


Brief Biodata

Name: Venu Gopal Achanta

Designation:	Professor, Director	
DP No. and Name:	Directorate	
DU No. and Name:		
Email:	dnpl@nplindia.org	
Date of Joining CSIR-NPL:	21/06/2021	
Phone (Office):		
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Research Area/ Interest

Nanophotonics for single-photon emission and detection as well as light-matter interaction beyond the strong coupling regime.

Educational Qualifications

(Please write latest qualification first)

Degree	Subject	University/ Institute	Year
PhD	Electronics	Tokyo University	2006
PhD	Physics	TIFR, Mumbai	2000
MSc	Physics	University of Hyderabad	1994

Academic / Research Experience

Grade / Post	Institute	Duration		Research Field
		From	To	
Fellow	TIFR, Mumbai	2004	2006	Ultrafast spectroscopy of photonic structures
Reader	TIFR, Mumbai	2006	2012	Plasmonics
Associate Professor	TIFR, Mumbai	2012	2018	Nanophotonics
Professor	TIFR, Mumbai	2018	Till date	Nanophotonics

No. of Publications

No. of Publications in SCI Journals	No. of Publications in non-SCI Journals	No. of Publications in Conference Proceedings	Books	Total
138	---	~100	---	

Selected Publications

1. “Reusable Biosensor Based on Differential Phase Detection at the Point of Darkness”, S. Samdani, Abhinav Kala, R. Kaurav, S. Kaladharan, V. G. Achanta, Adv. Photonics Res. 2000147 (2021).
2. “Polarization-Independent Quasibound States in the Continuum”, P Vaity, H Gupta, A Kala, S Dutta Gupta, YS Kivshar, VR Tuz, VG Achanta, Advanced Photonics Research, 2100144 (2021).
3. “Hyperbolic metamaterial with quantum dots for enhanced emission and collection efficiencies”, A. Kala, F. A. Inam, S-A. Biehs, P. Vaity, V. G. Achanta, Adv. Opt. Mater. 2000368 (2020).
4. “Generation of non-classical states of photons from the metal-dielectric interface: a novel architecture for quantum information processing”, K. Mehta, V. G. Achanta, S. Dasgupta, Nanoscale 12, 256 (2020).
5. “All-Dielectric Active Terahertz Photonics Driven by Bound States in the Continuum”, S.Han, L. Cong, Y. K. Srivastava, B. Qiang, M. V. Rybin, A. Kumar, R. Jain, W. X. Lim, V.G.I Achanta, S. S. Prabhu, Q. J. Wang, Y.S. Kivshar, R. Singh, Adv. Materials 31, 1901921 (2019).
6. “Sensing at terahertz frequency domain using a sapphire whispering gallery mode resonator”, C. Mathai, R. Jain, V. G. Achanta, S. P. Dutttagupta, D. Ghindani, N. R. Joshi, R. Pinto, S. S. Prabhu, Opt. Lett. 21, 5383 (2018).
7. “Study of THz-Plasmon hybridization of a loop Yagi-Uda absorber”, Arnab Pattanayak, Sandipta Roy, Goutam Rana, Siddhartha P. Dutttagupta, Venu Gopal Achanta, and S. S. Prabhu Sci. Rep. 7, 16961(2017).
8. “Observation of giant Goos-Hanchen and angular shifts at designed interfaces”, V. J. Yallapragada, A. P. Ravishankar, G. J. Mulay, G. S. Agarwal, and V. G. Achanta, Sci. Rep. 6, 19319 (2016).
9. “Plasmonic quasicrystals with broadband transmission enhancement”, Sachin Kasture, Ajith P R, V J Yallapragada, Raj Patil, Nikesh V. V., Gajendra Mulay, and Achanta Venu Gopal, Sci. Rep. 4, 5257 (2014).
10. “Optical reflectionless potentials for broadband, omnidirectional antireflection”, L. V. Thekkekara, Achanta Venu Gopal, and S. Dutta Gupta, Opt. Express 22, 17382 (2014).
11. “Plasmon-mediated magneto-optical transparency”, V. I. Belotelov, L. E. Kreilkamp, I. A. Akimov, A. N. Kalish, D. A. Bykov, S. Kasture, V. J. Yallapragada, Achanta Venu Gopal, A. M. Grishin, S. I. Khartsev, M. Nur-E-Alam, M. Vasiliev, L. L. Doskolovich, D. R. Yakovlev, K. Alameh, A. K. Zvezdin, and M. Bayer, Nature Commun. 4:2128 (2013).
12. “Semiconductor waveguide circuit for coupling an InGaAs quantum dot spin to a path

encoded photon”, I. J. Luxmoore, N. A. Wasley, A. J. Ramsay, A. C. T. Thijssen, R. Oulton, M. Hugues, S. Kasture, Achanta Venu Gopal, A. M. Fox, M. S. Skolnick, Phys. Rev. Letts. 110 037402 (2013).

13. “Enhanced magneto-optical effects in magnetoplasmonic crystals”, V.I. Belotelov, I.A. Akimov, M. Pohl, V.A. Kotov, S. Kasture, A.S. Vengurlekar, Achanta Venu Gopal, D.R. Yakovlev, A.K. Zvezdin, M. Bayer, Nature NanoTech. 6, 370-376 (2011).
14. “Damping of exciton Rabi rotations by acoustic phonons in optically excited InGaAs/GaAs quantum dots”, Andrew Ramsay, Achanta Venu Gopal, E. M. Gauger, A. Nazir, B. W. Lovett, A. M. Fox, M. S. Skolnick, Phys. Rev. Lett. 104 017402 (2010).
15. "Photoluminescence study of exciton-optical phonon scattering in bulk GaAs and GaAs quantum wells" Achanta Venu Gopal, Rajesh Kumar, A. S. Vengurlekar, A. Bosacchi, S. Franchi, L. N. Pfeiffer, and J. Shah, J. Appl. Phys.. 87, 1858 (2000).
16. "Exciton Formation and Relaxation Dynamics in Quantum Wires", Rajesh Kumar, A. S. Vengurlekar, Achanta Venu Gopal, T. Mèlin, F. Laruelle, B. Etienne, and J. Shah, Phys. Rev. Lett. 81, 2578 (1998).

Patents

Current Activities

(Not more than 100 words)

Light-matter interaction in nanophotonic structures embedded with single dipole emitters like quantum dot or nanodiamond. To study metamaterials for various applications including single-photon emitters, biosensors, atom chips. To develop single-photon detectors.

Honour(s)/Award(s)/ Fellowship(s)

- 1. Honorary Fellow of Metrology Society of India**
- 2. Japan Science and Technology (JST) Fellow, Japan (2003-2004)**
- 3. New Energy and Industrial Technology Organization (NEDO) Fellow, Japan (2000-2003)**

Contributions to AcSIR

Guiding PhD students from June 2021

Membership of Professional Societies/ Institutions

- 1. Senate member, IISER, Berhampur**
- 2. Senate member, IIT, Delhi**
- 3. Executive Council Member, Optical Society of India**
- 4. Senior Member, IEEE**
- 5. Member of Optical Society of America**
- 6. Member of SPIE**

Any other Information

(Not more than 100 words)