

STAFF PROFILE

Name : Dr. S. Munawar Basha, Ph.D.,

Designation : Assistant Professor

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1. Academic Qualification

Degree	Year	Subject	Institution	University
Ph.D.	2012	Physics	Anna University – Chennai	Anna University, Chennai
PG	2007	Physics	Jamal Mohammed College, (Autonomous), Tiruchirappalli	Bharathidasan University, Tiruchirappalli
UG	2005	Physics	Islamiah College, Vaniyambadi	Madras University, Chennai
HSC	2002	-----	Islamiah Boys HS School, Vaniyambadi	TN State Board
SSLC	2000	-----	Islamiah Boys HS School, Vaniyambadi	TN State Board

2. Work Experience

S. No.	Positions Held	Name of the Institute	From	To
1	Research Scientist	Temasek Laboratories @NTU, Nanyang Technological University, Research Techno Plaza, Singapore - 637 553	Aug 2012	Feb 2014
2	Assistant Professor	Department of Physics, C Abdul Hakeem College (Autonomous), Hakeem Nagar, Melvisharm Tamil Nadu – 632 509	Feb 2014	Till Date

STAFF PROFILE

3. Professional Recognition/Award/Prize/Certificate/Fellowship received

S. No.	Name of the Award	Awarding Agency	Year
1	Best Science Student Award	Maniyam Murugappa Trust, Vaniyambadi	2005
2	Junior Research Fellow	DST, New Delhi	2008-09
3	Best Poster Presentation	IWPSD, New Delhi	2009
4	South East Asia Young researchers	JSPS-Japan	Sep 2009
5	Senior Research Fellow	CSIR, New Delhi	2010-11
6	South East Asia Young researchers	JSPS-Japan	Oct 2011
7	Senior Research Fellow (Direct)	CSIR, New Delhi	2011-12
8	Certificate of Appreciation for research article publications	C Abdul Hakeem College (Autonomous), Melvisharam	2024

4. Professional Development Programme Attended (FDP/FIP/RC/OP/PDP – More than 3 Days)

S. No.	Name of the Programme	Name of the Organizer	Duration With Date
1	INDIA- JAPAN workshop on Quantum Beam Science	Saha institute of Nuclear Physics, Kolkata and Graduate University of Advance studies, Japan	6 Days 07-03-2008 to 12-03-2008
2	Summer School on Physics of semiconductor Nanostructures	Institute of Radio Physics and Electronics, University of Calcutta	19 Days 02-06-2008 to 20-06-2008
3	Indo –US Workshop on Visible and Ultraviolet sources for solid state lighting and water purification	Crystal Growth Centre, Anna University, Chennai	3 Days 05-01-2009 to 07-01-2009
4	International workshop on Nanoscience and technology	Anna University, Chennai and ICTP, Italy	3 Days 28-10-2009 to 30-10-2009
5	International Winter School for Graduates (IWSG 2009)	IIT Bombay, Mumbai	6 Days 30-11-2009 to 05-12-2009
6	International workshop on the physics of semiconductor devices (IWPSD 2009)	Jamia Millia Islamia, New Delhi	5 Days 15-12-2009 to 19-12-2009

STAFF PROFILE

7	INDO –ITALIAN Advanced Level workshop on semiconductor nanostructure	Anna University, Chennai and Embassy of Italy, New Delhi	3 Days 08-09-2010 to 10-09-2010
8	Asia –Pacific Workshop on Materials Characterisation	Crystal Growth Centre, Anna University, Chennai	3 Days 22-09-2011 to 24-09-2011
9	AICTE STAFF Development Programme	Crystal Growth Centre, Anna University, Chennai	15 Days 07-12-2011 to 21-12-2011
10	Orientation Programme	UGC-HRDC, Bharathiar University, Coimbatore, TN	28 Days 18-11-2015 to 15-12-2015
11	Winter School on Basic Science	UGC-HRDC, Moulana Azad National Urdu University, Hyderabad	21 Days 11-12-2018 to 31-12-2018
12	Refresher Course in Physics	UGC-HRDC, Gujarat University, Ahmadabad, Gujarat	14 Days 07-09-2020 to 20-09-2020
13	Refresher Course in Physics	UGC-HRDC, University of Mumbai, Mumbai, Maharashtra	14 Days 09-12-2021 to 22-12-2021
14	Refresher Course in Physics	UGC-HRDC, Kumaun University, Nanital, Uttarakhand.	14 Days 18-09-2023 to 03-10-2023

