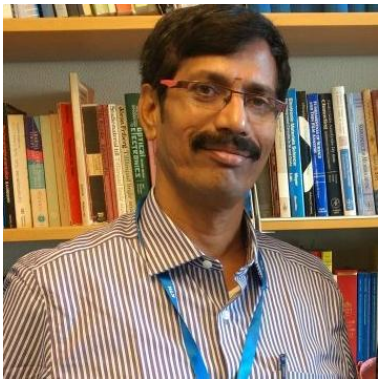
National Institute of Technology, Tiruchirappalli:
Performa for CV of Faculty Members

Brief CV of Dr. N.Gopalakrishnan



Dr.N.Gopalakrishnan did his Ph.D in 1997 at Anna University, Chennai, in the Nucleation and Growth kinetics of III-V Semiconductor. After his Ph.D, he went to Royal Institute of Technology, Sweden for the Post Doctoral research. Later, he had been at Japan for 3 years for Post Doctoral Research at KIT and AIST, Japan. He had been offered prestigious STA (i.e JSPS) fellowship by Japan Science and Technology, Government of Japan for his stay at AIST, Tsukuba, Japan. He had been also at South Korea for one and half years as a Post-Doctoral researcher in Dong-Eui University.

Since March 2018, he is working as Professor of Physics at National Institute of Technology (NIT), Tiruchirapalli. Earlier, he joined as an Assistant Professor in Sept. 2007 and subsequently promoted to Associate Professor in Sept. 2010. He had been also served as Associate Dean (Academic) in NIT-T from Oct.2012 to Nov.2015 and Head, Department of Physics from Jan.2015-Jan.2018. Dr.N.Gopalakrishnan published about 71 research papers in the International journals and presented about 86 research papers in the National and International conferences. Under his supervision 3 students completed Ph.D degree and 36 students completed Master degree projects. Currently, 9 students are doing Ph.D under his supervision.

Dr.N.Gopalakrishnan has good experience in Growth of III-V and II-VI thin films by versatile techniques, VPE, MBE, PLD and Sputtering. Beside, his group is working in synthesis of oxide nanomaterials, Spintronics, Gas sensing and Water purification. Recently, his group successfully fabricated ZnO *p-n* junction and CuO based sensor devices.

Beside his Post Doctoral Research in Sweden, Japan and South Korea, he visited United States of America, Germany, Hong Kong, Australia, Germany and Singapore for conferences, scientific discussion, Lab visit and to deliver invited lectures. He has delivered several invited lectures in India as well as in abroad.

CV of N.Gopalakrishnan

Name : **N.GOPALAKRISHNAN**
Date of Birth : 9th May 1967
Nationality : Indian
Sex : Male
Martial Status : Married

Address for Communication : Dr. Nammalvar Gopalakrishnan
Professor
Department of Physics
National Institute of Technology (NIT)
Tiruchirapalli-620 006, INDIA.
E.mail: ngk@nitt.edu
Mobile: (+91) 98949-14905

Education:

Ph.D (Physics)	April 1997	Anna University, Chennai, India.
M.Phil (Physics)	Sept.1991	Anna University, Chennai, India.
M.Sc (Physics)	April.1990	M.K.University, Madurai, India.

Current Position and Administration detail:

Professor Department of Physics National Institute of Technology Tiruchirappalli-15	Since 12 March 2018	Teaching and Research
Head Department of Physics National Institute of Technology Tiruchirappalli-15	Jan.2015-Jan2018	Teaching, Research and Administration
Associate Dean (Academic) National Institute of Technology Tiruchirappalli-15	Oct. 2012 –Nov.2015	Teaching, Research and Administration

Teaching:

Under Graduate - * Engineering Physics-I * Engineering Physics-II
Post Graduate - * Thin Film Technology * Solid State Physics
* Electrical, Magnetic and Optoelectronic Materials
* Fabrication Technology

Research: Thin films growth (Sputtering/PLD/MBE/HVPE)/
Synthesis of oxide nanostructures/ Optoelectronics/
Spintronics/ Gas sensing/ Water Purification

Research supervision:

Ph.D Supervision - 03 (completed)
09 (on going)

Master degree projects - 43 (completed)
03 (on going)

Projects ongoing/completed:

1. ***'Doping and Capping in ZnO thin films for spintronics applications'*** sanctioned by CSIR, Govt. of India (July 2014 – July 2017).

2. ***'Codoping and band gap engineering in ZnO thin films for optoelectronics applications'*** sanctioned by DRDO, Govt. of India (Jan. 2009 – Jan. 2012).

Details of Professional Experiences:

Organisation	Designation	Period From - To	Nature of Job
Dept. of Physics National Inst. of Technology Tiruchirapalli-620 015.	***Professor***	***Since March 2018***	***Teaching & Research***
Dept. of Physics National Inst. of Technology Tiruchirapalli-620 015.	Associate Professor	Sept.2010- March 2018	Teaching & Research
Dept. of Physics National Inst. of Technology Tiruchirapalli-620 015.	Assistant Professor	Sept.2007- Sept. 2010	Teaching & Research
Dept. of Physics National Institute of Physics Tiruchirapalli-620 015.	CSIR-Senior Research Associate	May 2006- Sept.2007	Research & Teaching
Electronic Ceramic Centre Dong-Eui University, KOREA	Post Doctoral Fellow	June 2004- August 2005	Research
AIST Central-2, Tsukuba JAPAN.	**STA Fellow** & AIST Post Doctoral Researcher	October 2000- March 2003	Research
Kyoto Inst. of Tech (KIT) JAPAN.	Post Doctoral Researcher	Oct.1999 – Mar 2000	Research
Royal Inst. of Tech (KTH). SWEDEN.	Post Doctoral Researcher	May.1997 – Jun.1998	Research

Present work at NIT, Tiruchirapalli, India:

* Teaching for Under Graduate (B.Tech) & Post Graduate (M.Sc/M.Tech) students
* Research Supervision for Doctoral & Master Students
* Responsible for Thin film laboratory (Group leader)
* Developed Thin film laboratory
* Growth of ZnO thin films by ***RF Sputtering*** for LED and Spintronics applications
* Successfully fabricated *p*-ZnO films.
* Successfully fabricated ZnO *p-n junction*.
* Synthesis of metal oxide nanostructures for Gas sensing applications.
* Fabrication of nanofillers incorporated polymer membranes for water purification.

