Curriculum Vitae

Prof. Gaddam Vijaya Prakash,
FNASc, FRSC (UK), FInstP (UK)
HAG Professor and Institute Chair Professor,

Formulary All-India Organizing Chairperson JAM-2025;
Chairperson, GATE-2025;
Vice-chairperson GATE-JAM 2023,24 IIT Delhi

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About Professor G.Vijaya Prakash

After joining IIT Delhi in 2005, Prof. G. Vijaya Prakash initiated the new research field, "Nanophotonics": the study of nanostructures in photonic environment. His research interests span quantum functional materials, nonlinear optics and glass photonics. His extensive and more than two decades long contributions is in the field of Inorganic-Organic hybrid perovskites, witnessed the commercial realization of next-generation solar cells and LEDs. He is one of the few initiators of research on photonic crystals in India, specifically focusing on experimental realization of electron-photon strong coupling and nonlinear device methodologies. He is widely known for nonlinear rare-earth spectroscopy/imaging of specialty glasses and phosphors for optoelectronic devices. Some of his notable research works are in demonstrating optical gain from silicon nanocrystals, shortest confocal laser cavity for atom manipulation and strong coupling, low-cost SERS substrate commercialization. He was instrumental in establishing DST-FIST Ultrafast Optics Lab at IITD. So far, he has guided/guiding more than 25 Ph.Ds and guided more than 40 post graduate students. He was keynote speaker, invited speaker, session chair for many notable international conferences. He holds research grants of more than Rs.65 Cr as PI/Co-PI from different funding agencies, since 2005. His scholarly work is evidenced by more than 240+ scientific journal publications with more than 6825 citations, h-index of 49 and i10-index of 141. His research has been recognized internationally as top 2% world scientists and top 10000 Asia scientists, since 2016.

He has been a recipient of several research awards from *UKIERI (UK), Royal Society (UK), INFM (Italy)* and IIT Delhi (*'High Impact Research Award'*), *Best Teacher award* and *KL Chopra Faculty Basic Research Award*.

He also held several administrative responsibilities such as Professor in-charge of academic facilities, and All-India Organising Chairperson for JAM-2025, GATE -2025 Chairperson and GATE-JAM Vice- Chairperson (2022-23, 2023-24) and professor-in-charge for Institute Timetable for more than 06 years.

Currently he is Fellow of National Academy of Sciences (FNASc) India, Fellow of Royal Society of Chemistry (FRSC) UK, Fellow of Institute of Physics (FInstP) UK and Highest Academic Grade (HAG) and Institute Chair Professor, group leader of Nanophotonics research lab. He is the recipient of Basic Research Award (Prof. KL Chopra Faculty research Award)(2024-25) and Teaching Excellence Award (2020-21). He has been a long-term visiting faculty, since 2007, at University Southampton and University of Cambridge, UK.

Research Specialization: Nanophotonics, Quantum functional materials, Glass technology, photonics crystals/waveguides, Nonlinear optics, Rare-earth doped phosphors and glasses.

Personal Background:

- **Date of Birth :** 02-04-1970
- **Place of Birth:** Jangareddygudem, AP, India
- **Nationality:** Indian
- **Marital Status:** Married

Academic/Administrative Positions:

Year	Academic positions	Institute
2025	Fellow od Institute of Physics (FInstP) UK	IOP, UK
2024-25	Organising Chairperson, JAM-2025	All-India Level
2024-25	Chairperson GATE-2025	IIT Delhi Zone
2024	Fellow of National Academy of Sciences (FNASc)	India
2024	Fellow of Royal Society of Chemistry (FRSC)	UK
2022-2024	Vice Chairperson GATE and JAM	IIT Delhi Zone
2023- to date	Highest Academic Grade (HAG) Professor	IIT Delhi, New Delhi
2019-	Institute Chair professor	IIT Delhi, New Delhi
2016/17 to date	Professor	IIT Delhi, New Delhi
2017-2020	Professor-In charge Academic facilities , Professor In charge for Institute Time-table	IIT Delhi, New Delhi
2011-16/17	Associate Professor	IIT Delhi, New Delhi
2004/05- 10	Assistant Professor	IIT Delhi, New Delhi
2019-22	Visiting professor	University of Southampton, UK
2007-15	Visiting professor /researcher	University of Cambridge, UK
2006	Royal Society (UK) visitor	University of Southampton, UK
2002-2004/05	Research Fellow (EPSRC and Royal Society fellow)	University of Cambridge and University of Southampton, UK
1999/00-2002	Post doctoral fellow , (INFM Fellowship)	University of Trento, UK
1998-1999	Post doctoral fellow,(DST/CSIR Fellowship)	University of Hyderabad, India

Education Background:

- **Ph.D., in Physics,** Thesis entitled "Spectroscopic investigations of laser dyes…. mixtures". Andhra University, AP, India, Dec.1993-Dec.'96 ; awarded in June'97
- ***M.Sc., Physics, Spl. in electronics,*** Kakateya University, Telangana, India, 1990-92, 71 % Distinction
- ***B.Sc., Maths, Physics & Chemistry***, Andhra University, AP, India, 1987-90, 63 % First class

Sponsored Research Projects: (2005- Till to date ; **~ Rs. 5.5** Cr. as PI and **Rs.60Cr.** as Co-PI and others)
Completed/ongoing projects as PI (012):~ Rs.489 Lacs
and as CoPI and other (03) : ~5800 Lacs.