5. Research & Development

List of Papers published (Name, Title, Journal Name, Volume, Year, Page No) (Link if any)

S.No	Name of the Authors	Title of the Paper	Name of the Journal	Vol., Page No, Year.	Link if any
1	Munawar Basha, S., Ramasubramanian, S., Thangavel, R., Rajagopalan, M. J. Kumar.	Magnetic properties of Ni doped gallium nitride with vacancy induced defect.	Journal of Magnetism and Magnetic materials.	Vol. 322, pp.238-241, 2010.	https://doi.org/10.1016/j.jmmm.2009.09.028

STAFF PROFILE

2	Munawar Basha, S. , Ramasubramanian, S., Rajagopalan, M., Kumar, J., Kang, T. W., Subramanian, N. G. and Kwon, Y.	Investigations on Cobalt doped Gallium nitride for spintronic applications,	Journal of crystal Growth.	Vol.318, pp.432- 435, 2011.	https://doi.org/ 10.1016/j.jcry sgro.2010.10.0 15
3	Suresh Kumar, V., Kumar, J., Puviarasu, P., Munawar Basha, S. , Kanjilal, D. and Asokan, K.	Effect of 100 MeV Ni ⁹⁺ ion irradiation on MOCVD grown n-GaN.	Physica B: Condensed Matter.	Vol. 406, No. 22, pp.4210- 4213, 2011.	https://doi.org/ 10.1016/j.phys b.2011.08.009
4	Munawar Basha, S. , Asokan, K., Sangeetha, P., Ramakrishnan, V. and Kumar, J.	Micro Raman analysis of MOCVD grown Gallium Nitride epilayers irradiated with light and heavy ions.	Materials Chemistry and Physics.	Vol.132, No.2-3, pp.494- 499, 2012.	https://doi.org/ 10.1016/j.mat chemphys.201 1.11.059
5	Munawar Basha, S. , Ramasubramanian, S., Rajagopalan, M. and Kumar, J.	Investigations of Cobalt and Carbon codoping in Gallium Nitride for spintronic applications.	Journal of Magnetism and Magnetic materials.	Vol. 324, pp.1528- 1533, 2012.	https://doi.org/ 10.1016/j.jmm m.2011.11.05 9
6	Munawar Basha, S. , Ryu, S. R., Kang, T.W., Srivastava, O.N., Ramakrishnan, V. and Kumar, J.	Effect of growth temperature on gallium nitride nanostructures using HVPE technique.	Physica E: Low- dimensional Systems and Nanostructures	Vol. 44, pp. 1885- 1888. 2013.	https://doi.org/ 10.1016/j.phys e.2012.05.014
7	Ravikiran, L., Radhakrishnan, K., Dharmarasu, N., Agrawal, M. and Munawar Basha, S.	Strain states of AlN/GaN- stress mitigating layer and their effect on GaN buffer layer grown by ammonia molecular beam epitaxy on 100-mm Si(111).	Journal of Applied Physics.	Vol. 114, pp. 123503, 2013.	https://doi.org/ 10.1063/1.482 2031
8	L. Ravikiran, K. Radhakrishnan, Munawar Basha, S. , N. Dharmarasu, M. Agrawal, C. M. Manoj kumar, S. Arulkumaran, G. I. Ng.	Study on GaN buffer leakage current in AlGaN/GaN high electron mobility transistor structures grown by ammonia-molecular beam epitaxy on 100-mm Si(111).	Journal of Applied Physics.	Vol. 117, pp. 245305, 2015.	https://doi.org/ 10.1063/1.492 3035