Research at Dong-Eui University, Korea:

* Thin film growth of ZnO by ***Pulsed Laser Deposition (PLD)*** for LED application
  (GaN, B_2O_3 and BN doped ZnO in N_2O ambient by codoping and triple codoping approach)
* Characterisation of ZnO Thin films
  (Xrd, AFM, UV-VIS-NIR, PL, GDMS, Hall effect)
* ZnO Target Preparation for Ablation
  (Uniaxial press, Cold Isostaic Press, Ball Milling and Sintering)

Research at AIST, Japan:

* Thin film growth of GaAs on Si by ***MBE*** for solar cells application
  (Growth of GaAs and AlGaAs, Solar cell structures, Thermal Cyclic Annealing, Growth rate check, Flux measurement etc.)
* Thickness measurement (DEKTAK profiler)
* Chemical Cleaning of GaAs and Si Substrates
* Photolumienscence studies (PL), Atomic Force Microscope (AFM)
* Xrd analysis, in situ RHEED measurement during MBE
* Optimization of new ULVAC MBE system (MBE system Baking, cell baking etc.)
* Growth of metals on GaAs

Research Expeience at KTH, Sweden & others:

* Epitaxial growth of InP:Fe by ***HVPE*** for Laser Fabrications
* Hall Measurements of epilayers.
* Reactive ion Etching (RIE), Photolithography
* Material processing, Fabrication of Mesas & Laser Characterisation
* Modelling on planar substrates for HVPE:
* Modelling on patterned substrates for HVPE:
  Anisotropy behaviour of InP, around [110] and [-110] directional etched Mesas
  (Effect of surface diffusion length and surface diffusion coefficient)

No. of Ph.D, M.Sc and M.Tech projects completed/ongoing

No of Ph.D. Completed (03)

Sl.No	Thesis title	Student name	year	Course
1.	Realization of p-ZnO thin flms for the fabrication of homojunction by R.F. Magnetron sputtering.	Dr.L.Balakrishnan	Jan 2013	Ph D
2.	Codoping and bandgap engineering in ZnO thin films by R.F. Magnetron sputtering.	Dr.S.Gowrishankar	Feb 2014	Ph D
3.	Hydrothermal synthesis, characterization and fabrication of CuO gas sensors.	Dr.S.Bhuvaneshwari	July 2017	Ph.D

No of Ph.D. ongoing (09)

Sl.No	Name	Year of Registration
1.	Mr.R.N.Lokesh	August 2011
2.	Mr.E.Vinoth	February 2014
3.	Ms.E.Hemalatha	August 2014
4.	Mr.N.Sivanantham	February 2015
5	Ms.S.Pramila	February 2015
6	Mr.Arunachalam B	February 2016
7	Mr.Kirubanithy M	February 2016
8	Ms.Rekha Pilliadugula	August 2016
9.	Ms. Arya Sukumaran	July 2017

No of Master Degree Project Completed (43)

M.Sc - 25
M.Tech - 18

Other Positions:

Organisation	Designation	Period
Department of Electronic Materials Engineering, Australian National University (ANU), Canberra, AUSTRALIA.	Visiting Fellow	20-28 Feb.2014
Institute of Nanotechnology (INT), Kharlsure Institute of Technology (KIT), GERMANY.	Guest Researcher	24 May 2010 - 24 June 2010

Publications in International Journals

1. Enhancing the saturation magnetisation in Ni doped ZnO thin films by TOPO functionalization
   S Nallusamy and **N Gopalakrishnan**
   Journal of Magnetism and Magnetic Materials 485 (2019) 297-303

2. Gas sensing performances of pure and Cu-doped ZrO_2 nano structures
   E Hemalatha and **N Gopalakrishnan**
   Applied Physics A 125 (2019) 493.

3. Effect of additives on graphene oxide incorporated polysulfone (PSF) membrane
   P Ponnaiyan and **N Gopalakrishnan**
   Polymer Bulletin 76 (2019) 4003-4015

4. Fabrication and characterization of pristine and GO incorporated pristine membranes for water purification
   P Pramila, **N Gopalakrishnan**
   AIP Conference Proceedings 2115 (1) (2019) 030273

5. Selective ammonia sensor based on copper oxide/reduced graphene oxide nanocomposite.
   Bhuvaneshwari, Sakthivel, and **N.Gopalakrishnan**
   Journal of Alloys and Compounds 788 (2019) 422-428.

6. Effect of Fe doping on the NH_3 sensing properties of CuO nanostructures
   S Bhuvaneshwari, **N Gopalakrishnan**
   Journal of Materials Science: Materials in Electronics 30 (7) (2019) 6920-6928

7. Enhanced performance of PSF/PVP polymer membrane by silver incorporation
   P. Pramila and **N. Gopalakrishnan**,
   Polymer Bulletin (2019) 1-16.

8. Gas sensing performance of GaOOH and β-Ga2O3 synthesized by hydrothermal method: a comparison
   R Pilliadugula and **N.Gopalakrishnan**
   Materials Research Express 6 (2018) 025027

9. Magnetic vortex state in a layered muscovite sheet silicate single crystal
   M Kirubanithy, **N.Gopalakrishnan** and K Balamurugan
   Materials Research Express 5 (2018) 096103

10. Ammonia sensing Characteristics of Yttrium doped ZnO thin films by RF Magnetron sputtering
    E.Vinoth and **N.Gopalakrishnan**
    Mater. Res. Express 5 (2018) 066413

11. Printed flexible electrochemical pH sensors based on CuO nanorods
    L.Manjakkal, B.Sakthivel, **N.Gopalakrishnan**, R. Dahiya
    Sensors and Actuators B: Chemical 263(2018) 50-58

12. Gas sensing performance of RF magnetron sputtered Mg doped ZnO thin films.
    E.Vinoth, S.Gowrishankar and **N.Gopalakrishnan**
    Applied Physics A 124 (*2018) 433*.