Research Guidance :

- **Doctoral students : 19 (completed)+ (05 external students) +3 (ongoing)**
- **Masters/UG Degree students' guidance** (**~40**)

Academic/research Highlights :

- Fellow of National Academy of Sciences (FNSC)
- Fellow of Royal Society of Chemistry (FRSC)
- Recipient of several research awards from UKIERI (UK), Royal Society (UK), INFM (Italy) 'High Impact Research Award' (Rs.1Cr reward, IIT Delhi), Best Teacher award (IIT Delhi) and KL Chopra Faculty Basic Research Award (IIT Delhi).
- Established "Nanophotonics" research activity
- Our nanophotonics research attracted "High-Impact Research" award (peer reviewed) from IITD- as PI along with other three faculty colleagues

- Top 5 most successful UK-India collaboration- Identified by British council (UKIERI) – selected for Case study by various UK organizations
- Active part in establishing a new lab *" ultrafast Optics" (supported by IITD and DST-FIST)*
- Active part in *DRDO-JATC*
- Some of the research articles attracted attention as *"Editor's choice", "Most downloaded paper", " Special edition"*
- Some of our research findings were most often used/ quoted in the recent perovskite PV development
- Best Institute level thesis awards to my PhD students
- Several best oral presentation/poster awards for students (International and National)

Contributions of national/international importance

-
- *"Teaching Excellence Award "* by IIT Delhi 2021
- Impact Research" award (peer reviewed) from IIT Delhi (with Rs. 1Cr)
- Award of *"Institute Chair Professorship"* by IIT Delhi since 2019
- Established "Nanophotonics" research activity
- UK-India Education and research Initiative (UKIERI) awards, 3 times, 2008-2016
- Top 5 most successful UK-India collaboration- Identified by British council (UKIERI) – selected for Case study by various UK organizations
- Active part in establishing a new lab *" ultrafast Optics" (supported by IITD and DST-FIST)*
- Some of the research articles attracted attention as *"Editor's choice", "Most downloaded paper", " Special edition"*
- Some of our research findings were most often used/ quoted in the recent perovskite PV development
- Best thesis award to one of my PhD students (2015)
- Best oral presentation/poster awards for students (International and National)
- Examiner to many doctoral degrees across India
- Member of INSPIRE (DST) research fellowship awards
- Royal Society UK, Visiting Scientist Award 2006
- *Visiting Professor* to University of Southampton, UK since 2017
- *Visiting Senior Researcher* to University of Cambridge, UK since 2006

Research Publications (peer reviewed): > 260+ Conferences/workshops/talks >40

Book Chapters/Reviews: 8

A complete list of publications may be obtained from the following links

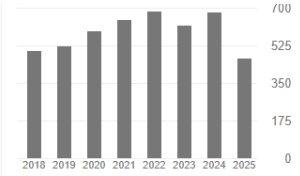
http://nanophotonics.iitd.ac.in/

IITD profile http://iitd.irins.org/profile/70731; https://vidwan.inflibnet.ac.in/profile/70731

ORCID : https://orcid.org/0000-0003-0450-3767

Google Scholar : https://scholar.google.com/citations?user=9mGlvlEAAAAJ&hl=en

Citations	7389
h-index	49
I10-index	149
@ Google Scholar	



@google scholar

Book Chapters/Reviews: 8

1. G. Vijaya Prakash, S. Surendra Babu, A. A. Reddy, Optical Amplifiers from Rare-Earth Co-Doped Glass Waveguides, in “Advances in Optical amplifiers”, Ed. P. Urquhart, Intech Publishers, Austria (2011) (ISBN: 978-953-307-1345-8)

2. G. Vijaya Prakash, "Thin-film organic photonics: molecular layer deposition and applications by T. Yoshimura" (book review), Journal of Optics, 41 (2012) 184.