STAFF PROFILE

9	NS Kaleemullah, S Ramsubramanian, R Mohankumar, Munawar Basha, S.	Magnetic properties of gadolinium and carbon co-doped gallium nitride.	Solid State Communications.	Vol. 249, pp. 7-11. 2017.	https://doi.org/10.1016/j.ssc.2016.10.003
10	P Muzammil, Munawar Basha, S., GS Muhammed.	Effect of precursors condition on the structural morphology of synthesized GaN".	AIP Conference Proceedings.	Vol. 1953 (1), pp. 030181, 2018.	https://doi.org/10.1063/1.5032516
11	P. Muzammil, Munawar Basha, S., R Loganathan, GS Muhammed.	Synthesis of GaN fibers by varying precursor concentrations using Electrospinning method.	Optik.	Vol. 184, pp. 75-81, 2019.	https://doi.org/10.1016/j.ijleo.2019.03.026
12	P Muzammil, Munawar Basha, S., GS Muhammed.	Structural and Magnetic Properties of Fe-Doped GaN by Sol-Gel Technique.	Journal of Superconductivity and Novel Magnetism.	Vol. 33, pp. 2267-2271, 2020.	https://doi.org/10.1007/s10948-020-05458-6
13	P Atheek, P Puviarasu, Munawar Basha, S., K Bhujel.	Micro-Raman analysis on the impact of light ion irradiation of Hydride Vapor-Phase Epitaxy grown gallium nitride epilayers.	Thin Solid Films.	Vol. 761, pp. 139526 (1-7), 2022.	https://doi.org/10.1016/j.tsf.2022.139526
14	P Atheek, P Puviarasu, Munawar Basha, S.	Micro-Raman analysis of HVPE grown etched GaN epilayer with porous formation.	Semiconductor Science and technology.	Vol. 98, pp. 075006 (1-8), 2023.	https://iopscience.iop.org/article/10.1088/1361-6641/acd575
15	P Atheek, P Puviarasu, Munawar Basha, S.	Impact of swift heavy ion irradiation on as-grown gallium nitride epilayers by MOCVD technique.	Radiation Physics and Chemistry.	Vo. 216, pp. 111430 (1-10), 2024.	https://doi.org/10.1016/j.radphyschem.2023.111430

STAFF PROFILE

List of Paper Presentations in National/International Seminar/Conference (Paper Title, Seminar/Conference, Place, Date)

Year	Title of the Paper	Name of the Seminar/Conference	Place	Date
2009	Ferro Magnetism in Nickel doped Gallium Nitride from First principle Calculations.	National conference on Current topics in Theoretical Physics	University of Madras Chennai –25, India	20-21, February
2009	On the modulated device structure of ZnO/GaN using PLD and MOCVD.	8th International Conference on Nitride Semiconductors	Jeju, Korea	18-23 October
2009	Investigations on Nickel doped Gallium Nitride.	15th International Workshop on Physics of Semiconductor Devices	Jamia Millia Islamia, New Delhi, India	15-19 December
2010	Investigation on Cobalt doped GaN for Spintronic application.	International Conference on Crystal Growth	Beijing, China	8-13 August
2010	Effect of growth parameters and influence of substrates on GaN based nanostructures.	International Conference on Crystal Growth	Beijing, China	8-13 August
2010	Growth of InGaN based Light Emitting Diode device structures using Metal Organic Chemical Vapour Deposition,	International Conference on emerging technologies in renewable energy (ICETRE-2010)	Anna University, Chennai-India	18-21 August
2011	On Transition Metal doped Gallium Nitride for Spintronics .	International Workshop on Wideband Gap Semiconductors	Anna University, Chennai-India	10 -11 January
2017	Effect of precursors condition on the structural morphology of synthesized GaN	2nd International Conference on Condensed Matter and Applied Physics	Govt. Engineering College Bikaner, Rajasthan, India	24 -25, November