13. Enhancement of antibacterial activity in the nanofillers incorporated PSF/PVP membranes.
    P.Pramila and **N.Gopalakrishnan**
    Materials Research Express 5 (4), (2018) 045306

14. Effects of ZnO incorporation on PSF-PEG mixed matrix membrane
    P.Pramila and **N Gopalakrishnan**
    AIP Conference Proceedings 1942 (2018) 080005

15. Effect of temperature on NH3 sensing by ZnO: Mg thin film grown by radio frequency magnetron sputtering technique
    E Vinoth and **N Gopalakrishnan**
    AIP Conference Proceedings 1942 (2018) 080058

16. CuO mesostructures as ammonia sensors
    S.Bhuvaneshwari and **N Gopalakrishnan**
    American Institute of Physics Conference Series 1942 (2018) 50114

17. Enhancement of ferromagnetism in Thiol functionalized Mn doped ZnO thin films
    Sivanantham Nallusamy and **N.Gopalakrishnan**
    Materials Research Express 5 (2018) 026418

18. Effect of additive on Graphene oxide incorporated polysulfone (PSF) membrane
    P Ponnaiyan, **N.Gopalakrishnan**
    Polymer Bulletin (2018)1-13.

19. High Performance CuO Nanorectangles based Room Temperature Flexible NH3 Sensor.
    Bhuvaneshwari Sakthivel , Libu Manjakkal , **N.Gopalakrishnan**
    IEEE Sensors Journal 17 (20), (2017) 6529-6536

20. Free standing CuO-MnO_2 nanocomposite for room temperature ammonia sensing.
    S.Bhuvaneshwari, S.Papachan and **N.Gopalakrishnan**
    AIP Conference Proceedings 1832 (2017) 050126

21. RF magnetron sputtered Cd doped ZnO thin films for gas-sensing applications.
    E.Vinoth, S.Gowrishankar, and **N.Gopalakrishnan**
    Materials and Manufacturing Processes 32 (2017) 377-382

22. Fabrication of Thiol Functionalized Ni doped ZnO Thin Films for Room Temperature Ferromagnetism.
    Sivanantham Nallusamy and **N.Gopalakrishnan**
    IEEE Magnetics Letters 8, (2017) 2109304

23. Hydrothermally synthesized Copper Oxide (CuO) superstructures for ammonia sensing.
    Bhuvaneshwari, S., and **N. Gopalakrishnan.**
    Journal of Colloid and Interface Science 480 (2016) 76–84.

24. Room temperature ammonia and VOC sensing properties of CuO nanorods.
    Bhuvaneshwari, S., and **N. Gopalakrishnan**
    AIP Conf. Proc. 1731 (2016) 050112

25. Facile synthesis of low dimensional CuO nanostructures and their gas sensing applications.
    Bhuvaneshwari, S., and **N. Gopalakrishnan.**
    Crystal Research and Technology 51 (2016) 145–153.

26. Enhanced ammonia sensing characteristics of Cr doped CuO nanoboats.
    Bhuvaneshwari, S., and **N. Gopalakrishnan.**
    Journal of Alloys and Compounds 654 (2016) 202-208.

27. Optimization of CuO Ultra Thin Film for Gas Sensor Application by RF Magnetron Sputtering
    N.Gopalakrishnan, L.Balakrishnan, B. Arunkumar and S. Gowrishankar
    Journal of Nanoelectronics and Optoelectronics 9 (2014) 496-501.

28. A Comparative Study on *p*-ZnO:AlAs/*n*-ZnO:Al and *p*-ZnO:AlAsN/*n*-ZnO:Al Bilayer Homojunction Diodes Performance
    . L. Balakrishnan, S.Gowrishankar, and **N. Gopalakrishnan**
    ECS Solid State Letters 3 (2014) Q20-Q23

29. Role of surface functionalization in ZnO:Fe nanostructures
    R.N. Lokesh, L. Balakrishnan, K. Jeganathan, Samar Layek, H.C. Verma, **N. Gopalakrishnan**
    Materials Science and Engineering B 183 (2014) 39– 46.

30. Bandgap engineering in $Zn_{(1-x)}Cd_xO$ and $Zn_{(1-x)}Mg_xO$ thin films by RF Sputtering.
    S. Gowrishankar, L. Balakrishnan and **N. Gopalakrishnan**
    Ceramics International 40 (2014) 2135-2142.

31. Hydrothermal Synthesis and Gas Sensing Properties of CuO Nanorods
    N. Gopalakrishnan, S. Bhuvaneshwari, L.Balakrishnan and S.Gowrishankar
    Sensor letters 11 (2013) 2233-2240.

32. Fabrication of *p*-ZnO:ZrN thin films by RF magnetron sputtering.
    S. Gowrishankar, L. Balakrishnan and **N. Gopalakrishnan**
    Composite Interfaces 20 (2013) 623-634.

33. *p*-type formation mechanism of codoped and tridoped ZnO thin films.
    L. Balakrishnan, S.R. Barman and **N. Gopalakrishnan**
    Science of Advanced Materials 5 (2013) 462-468.

34. Fabrication of *n*-$Zn_{1-x}Ga_xO$ and *p*-$(ZnO)_{1-x}(GaP)_x$ thin films and homojunction.
    S. Gowrishankar, L. Balakrishnan, T. Balasubramanian and **N. Gopalakrishnan**
    Materials Science and Engineering B 178 (2013) 31– 38.

35. Activation of room temperature ferromagnetism in ZnO films by surface functionalization with thiol and amine
    G. Jayalakshmi, **N. Gopalakrishnan,** T. Balasubramanian
    Journal of Alloys and Compounds 551 (2013) 667-671.

