**Soft Skills** – Leadership, Project management, Data analysis, Multi-tasking, Scientific writing, Collaboration