STAFF PROFILE

2018	Structural and Optical Properties of GaN nanofibers by Electrospinning Method	International Conference on Advanced Nanomaterials for Energy, Environment and Health Applications (ANEH-2018)	K.S.R College of Arts and Science for Women & Swansea University, Wales, UK	31 August 2018 – 1 September
2018	Structural and Magnetic Properties of Fe-Doped GaN by Sol-Gel Technique.	International conference on magnetic materials and application (ICMAGA-2018)	NISER, Bhubaneswar, India	9-13, December
2019	Optimizing precursor concentration in the synthesis of PVP assisted GaN nanoparticles using sol-gel method	5th International conference on Nanoscience and Nanotechnology	SRM Institute of Science and Technology, India	28-30 January
2021	Micro Raman Studies on HVPE Grown GaN epilayers Irradiated with Light Ions.	65th DAE Solid State Physics Symposium	DAE convention Centre, Mumbai, India	15-19, December
2021	Role of precursor parameter on structural and optical studies of sol-gel grown GaN	65th DAE Solid State Physics Symposium	DAE convention Centre, Mumbai, India	15-19, December

6.1 List of Invited Talk

Year	Title of the Talk	Nature of the Event	Place	Date
2015	Thin film Growth Techniques	Regional Seminar on Nanomaterials	Department of Physics, Islamiah College, Vaniyambadi	29.01.2015
2017	Semiconductor Devices	One Day National level technical symposium	C Abdul Hakeem College of Engineering and Technology, Melvisharam	04.03.2017

STAFF PROFILE

2019	Thin film Technology for growth of semiconducting Materials	One Day National level technical symposium	C abdul Hakeem College of Engineering and Technology, Melvisharam	09.04.2019
2020	Semiconductor Devices and its application	State Level Seminar	Department of Physics DKM College for Women, Vellore	14.02.2020
2022	Alternating current	Panel discussion on topics for Class XII students.	Shrishti Vidyashram (CBSE) Sr. Sec School, Vellore.	18.11.2022
2024	Semiconductor Devices and its application	State Level Seminar	Department of Physics ASMWC, Villapakkam.	07.02.2024
2024	Semiconductor Devices – Key to Humanity	Special Lecture	Department of Physics, Sacred Heart College, Tirupattur	29.02.2024

6.2 VIDWAN

ID: 216185

Link: <https://vidwan.inflibnet.ac.in/profile/216185>

6.3 Research Identification* (IF ANY)

Orcid ID: 0000-0001-9547-4257	Google Scholar ID : QFbdetoAAAAJ
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7 Any Other

FIELD OF RESEARCH EXPERTISE:

- ❖ Growth of Gallium nitride based LEDs and HEMTs Structure by MBE/MOCVD technique
- ❖ Investigation on Transition Metal doped GaN material for spintronic application
- ❖ Growth of nitride nanostructures by CVD technique.
- ❖ Ion Irradiation studies of GaN epilayers
- ❖ Defect analysis of GaN samples using DLTS

HANDS ON EXPERIENCE:

- ❖ Metal Organic Chemical Vapour Deposition (MOCVD) 200RF-S
- ❖ Molecular Beam Epitaxy (MBE), VECCO GEN 20

STAFF PROFILE

- ❖ Electron Beam Sputtering and Vacuum Coating systems
- ❖ Rapid Thermal Annealing unit
- ❖ Synthesis furnaces to grow Nitrides materials
- ❖ Electrical characterisation unit such as HALL, I-V and C-V
- ❖ Deep Level Transition Spectroscopy (DLTS)
- ❖ HRXRD-Phillips and Photoluminescence setup