36. NH_3 sensing by *p*-ZnO thin films.
    L. Balakrishnan, S. Gowrishankar and **N. Gopalakrishnan**
    IEEE Sensors Journal 13 (2013) 2055-2060.

37. Influence of oxygen partial pressure on ferromagnetic switching characteristics of ZnO:Cr thin films.
    N. Gopalakrishnan, L. Balakrishnan, M. Suganya and S. Gowrishankar
    Composite Interfaces 20 (2013) 221-228.

38. Fabrication of tridoped *p*-ZnO thin film and homojunction by RF magnetron sputtering.
    L. Balakrishnan, S. Gowrishankar and **N. Gopalakrishnan**
    Ceramics International 38 (2012) 6221–6227.

39. Fabrication of Al^{3+} and large radii mismatch As^{5+} codoped *p*-ZnO thin film and homojunction.
    L. Balakrishnan and **N. Gopalakrishnan**
    Thin Solid Films 520 (2012) 5702–5705.

40. Dual codoping for the fabrication of low resistive *p*-ZnO
    L. Balakrishnan, S. Gowrishankar, P. Premchander and **N. Gopalakrishnan**
    Journal of Alloys and Compounds 512 (2012) 235– 240.

41. Thickness and substrate orientation dependence of ferromagnetism in Mn doped ZnO thin films
    N. Gopalakrishnan, L. Balakrishnan, A. Brindha and G. Jayalakshmi
    Cryst. Res. Technol., 47 (2012) 45-52.

42. Optimization of Anodic Layer and Fabrication of Organic Light Emitting Diode.
    N. Gopalakrishnan, S. Gowrishankar, T. R. Devidas and **L. Balakrishnan**
    Advanced Materials Research 488-489 (2012) 1348-1352.

43. Influence of Al concentration on electrical, structural and optical properties of Al–As codoped p-ZnO thin films
L. Balakrishnan, S. Gowrishankar, J. Elanchezhiyan, **N. Gopalakrishnan**
Physica B 406 (2011) 4447 –4452.

44. Grain boundary defects induced room temperature ferromagnetism in V doped ZnO thin films
G. Jayalakshmi, **N. Gopalakrishnan**, B.K. Panigrahi, T. Balasubramanian
Crystal Research and Technology 46 (2011) 1257-1264

45. Realization of *p*-ZnO thin films by GaP codoping
S. Gowrishankar, L. Balakrishnan, J. Elanchezhiyan, T. Balasubramanian,
N. Gopalakrishnan,
Physica B 406 (2011) 4085–4088.

46. Influence of substrate and film thickness on structural, optical and electrical properties of ZnO thin films
N. Gopalakrishnan, L. Balakrishnan, K. Latha, and S. Gowrishankar
Cryst. Res. Technol.46 (2011) 361-367.

47. AlN codoping and fabrication of ZnO homojunction by RF sputtering
L. Balakrishnan, P. Premchander, T. Balasubramanian, **N. Gopalakrishnan**
Vacuum 85 (2011) 881-886.

48. Influence of grain size on the properties of AlN doped ZnO thin film
K.P. Bhuvana, J. Elanchezhiyan, **N. Gopalakrishnan**, T. Balasubramanian
Materials Science in Semiconductor Processing 14 (2011) 84-88.

49. Characterization of $(ZnO)_{1-x}(AlN)_x$/ZnO junction for optoelectronic applications
N. Gopalakrishnan, L. Balakrishnan, V. Senthamizh Pavai, J. Elanchezhiyan, T. Balasubramanian
Current Applied Physics 11 (2011) 834-837.

50. Influences of thermal annealing on the stuctural, optical and electrical properties of nanostructured cadmium sulphide thin films
G. Bakiyaraj, **N. Gopalakrishnan** and R. Dhanasekaran
Chalcogenide Letters 8 (2011) 419-426.

51. Vacancy mediated room temperature ferromagnetism in $Zn_{1-x}Mn_xO$ thin films
N. Gopalakrishnan, L. Balakrishnan, B. Srimathy, M. Senthil Kumar and T. Balasubramanian
Physics Status Solidi A 207 (2010) 2180–2184.

52. Nucleation and characterization of $Zn_{1-x}Mn_xO$ thin films deposited on different substrates
N. Gopalakrishnan, J. Elanchezhiyan, K.P. Bhuvana and T. Balasubramanian
Physica B: Condensed Matter 404 (2009) 1563-1567.

53. Investigations of the properties of $Zn_{1-x}Cr_xO$ thin films grown by RF magnetron sputtering
J. Elanchezhiyan, K.P. Bhuvana, **N. Gopalakrishnan,** B.C. Shin, W.J. Lee, T. Balasubramanian
Journal of Alloys and Compounds 478 (2009) 45-48.

54. A novel approach for codoping in ZnO by AlN
K.P. Bhuvana, J. Elanchezhiyan, **N. Gopalakrishnan**, B.C. Shin, W.J. Lee, T. Balasubramanian
Vacuum 83 (2009) 1081-1085.

55. Realization of p-type conduction in $(ZnO)_{1-x}(AlN)_x$ thin films grown by RF magnetro n sputtering
K.P. Bhuvana J. Elanchezhiyan, **N. Gopalakrishnan** and T. Balasubramanian
Journal of Alloys and Compounds 478 (2009) 54-58.

56. Realization of room temperature ferromagnetism in $Zn_{1-x}Cr_xO$ thin films grown by RF magnetron sputtering
J.Elanchezhiyan, K.P. Bhuvana, **N. Gopalakrishnan**, Yong Chang, S. Sivananthan, M. Senthil Kumar and T. Balasubramanian
Journal of Alloys and Compounds 468 (2009) 7–10

57. Optimization of $Zn_{1-x}Al_xO$ film for antireflection coating by R.F. sputtering
K.P. Bhuvana J. Elanchezhiyan, **N. Gopalakrishnan** and T. Balasubramanian
J. of Alloys and Compounds 473(2009) 534-537.