3. G. Vijaya Prakash, "Fundamental Concepts of Semiconductors" Web course for National Programme on Technical Enhanced learning (NPTEL). http://nptel.iitm.ac.ink

4. G. Vijaya Prakash etal, “Glass Photonics “ chapters: “Spectroscopy of Glasses” and “Techniques for Preparation of Glasses” World Scientifics’, Singapore. (ongoing)

5. " Asian Journal of Physics: A Special Issue Dedicated to Prof D Narayana Rao (University of Hyderabad), Vol 30 , Isssue 6, 2021. Guest Edited By : Prof. G Vijaya Prakash (IIT Delhi), Prof. B Maruthi Manoj (IIT Kharagpur) & Prof. Shivakiran Bhaktha B N (IIT Kharagpur).

6. "Recent advances in optics (RAO): Contribution of D Narayana Rao in optics and photonics research in India" Review Article published in Asian Journal of Physics, Vol. 30, No 6 (2021) 837-848

7. "Polyoxometalates in Catalysis, Biology, Energy and Materials Science" eBook, SECTION V, 196 (2019) { Main article is Front. Chem. 6:631, 2018)

8. Our article “Linear and nonlinear optical probing of various excitons in 2D inorganic-organic hybrid structures” is part of Nature Scientific Reports collection on "Intense ultra-short pulses from femtosecond to attosecond" 12 April 2022,

Research publications in peer-reviewed (SCI) Journals

Total research Publications (peer reviewed): > 260+ Conferences/workshops/talks >40

Citations : ~7389; h-index : 49 i10index: 149

[1]. “Synthesis and characterization of unsymmetrical β-functionalized push–pull porphyrins: photophysical, electrochemical, and nonlinear optical (NLO) studies” Rohit, Albin Kuriakose, G. Vijaya Prakash and Muniappan Sankar, New. Journal of Chemistry (2026) link

[2]. “Morphology-Tuned Photoluminescence in Eu3+ Doped β-NaYF4 Microcrystals Prepared by a Facile Soft-Templated Route” Ipshita Majumdar, Ib Singh Deo, Vaishali Sethi, G Vijaya Prakash, Ashok K Ganguli, The Journal of Physical Chemistry C (2025) LINK

[3]. “Synthesis, Characterization, and Redox Properties of Electron-Deficient Porphyrins with Dual Applications” Varusha Bhardwaj, Albin Kuriakose, Gaddam Vijaya Prakash, Muniappan Sankar, Inorganic Chemistry, 64 (2025) 25216 link

[4]. " Photonic Band Effects on the Optical Nonlinearities of a:SiNx-Based 1D Photonic Architectures " Albin Kuriakose, Jitendra Nath Acharyya,Pankaj Srivastava, G Vijaya Prakash, ACS Applied Materials & Interfaces, XX, (2025)XXXX link

[5]. " Electron deficient β-trisubstituted porphyrins: synthesis, structural, spectral, and electrochemical studies and their intensity-dependent third-order nonlinear optical properties " Reena Jangra, Amritha J Nair, Albin Kuriakose, Jitendra Nath Acharyya, G Vijaya Prakash, Muniappan Sankar, Dalton Transactions, 54, (2025)10234 link

[6]. " Optical exciton features in structurally diverse phenyl group-based inorganic–organic hybrid semiconductors " Mohammad Adnan, Kshetra Mohan Dehury, Albin Kuriakose, G Vijaya Prakash Journal of Applied Physics, 137, (2025)203105 link

[7]. " Optical nonlinearities and ultrafast absorption dynamics in structurally tunable a: SiNx thin films " Albin Kuriakose, Jitendra Nath Acharyya, Mohammad Adnan, Pankaj Srivastava, Venugopal Rao Soma, G Vijaya Prakash, Optics & Laser Technology, (2025) link

[8]. " Meso-β Monofused Porphyrins: Synthesis, Structural, Spectral, Electrochemical and DFT Studies and Their Efficient Third-Order Nonlinear Optical Properties " Amir Sohel Bulbul, Reena Jangra, Albin Kuriakose, Jitendra Nath Acharyya, G Vijaya Prakash, Muniappan Sankar Chemistry–A European Journal, (2024) link

[9]. " Structurally influenced optical nonlinearities and ultrafast dynamics in β-acroleyl- and β-dicyanobutadienyl-appended cobalt corroles " Inderpal Yadav, Jitendra Nath Acharyya, G. Vijaya Prakash and Muniappan Sankar, *Physical Chemistry Chemical Physics,* 26 (2024), 15125-15129 link

