Vinayaka H. **Damle**

Researcher · Spectroscopy | Optics | Nanometrology

Plantsoen 33 B, 6701 AS, Wageningen, Netherlands

(+31) 064-101-5760 | vhdamle@gmail.com | www.vhdamle.com | vinayaka-damle | Vinayaka Damle

Summary

Passionate Optical Researcher with strong background in Ultra-Fast Laser Systems (f-sec. and n-sec.) Non-Linear Optics, Spectroscopy and Nano-metrology. Highly motivated scientist with 6+ years of professional experience in Academic and Industrial Research, partnering with pioneers in semiconductor technology through SRC Research Program. Driven and well-organized engineer with vast experience in designing and building complex state-of-the art experimental optical systems. A kind, honest and hardworking team player with great motivation to learn new tools and technologies.

Skills

Analytical Instruments	TEM, SEM, XRD, PL, FTIR, Raman, LFRS, CARS, SRS, SHG, EIS, IPCE, 4 Probe JV, AFM, Profilometry
Sample Preperation	PVD, CVD, FIB- Milling, Spin Coating, LB Trough
Laser System/EOM	Femto Second Laser/ NOPA (Pharos/Orpheus) CW Laser systems - Cobalt, Toptica, EOM - Qubig
Software Tools	Labview, Python, Matlab, LaTeX
Languages	English, Kannada, Hindi, Malayalam, Tulu, Sanskrith
Soft Skills	Team management, Project Management, Communication, Problem Solving, Organisation & Prioritisation

Education

Bar-Ilan University — *Ramat Gan, Israel*

Ph.D. in Nanophotonics and Molecular Spectroscopy — *Jul. 2017 - Feb. 2022*

NITK (National Institute of Technology - Karnataka) — *Surathkal, India*

M.Sc. in Physics — *Jun. 2012 - May. 2014*

St. Aloysius College, Mangalore University — *Mangalore, India*

B.Sc. in Physics, Chemistry and Mathematics — *Jun. 2008 - May. 2012*

Work Experience

UNLOCK, Wageningen University and Research — *Wageningen, Netherland*

Scientist — *Dec. 2022 - Present*

- Product owner for the development of optical tweezers coupled Raman Assisted Cell Sorting infrastructure, for high throughput microbial cell sorting.
- Design and development of low cost micro-fluid chips for various screening applications
- Design and development of spectroscopic tools for microbiology research.
- Postdoctoral researcher, conducting advanced research on light matter interactions in soft matter.

Faulty of Information Technology and Electrical Engineering - University of Oulu — *Oulu, Finland*

Visiting Researcher under Erasmus + Global Mobility Program — *Mar. 2022 - Sep. 2022*

- Design and development of spectroscopic tools for characterisation of Dye Sensitised Solar Cells (DSSCs).
- Fundamental research on screen printed DSSCs.

Bar-Ilan Institute of Nanotechnology and Advanced Materials - Bar-Ilan University — *Ramat Gan, Israel*

Doctoral Researcher — *Jul. 2017 - Feb. 2022*

- Built various state of the art non-linear optical systems such as, Pump- probe, CARS, SRS, SHG, TCSPC, etc.
- Acquired hands on experience in ultra-fast laser systems (f.sec. and n.sec.) and built a 2 stage OPA.
- Carried out doctoral research on Engineering Spontaneous and Low-Frequency Raman Spectroscopy to facilitate selective spectral enhancement and increase/tune spectral resolution.

Semiconductor Research Corporation — *Ramat Gan, Israel*

Research Engineer (on site at BINA-BIU) — *Dec. 2018 - Mar. 2021*

- Spearheaded an industrial research project involving stake holders from SRC.
- Worked extensively on developing and integrating ultra-fast laser systems and spectroscopic tools with AFM for detection of light-matter interaction at micro and nano scale.
- Designed, developed and integrated a hybrid PW/CW-TESRS system.

Vagdevi Vilas Institutions *Bangalore, India*

Research Facilitator *Jun. 2016 - Jun. 2017*

- Managed a team of 10 people from interdisciplinary research domains.
- Responsibilities included experimental design, training, and day-to-day operation of Research and Development facility.
- Worked extensively on industrial research projects and consultations involving stakeholders from industrial consortium.
- Trained more than 300 students across various age groups on building scientific temper in STEM subjects.

Jeol India Pvt. Ltd. *NITK- Surathkal, India*

Facility Technologist *Jan. 2015 - Jun. 2016*

- Acquired around 1500 hours of hands on experience in electron microscopy SEM, TEM.
- Responsible for daily operation of the facility and managing various collaborations involving stakeholders from academia and industry.