58. Codoped (AlN) and monodoped (Al) ZnO thin films grown by R.F. Sputtering; A comparative study
K.P. Bhuvana J. Elanchezhiyan, **N. Gopalakrishnan** and T. Balasubramanian
Applied Surface Science 255 (2008) 2026–2029

59. On the nucleation and growth of $Zn_{1-x}Mn_xO$ thin films grown by RF magnetron sputte ring
N.Gopalakrishnan, J. Elanchezhiyan, K.P. Bhuvana and T. Balasubramanian
Scripta Materialia. 58 (2008) 930-933

60. Fabrication of GaN doped ZnO nanocrystallines by Laser ablation
N. Gopalakrishnan, B.C. Shin, K.P. Bhuvana, J. Elanchezhiyan and T. Balasubramanian
J. of Nanoscience and Nanotechnology 8 (2008) 4168-4171.

61. Improvement of stoichiometry in $(ZnO)_{1-x}(GaN)_x$ thin films grown by Laser ablation
N. Gopalakrishnan, B.C. Shin, K.P. Bhuvana, J. Elanchezhiyan and T. Balasubramanian
J. of Alloys and Compounds 465 (2008) 502-505.

62. Effect of doping concentration on $Zn_{1-x}Mn_xO$ thin films grown by RF magnetron sputtering
J. Elanchezhiyan, K.P. Bhuvana, **N. Gopalakrishnan** and T. Balasubramanian
Z. Naturforsch 63 a (2008) 585-590.

63. Investigation on Mn doped ZnO epitaxial films grown by RF magnetron sputtering
J. Elanchezhiyan, K.P. Bhuvana, **N. Gopalakrishnan** and T. Balasubramanian
Materials Letters 62 (2008) 3379-3381.

64. Substrates effect on $Zn_{1-x}Mn_xO$ thin films grown by RF magnetron sputtering
J. Elanchezhiyan, K.P. Bhuvana, **N. Gopalakrishnan** and T. Balasubramanian
J. of Alloys and Compounds 463(2008) 84-88.

65. Influence of post-deposition annealing on the structural and optical properties of ZnO thin films prepared by sol–gel and spin-coating method.
G. Srinivasan, **N. Gopalakrishnan**, Y.S. Yu, R. Kesavamoorthy and J. Kumar
Superlattices and Microstructures 43(2008) 112-119.

66. Development of NLO tunable band gap organic devices for optoelectronic applications
B. K. Periyasamy, Robinson S. Jebas, **N. Gopalakrishnan**, T.Balasubramanian
Materials Letters 61(2007)4246-4249.

67. An attempt on triple doping in ZnO by pulsed laser deposition
N. Gopalakrishnan, B.C. Shin and T. Balasubramanian
Materials Letters 61 (2007) 4420-4422.

68. Effect of GaN doping on ZnO films by pulsed laser deposition
N. Gopalakrishnan, B.C. Shin, H.S. Lim, T. Balasubramanian and Y.S. Yu
Materials Letters 61 (2007)2307-2310.

69. Codoping in ZnO using GaN by pulsed laser deposition
N. Gopalakrishnan, B.C. Shin, H.S. Lim, T. Balasubramanian and Y.S. Yu
Journal of Crystal Growth 294(2006)273-277.

70. Comparison of ZnO:GaN films on Si(111) and Si(100) substrates by pulsed laser deposition
N. Gopalakrishnan, B.C. Shin, H.S. Lim, G.Y. Kim and Y.S. Yu.
Physica B 376-377 (2006) 756-759.

71. Effect of low temperature grown buffer layer thickness on the growth of GaAs on Si by MBE.
N. Gopalakrishnan, K. Baskar, H. Kawanami and I. Sakata
Journal of Crystal Growth 250(1-2)(2003)29-33.

72. Rapid epitaxial growth of conducting and insulating III-V compounds on (001), (110), (111)A, (311)A and (311)B surfaces by HVPE.
S. Lourdudoss, **N. Gopalakrishnan**, H. Holtz, M. Deschler and R. Beccard
Metallurgical and Materials Transactions A, 30A (1999)1047-1051

73. Self consistent model for InP selective regrowth by Hydride Vapour Phase epitaxy.
N. Gopalakrishnan , E.R. Messmer and S. Lourdudoss
Japanese Journal of Applied Physics, 38 (1999) 1037-1039

74. Investigations on the nucleation kinetics of L-Arginen Phosphate single crystals.
P. Mohankumar, **N. Gopalakrishnan**, R. Jayavel and P. Ramasamy
Crystal Research Technology 34(1999)1265-1268.

75. Compositional analysis on quaternary $Ga_xIn_{1-x}As_yP_{1-y}$ vapour phase epitaxy: A comparison between theory and experiment.
N. Gopalakrishnan, R. Dhanasekaran and S. Lourdudoss
Materials Chemistry and Physics 50(1997) 70-75.

76. Thermodynamic analysis of $GaAs_{1-x}P_x$ vapour phase epitaxy
N. Gopalakrishnan and R. Dhanasekaran
J.of Electrochemical Soc., 143 (1996) 2631-2635.

77. On the nucleation and composition analysis of InAs1-xPx vapour phase epitaxial growth
N. Gopalakrishnan and R. Dhanasekaran
J. Crystal Growth 162(1996)113-120.
78. Epitaxial nucleation and growth mechanism of III-V compound semiconductors.
N. Gopalakrishnan, R.S. Qhalid Fareed and R. Dhanasekaran
J. of Indian Institute of Sciences 76 (1996) 15-21.

79. Evaluation of composition and growth rate of $Ga_xIn_{1-x}P$ vapour phase epitaxy
N. Gopalakrishnan and R. Dhanasekaran
Materials Chemistry and Physics 45 (1995) 15-21.
80. Investigations on the two dimensional nucleation and growth kinetics of InP vapour phase epitaxy.
N. Gopalakrishnan, R. Dhanasekaran and P. Ramasamy
J. Crystal Growth 137 (1994) 235-239.