[10]. " Photonic Band Gap and Fractal Resonances in Aperiodic Cantor-like Self-Similar a:SiNx Photonic Structures" Albin Kuriakose, Jitendra Nath Acharyya, P. Srivastava, and G. Vijaya Prakash, *ACS applied optical materials,* 4(2024),670 link
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[12]. " Synthesis, Structural, Electrochemical, and DFT Studies of Highly Substituted Nonplanar Ni (II) Porphyrins and Their Intensity-Dependent Third-Order Nonlinear Optical Properties " Amir Sohel Bulbul, Albin Kuriakose, Komal, Reena, Jitendra Nath Acharyya, G Vijaya Prakash, Muniappan Sankar *Inorganic Chemistry,* (2024) link
[13]. " Hysteretic Piezochromism in a Lead Iodide-Based Two-Dimensional Inorganic–Organic Hybrid Perovskite " Paul Steeger, Mohammad Adnan, Thorsten Deilmann, Xiang Li, Susanne Müller, Katarzyna Skrzyńska, Michael Hanfland, Efim Kolesnikov, Jutta Kösters, Theresa Block, Robert Schmidt, Ilya Kupenko, Carmen Sanchez-Valle, G. Vijaya Prakash, Steffen Michaelis de Vasconcellos, Rudolf Bratschitsch, *Journal of the American Chemical Society (JACS),* (2024) link
[14]. " Light Emitting Rare Earth Doped K3GdF6:Eu3+ for Spectral Mapping/Imaging Studies" Ib Singh Deo, Mohini Gupta, G. Vijaya Prakash*ACS Applied Optical Materials,* (2024) link
[15]. " Nanosecond laser induced periodic silicon microstructures for broadband antireflective applications " Albin Kuriakose , Pariksha Malik, Jitendra Nath Acharyya , Dinesh Kalyanasundaram, Pankaj Srivastava, G. Vijaya Prakash, *Optics & Laser Technology,* 179 (2024) 111337 link
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[30]. Ultrafast Dynamics and Strong Two-Photon Absorption Properties of Nonplanar β-Functionalized “Push–Pull” Copper Corroles with a Mixed Substituent Pattern, I Yadav, M Shanu, JN Acharyya, GV Prakash, M Sankar, Inorganic Chemistry (2022)

[31]. Strong third-and higher-order nonlinear optical studies on femtosecond laser ablated Germanium metalloid nanoparticle colloid in the wide spectral domain (450–1500 nm), M Priyadarshini, JN Acharyya, IS Deo, GV Prakash, Optics & Laser Technology 156, (2022) 108515

[32]. Tethering inorganic luminous upconverting nanoparticles with macromolecular chppendixains using silica functionalized with RAFT agent, T Joshi, M Gupta, S Mehta, N Singh, GV Prakash, L Nebhani, Materials Today Communications 33, (2022) 104806

[33]. " β-Tetracyanobutadiene Appended Porphyrins: Facile Synthesis, Spectral and Electrochemical Redox Properties and Their Utilization as Excellent Optical Limiters " Renu K. Rohal, Jitendra Nath Acharyya, Mohd Shanu, G. Vijaya Prakash, and Muniappan Sankar, Inorganic Chemistry, 61(3)(2022) 1297

[34]. " Strong third-and higher-order nonlinear optical studies on femtosecond laser ablated Germanium metalloid nanoparticle colloid in the wide spectral domain (450–1500 nm) " M. Priyadarshini, Jitendra Nath Acharyya, Ib Singh Deo, G. Vijaya Prakash, Optics& Laser Technology, 156 (2022) 108515 link

[35]. " Broadband Supercontinuum Generation in a Metal-Dielectric 1D Photonic Crystal " Jitendra Nath Acharyya, Shakti Singh, Mohd Shanu, G. Vijaya Prakash, and Akhilesh Kumar Mishra, Optical Materials, 131 (2022) 11268 link

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[38]. " Synthesis and the spectral, electrochemical, and nonlinear optical properties of β-dicyanovinyl-appended ‘push–pull’ porphyrins " Renu K. Rohal, Mohd Shanu, Jitendra Nath Acharyya, G. Vijaya Prakash, and Muniappan Sankar, Dalton Transaction, 51, (2022) 9049 link

[39]. " Unsymmetrically β-Functionalized π-Extended Porphyrins: Facile Synthesis, Spectral, Electrochemical Redox Properties, and Their Utilization as Efficient Two-photon Absorbers " Amir Sohel Bulbul, Nivedita Chaudhri, Mohd Shanu, Jitendra Nath Acharyya, G. Vijaya Prakash, and Muniappan Sankar, Inorganic Chemistry ,2022 link

[40]. " Photonic cavity mode tuning in porous silicon-based microcavities by He+ and H+ ion irradiation " Chandra Prakash Verma, K. Asokan, D. Kanjilal,and G. Vijaya Prakash, Journal of Applied Physics, 131 (2022) 195703 link

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[43]. " Optical and thermal studies of Nd3+ doped inorganic liquid medium for scalable laser source " A. K.Varshney, Sanjeev Kumar, Ashwani Kumar, Gaurav Singhal, Mohini Gupta, and G. Vijaya Prakash, Optics & Laser Technology, 148 (2022) 107740

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Adnan, Mohammad; Kumar, Manish; Bhattacharya, Saswata; G Vijaya Prakash , Journal of Physical Chemistry C,125(12) (2021)6821
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