Achievements

2022	**Erasmus + Global Mobility Grant,** University of Oulu	*Oulu, Finland*
2019	**Erasmus + KA 107 Grant,** Hellenic Mediterranean University, & FORTH Institute	*Crete Island, Greece*
2018	**COST Action MP1403 Grant,** International Iberian Nanotechnology Laboratory	*Braga, Portugal*
2017-2022	**Presidential Doctoral Scholarship (Issued for Outstanding PhD Candidates) ,** Bar-Ilan University	*Ramat Gan, Israel*
2012	**All India Rank 98,** Indian Institute of Technology, Joint Admission Test for Masters	*India*
2011	**All India Rank 369,** Indian Institute of Technology, Joint Admission Test for Masters	*India*

Selected Publications

1. Kumar,S.,**Damle,V.H.,** Bendikov, T., Itzhak, A., Elbaum, M., Rechav, K., Houben, L., Tischler, Y., Cahen, D., Topotactic, Vapor-Phase, In Situ Monitored Formation of Ultrathin, Phase-Pure 2D-on-3D Halide Perovskite Surfaces, ACS Appl.Mater.Interfaces, 2023 (Preprint).
2. Aviv. H., **Damle. V.H.**, Tischler, Y. R. Low-Frequency Raman Spectroscopy – A Versatile Technique for Material Characterization and Detection, The Israel Chemist and Chemical Engineer, 2023, 9, 6-14
3. Kumar. S., Rukban. A., Sinisi J., **Damle. V.H.**, Cahen. S., (2022) Localized Heating Tailors Nucleation for Reproducible Growth of Thin Halide Perovskite Single Crystals, Cryst. Growth Des. 2022, 22, 12, 7160–7167.
4. Prabhakar R.R., Moehl. T., Friedrich. D., Kunst. M., Shukla. S., Adeleye. D., **Damle,V.H.**, Siol. S., Cui. W., Gouda, L., Suh, J., Tischler, Y. R., Krol, R., Tilley, D., (2022) Sulfur-Treatment Passivates Bulk Defects in Sb2Se3 Photocathodes for Water Splitting. Adv. Funct. Mater.2022, 2112184.
5. **Damle, V.H**., Aviv,H., Tischler, Y.R.,(2022) Identification of Enantiomers Using Low Frequency Raman Spectroscopy. Anal. Chem. 2022, 94, 7, 3188–3193.
6. Prabhakar R.R., Moehl. T., Friedrich. D., Kunst. M., Shukla. S., Adeleye. D., **Damle,V.H.**, Siol. S., Cui. W., Gouda, L., Suh, J., Tischler, Y. R., Krol, R., Tilley, D., (2021) Unravelling Defect Passivation Mechanisms in Sulfur-treated Sb2Se3. ChemRxiv. Cambridge: Cambridge Open Engage; 2021(Archived)
7. Uliel,T.B., Aviv,H., Zhou,J., Li,M., Avadyayev,S., Kapon,O., **Damle, V. H**., Yi, C., Tischler,Y.R.(2020) Raman scattering obtained from laser excitation of MAPbI3 single crystal, Applied Materials Today, 19, 100571, 2352-9407
8. Jacobi, L., **Damle, V. H**., Rajeswaran, B., & Tischler, Y. R. (2020). Low-frequency raman spectroscopy as a diagnostic tool for COVID-19 and other coronaviruses. R. Soc. Open Sci, 7, 1-28.
9. **Damle, V H**., Sinwani,M., Aviv,H., & Tischler, Y R., (2020). Microcavity Enhanced Raman Spectroscopy of Fullerene C60 Bucky Balls, Sensors, 20(5), 1470.
10. **Damle, V H**., Gouda, L., Tirosh, S., & Tischler, Y R., (2018). Structural Characterization and Room Temperature Low-Frequency Raman Scattering from MAPbI3 Halide Perovskite Films Rigidized by Cesium Incorporation, ACS Applied Energy Materials, 1, 12, 6707–6713.
11. Feinstein, A., Yasinov, R., Karasikov, N., Kapon, O., **Damle, V. H**., Uliel, T. B., & Tischler, Y. (2019) Spectroscopic gas identification using piezo tuned micro-cavity enhanced Raman scattering. In Next-Generation Spectroscopic Technologies XII 10983,.109830M. International Society for Optics and Photonics.
12. Elias, L., **Damle, V H**., & Hegde, A C., (2016) Electrodeposited Ni-P Alloy Thin Films for Alkaline Water Splitting Reaction, IOP Conference Series: Materials Science and Engineering,149, 012179,