81. Vibrational transition probability and dissociation energy data for AsN molecule
N. Rajamanickam, R.N. Senthilkumar, S. Ganesan, **N. Gopalakrishnan,**
J. Rajkumar, V. Jegadesan and C. Dhandapani.
Acta Physica Hungarica 70 (1991) 71-76.

No of P.G (M.Sc) Projects Completed (25)

Sl. No	PG Project title	Name and year	Course
1.	Surface Modification of RF sputtered NiO thin films by Ag and GO for NH_3 Sensing	Kavyakala C May 2019	M.Sc
2.	Fabrication of p-ZnO:Ag/n-ZnO homojunction by RF Magnetron Sputtering	A Muhil May 2019	M.Sc
3.	Synthesis and Characterization of n-Type ZnSe and conversion to p- type by doping	Aashna Praveen May 2018	M.Sc
4.	Enhancement of Ferromagnetism in Vanadium doped ZnO thin films by Thiol functionalization	Shivam Kumar May 2018	M.Sc
5.	Synthesis and Characterization of ZnSe by Hydrothermal and Solvothermal Methods.	Lakshmi Harikumar May 2017	M.Sc
6.	Growth of Cr doped ZnO Thin films by R.F Sputtering and Surface functionalization for Spintronics Application	R.Varsha May 2017	M.Sc
7.	Enhancement of room temperature ferromagnetism in Mn doped ZnO thin film by RF Magnetron sputtering	Shana C P May 2016.	M.Sc
8.	Synthesis of CuO nanoparticles and CuO-MnO2 Nanocomposite for gas sensing applications	Seethal Pappachan May 2016	M.Sc
9.	Effect of Buffer layer thickness for solar cell applications	K.Vivekanandhan May 2015	M.Sc
10.	Synthesis of ZnO, CuO Nanostructures and ZnO-CuO Nanocomposites for Gas sensing applications	Naga Karthick K May 2015	M.Sc
11.	Fabrication of thin film hetero-junction for solar cell applications	Seena Mathew May 2014	M.Sc
12.	Magnesium doped Aluminum Nitride for spintronics application	Ranjith Kumar.P May 2014	M.Sc
13.	Synthesis and characterization of perovskite type $lafeo_3$ multiferroics	R.Prasanna perumal May 2013	M.Sc
14.	Synthesis of Al doped ZnO for solar cell applications	R.Ramamoorthy May 2013	M.Sc
15.	Synthesis of CuO nanorods for gas sensing applications	S.Bhuvaneshwari May 2012	M.Sc
16.	Substrate and thickness dependence of ferromagnetism in Mn doped ZnO films grown by RF magnetron sputtering	A.Brindha May 2011	M.Sc
17.	Fabrication of *p*-CuO/*n*-ZnO Hetrojunction for Gas Sensing Applications	Arunkumar.B May 2011	M.Sc
18.	Role of oxygen vacancies on $Zn_{1-x}Cr_xO$ thin films grown by RF sputtering	M.Suganya May 2010	M.Sc
19.	Fabrication and Characterization of OLED	Devidas T.R May 2010	M.Sc
20.	Effect of Substrate and Thickness on ZnO Thin Films Grown by RF Magnetron Sputtering	K.Latha May 2009	M.Sc
21.	Fabrication of p-n Junction Using Zinc Oxide by RF Magnetron Sputtering	V.Senthamizh Pavai May 2009	M.Sc
22.	Growth and characterization of Al doped ZnO (AZO) thin film by R.F. Magnetron sputtering	S.Gowrishankar May 2008	M.Sc

23.	Structural and optical properties of Al doped ZnO thin films prepared by R.F magnetron sputtering	J.Kabilan May 2008	M.Sc
24.	Fabrication of Al doped ZnO (AZO) films by thermal evaporation	B.Chandrababu May 2007	M.Sc
25.	Growth and characterization of Al doped ZnO (AZO) thin films by thermal evaporation	K.Ananth May 2007	M.Sc

No of P.G (M.Tech) Projects Completed (17)

Sl.No	Project title	Name and year	Course
1.	Inspection of Longitudinal weld in Pipe and circumferential welds by time of flight diffraction technique (TOFD)	Vignesh K May 2019	M.Tech
	Inspection of Longitudinal weld in Pipe and circumferential welds by time of flight diffraction technique (TOFD)	Vignesh K December 2018	M.Tech
2.	Guided wave ultrasonic testing for the rods of coke oven battery	Joydwipkarmakar May 2018	M.Tech
	Guided wave ultrasonic testing for the rods of coke oven battery	Joydwipkarmakar December 2017	M.Tech
3.	Defect Characterisation in Magnesium Alloy (AZ31) plate using Pulsed Thermography.	Pramesh Vikram May 2017	M.Tech
	Defect Analysis of Butt welded joint of structural Steel (IS-2062), Stainless Steel (SAE-304) and STBW T91 alloy using immersion Ultrasonic Testing.	Pramesh Vikram December 2016	M.Tech
4.	Development and Validation of UT-RAY Tracing software for flat and curved surface.	Rohit Kumar Agrawal May 2017	M.Tech
	Effect of Radiographyc Parameters on image quality tools in digital Radiography.	Rohit Kumar Agrawal December 2016	M.Tech
5.	Defect size measurement using Radiographic technique, A comparison with time of flight diffraction method.	Manas Mishra May 2016	M.Tech
	Advanced Ultasonic ray trace.	Manas Mishra December 2015	M.Tech

