

NITIN MOHAN

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RESEARCH INTERESTS

System design and development of super resolution microscopes-STORM/PALM, and Single molecule imaging techniques for visualising and understanding cellular biophysics in the context of Motor proteins, intracellular transport, and Neurodegeneration, Cellular adaptations to nutrient sensing.

RESEARCH EXPERIENCE

- Assistant Professor, *IIT Kanpur, 2018 December onwards*
- Post-Doctoral Research Fellow, *University of Pennsylvania, 2017-2018*
- Post-Doctoral Research Fellow, *ICFO-Barcelona, Spain, 2014-2017*
- Post-Doctoral Research Fellow, *ENS-Cachan, France, 2013-2014*
- Post-Doctoral Research Fellow, *Academia Sinica, Taiwan, 2012-2013*

EDUCATION

- Ph.D. Nano Science and Technology
Taiwan International Graduate Program (TIGP), Academia Sinica, Taiwan, (2006-2011)
- Master of Science. Physics
Mahatma Gandhi University, Kerala, (2003-2005)
- Bachelor of Science. Physics with Applied Electronics
Mahatma Gandhi University, Kerala, (2000-2003)
- Higher Secondary
I.H.R.D Technical Higher Secondary School, Muttom, Kerala, (1998-2000)
- Secondary
Nirmala High School, Muvattupuzha, Kerala, (1998)

AWARDS & HONORS

- Ramalingasami Re-entry Fellowship, *DBT, India, 2019*
- Academia Sinica Post-Doctoral Fellowship, *Taiwan, 2012*
- Young scientist Award, *International Association of Advanced Materials, 2011*

ONGOING SPONSORED PROJECTS

- Ramalingasami Re-entry Fellowship, *DBT, India, (2019-2024)*

Title: Do Maps direct Motors to choose specific Highways? Regulations of cellular transport machinery probed by super-resolution microscopy

- SERB CORE Research grant, *DST, India, (2020-2023)*

Title: *In union there is strength to sense: Mechanisms of mTORC1 clustering on lysosomes for nutrient sensing and their implications in Diabetes probed with super-resolution microscopy*

PUBLICATIONS

Peer Reviewed Journal Papers <https://scholar.google.es/citations?user=zJ7Hcw0AAAAJ&hl=en>

- **N Mohan**, E M Sorokina, I V Vilanova, A S Alvarez, and M Lakadamyali, *Detyrosinated microtubules spatially constrain lysosomes facilitating lysosome-autophagosome fusion*. **Journal of Cell Biology** (2018) [doi:10.1083/jcb.201817124](https://doi.org/10.1083/jcb.201817124)
- I V Vilanova, F Wehnekamp*, **N Mohan***, A S Alvarez, J S Borbely, J Otterstrom, D C Lamb and M Lakadamyali, *3D motion of vesicles along microtubules helps them to circumvent obstacles in cells* **Journal of Cell Science** (2017). [doi: 10.1242/jcs.2011178](https://doi.org/10.1242/jcs.2011178). *shared second author contribution
- S Haziza, **N Mohan**, S Massou, M P Adam, A L Bestel, X L Le, A Thomas, F J Hsieh, G Dantelle, C C Wu, H C Chang, F Treussart and M Simonneau, *Fluorescent nanodiamond tracking reveals intraneuronal transport abnormalities induced by brain disease-related genetic risk factors*, **Nature Nanotechnology** (2016). [doi:10.1038/nnano.2016.260](https://doi.org/10.1038/nnano.2016.260)
- P J Wills, A Mohan, **N Mohan**, R Varun, P Sachidanandan, T M Jacob, M Lilly, R V Thampan, K K Varma, *Population Explosions of Tiger Moth Lead to Lepidopterism Mimicking Infectious Fever Outbreaks*, **PLOS ONE**, 11(4), e0152787 (2016). doi.org/10.1371/journal.pone.0152787
- E Chandraprakash*, **N Mohan***, C W Chang and H C Chang, *Nanodiamond mediated Intercellular Transport of Proteins through Membrane Tunneling Nanotubes*, **Small**, 11, 6097. (2015). [doi:10.1002/sml.201502089](https://doi.org/10.1002/sml.201502089). *shared first author contribution.
- Y Y Hui, Y R Chang, **N Mohan**, T S Lim, Y Y Chen and H C Chang, *Polarization Modulation Spectroscopy of Single Fluorescent Nanodiamonds with Multiple Nitrogen Vacancy Centers*, **The Journal of Physical Chemistry A**, 115, 1878 (2011). [doi: 10.1021/jp110761u](https://doi.org/10.1021/jp110761u).
- **N Mohan**, C S Chen, H H Hsieh, Y C Wu and H C Chang, *In-Vivo Imaging and Toxicity Assessments of Fluorescent Nanodiamonds in Caenorhabditis elegans*, **Nano letters**, 10(9), 3692 (2010). [doi: 10.1021/nl1021909](https://doi.org/10.1021/nl1021909)
Recommended by **Faculty of 1000 Prime** <http://f1000.com/prime/718356270?bd=1&ui=27951>.
Discovery News Highlight <http://news.discovery.com/tech/biotechnology/nano-diamonds-diagnose-swallow.htm>.
- **N Mohan***, Y K Tzeng, L L Yang, Y Y Chen, Y Y Hui, C Y Fang and H C Chang, *Sub-20-nm Fluorescent Nanodiamonds as Photostable Biolabels and FRET Donors*, **Advanced Materials**, 22, 843 (2010). doi: 10.1002/adma.200901596 *shared first author contribution.

Book Chapter

- **N Mohan** and H C Chang, *Fluorescent Nanodiamonds and Their Prospects in Bioimaging*, **Optical Engineering of Diamond** (eds R. P. Mildren and J. R. Rabeau), Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany (2013). [doi: 10.1002/9783527648603.ch13](https://doi.org/10.1002/9783527648603.ch13)