6.	Electromagnetic Non-Destructive Evaluation of Residual Stress in Shot Peened Low Carbon Steel Subjected to fatigue.	Subhash Koner May 2015	M.Tech
	Evaluation of Residual Stress and High Cycle Fatigue in Low Carbon Steel through Electromagnetic Non-Destructive Techniques.	Subhash Koner December 2014	M.Tech
7.	Multi frequency approach for accurate thickness measurement of steam generator tubes at grooves using remote field eddy current technique.	Manu Josheph May 2015	M.Tech
	Development and Sensitivity Assessment of Multi-frequency Remote field Eddy Current Technique.	Manu Josheph May 2014	M.Tech
8.	Study of post weld heat treatment effect on magnetic and microstructural behavior of 9Cr-1Mo steel weldment	Shaik shahazad May 2014	M.Tech
	Modeling of magnetic surface probe using JMAG software and application of magnetic methods for characterization of boiler tubes	Shaik shahazad Dec. 2013	M.Tech
9.	Characterization of thermal barrier coating speicamen using thermography technique	Nidheeshkumar.B May 2013	M.Tech
	Characterization of thermal barrier coating specimen using thermography technique	Nidheeshkumar.B Dec. 2012	M.Tech
10.	Detection and quantification of defects in concrete structures using digital x-ray radiography	Sajith S.G. May 2012	M.Tech
11.	Detection and quantification of defects in concrete structures using digital x-ray radiography	Sajitha S.G. Dec. 2011	M.Tech
12.	Deftect detection in concrete blocks using impact –echo technique	Chandramouli Patoju May 2011	M.Tech
	Defect detection in concrete blocks using impact –echo technique	Chandramouli Patoju Dec.2010	M.Tech
13.	Transmittance characdteristics and amplification of acoustic emission siganls during tensile deformation of mild steel	Shiva krishna L May 2010	M.Tech
	Transfer function characteristics of acoustic emission during tensile deformation of mild steel	Shiva krishan. L Dec.2009	M.Tech

14.	Opitmization of ground penetrating radar system parameters for nondestructive detection of rebars in concrete structures (Phase –I & phase II)	Shareef Shaik Dec. 2009 & May 2010	M.Tech
15.	Characterisation of solution annealing behaviour of modified 9Cr-1Mo steel by magnetic nde techniques	Jagannadham Parikala May 2011	M.Tech
	Characterization of microstucture of mod.9Cr-1Mo steell using magnetic Barkhausen emission technique	Jagannadham Parikala Dec 2010	M.Tech
16.	Higher order guided waves : an optimization study (Phase –I & phase II)	Venkataro Burri Dec. 2008 & May 2009	M.Tech
17.	Magnetostrictstive sensor for structural health monitoring of plate like structures	Jojalah Gundiga May 2009	M.Tech
	Generating and detecting guided waves in platet like structures using magnetostrictive sensor	Jojalah Gundiga Dec 2008	M.Tech

Conference Publications

Papers Published /Presented/ Participated in the International Conferences

1. Fabrication and characterization of pristine and GO incorporated pristine membranes for water purification
   P Pramila, N Gopalakrishnan
   AIP Conference Proceedings 2115 (1), 030273

2. Enhancement of Ferromagnetism in Amine functionalized Mn doped ZnO thinfilm
   Sivanantham Nallusamy, Gopalakrishnan Nammalvar
   International Conference on MAGnetic Materials and Applications (ICMAGMA) NISER, Bhuvaneswar, India during 09 -13 December 2018.

3. Thiol functionalized V doped ZnO films for Magnetic storage device Application
   Sivanantham Nallusamy and **Gopalakrishnan Nammalvar**
   International Conference on Sustainable Energy Technologies (i-SET 2018) held at Bharathidasan University, Tiruchirappalli , India during 27-28 June 2018.

4. Y3+ incorporated ZnO thin film grown by RF magnetron sputtering for optoelectronic applications.
   E. Vinothand and **N. Gopalakrishnan**
   International Conference on Sustainable Energy Technologies (i-SET 2018) held at Bharathidasan University, Tiruchirappalli, India during 27-28 June 2018.

5. Organic Ligands Induced Ferromagnetism in Ni doped ZnO films
   Sivanantham Nallusamy and **Gopalakrishnan Nammalvar**
   Intermag 2018 held at Marina Bay Sands Convention Center, Singapore during April 23-27, 2018.

6. Thiol Functionalied Cr doped ZnO films for enhanced ferromagnetism
   Gopalakrishnan Nammalvar, Sivanantham Nallusamy and Varsha Ravichandran
   4th International Conference on Nano Science and Nanotechnology (ICONN 2017) held at SRM University, Chennai, during 9-11 August 2017

7. Fabrication of Thiol functionalized Ni doped ZnO thin films
   Sivanantham Nallusamy and **N. Gopalakrishnan,**
   2017-IEEE Magnetics summer school, Santander, Spain, July19-23,2017

8. Antibacterial Study on GO incorporated PSF/PVP Mixed matrix membrane for Water Purification,
   Pramila P and **N. Gopalakrishnan**
   International Conference on Nano for Energy and Water 2017 and Indo-French Workshop on Water Networking, University of Petroleum and Energy Studies, Dehradun, India, Feb 22-24, 2017.

9. Enhancement of ferromagnetism in Thiol functionalized Mn doped ZnO thin films,
   N. Sivanantham and **N. Gopalakrishnan**,
   International Conference on Magnetic Materials and Applications, DMRL and Magnetic Society of India, Hyderabad, Feb 01-03, 2017

10. Metal Oxide Semiconductors for Gas Sensing Application
    Vinoth RAJ, Bhuvaneshwari S, **Gopalakrishnan Nammalvar**
    ICEM16-A-0916, *Suntec Singapore*,
    04^{th} to 08^{th} July, 2016.

11. Synthesis and Characterisation of ZnO Hierarchical Nanoflowers, Multi-linked and High Aspect Nanorods (ICMAT13-A-2150)
    R.N. Lokesh, L. Balakrishnan, K. Jeganathan and **N. Gopalakrishnan**
    7^{th}International Conference on Materials for Advanced Technologies, Suntec Singapore,
    30 June -5 July 2013

12. Synthesis and Gas Sensing Properties of CuO Nanorods (ICMAT13-A-2168)
    N. Gopalakrishnan, S. Bhuvaneshwari andL. Balakrishnan.
    7^{th} International Conference on Materials for Advanced Technologies, Suntec Singapore,
    30 June -5 July 2013

13. Optimization of anodic layer and fabrication of organic light emitting diode.
    N. Gopalakrishnan, S. Gowrishankar, T.R. Devidas and L. Balakrishnan
    2^{nd} International Conference on Key Engineering Materials (ICKEM 2012), Singapore, February 2012.
    Advanced Materials Research, Vols. 488-489 (2012) 1348-1352

14. Fabrication of *p*-ZnO thin films by ZrNcodoping.
    S. Gowrishankar, L. Balakrishnan and **N. Gopalakrishnan**
    SPIE Optics+Photonics 2012, San Diego, USA, August 2012
    Proceedings of SPIE, Vol. 8484(2012) 84840W-1-84840W-6.

15. Fabrication of ZnOhomojunction by Al-As-N tridoping.
    L. Balakrishnan, S. Gowrishankar and **N. Gopalakrishnan**
    International Semiconductor Device Research Symposium 2011 (ISDRS 2011), University of Maryland, Maryland, USA, December 2011(IEEE Xplore).
    DOI: 10.1109/ISDRS.2011.6135234

16. Realization of *n*-ZnO:Ga/*p*-ZnO:GaPhomojunction by RF magnetron sputtering.
    S. Gowrishankar, L. Balakrishnan, T. Balasubramanian and **N. Gopalakrishnan**
    International Semiconductor Device Research Symposium 2011 (ISDRS 2011), University of Maryland, Maryland, USA, December 2011(IEEE Xplore).
    DOI: 10.1109/ISDRS.2011.6135308

17. Effects of oxygen partial pressure on $Zn_{0.95}Cr_{0.05}O$ thin films grown by RF sputtering.
N. Gopalakrishnan, L. Balakrishnan, M. Suganya, S. Gowrishankar and G. Jayalakshmi
International Conference on Nanoscience and Nanotechnology (ICNN 2011), Coimbatore Institute of Technology, Coimbatore, India, July 2011.

18. Dual codoping for the fabrication of low resistive *p*-ZnO.
L. Balakrishnan, S. Gowrishankar, J. Elanchezhiyan, B.C. Shin, T. Balasubramanian and **N. Gopalakrishnan**
The 16th International Conference on Crystal Growth (ICCG-16), Chinese Academy of Sciences, Beijing, China, August 2010.

19. Fabrication of *p-n* junction with ZnO nanostructures by a novel approach.
L. Balakrishnan, S. Gowrishankar, T. Balasubramanian and **N. Gopalakrishnan** International *Conference on "Synthesis, Characterization Consolidation and Modelling of Nanomaterials" (ICON-2010), PSG College of Technology, Coimbatore, March 2010.*

20. Vacancy mediated ferromagnetism in $Zn_{0.85}Mn_{0.15}O$ nanostructures.
L. Balakrishnan, G. Jayalakshmi, B. Srimathy, M. Senthilkumar, T. Balasubramanian and **N. Gopalakrishnan**
International Conference on "Synthesis, Characterization Consolidation and Modelling of Nanomaterials" (ICON-2010), PSG College of Technology, Coimbatore, March 2010.

21. Dual codoping for the fabrication of low resistive *p*-ZnO
L.Balakrishnan, S.Gowrishankar, J.Elanchezhiyan, B.C.Shin, T.Balasubramanian and **N.Gopalakrishnan**
The 16th International Conference on Crystal Growth (ICCG-16) held at Beijing, China during Aug. 8-13, 2010.

22. Fabrication of *p-n* junction with ZnO nanostructures by a novel approach
L.Balakrishnan, S.Gowrishankar, T.Balasubramanian and **N.Gopalakrishnan**
Internation Conference on "Synthesis, Characterization Consolidation and Modelling of Nanomaterials" (ICON-2010) held at PSG College of Technology, Coimbatore during Mar. 5-6, 2010.

23. Vacancy mediated ferromagnetism in $Zn_{0.85}Mn_{0.15}O$ nanostructures
L.Balakrishnan, G.Jayalakshmi, B.Srimathy, M.Senthilkumar, T.Balasubramanian and **N.Gopalakrishnan**
Internation Conference on "Synthesis, Characterization Consolidation and Modelling of Nanomaterials" (ICON-2010) held at PSG College of Technology, Coimbatore during
Mar. 5-6, 2010.

24. Participated in "International Conference on Experimental Condensed Matter Physics", IIT- Bombay, Mumbai, India, Jan. 8-10, 2007.

25. ZnO based diluted magnetic semiconductor thin films by RF magnetron sputtering for spin photonic devices
J. Elanchezhiyan, K. P. Bhuvana, **N. Gopalakrishnan** and T. Balasubramanian
Proc. SPIE. 6674 (2007) 66740C-66746C.

26. A novel approach for development of co-doped ZnO semiconductor film bypulsed laser deposition and R.F.Sputterring**.**
N.Gopalakrishnan, B.C.Shin, K.P.Bhuvana, J.Elanchezhiyan and T.Balasubramanian
*Proceeding of 5th International conference on 'Trends in Industrial measurements and Automation -TIMA-2007' Jan.2007,NIT, Tiruchirapalli, India. pp.97-101***.**

27. ZnO films grown by pulsed laser deposition.
N.Gopalakrishnan, B.C.Shin, H.S.Lim, G.Y.Kim ,J.Kumar, T.Balasubramanianand Y.S.Yu
Proceedings of the "International workshop on Crystal Growth and Characterization of Advanced Materials", Anna University, Chennai, Jan. 2006, pp.336-344.

28. (Ga+N) Codoping in ZnO by Laser ablation
N.Gopalakrishnan, K.P.Bhuvana, J.Elanchezhiyan,B.C.Shin,H.S.Lim, T.Balasubramanian, J.Kumar and Y.S.Yu.
International Conference on Nanoscience and Technology held at University of Madras, Chennai, during 26 – 28 Aug 2006.

29. Fabrication of GaN doped ZnOnanocrystallines by Laser ablation
N.Gopalakrishnan, B.C.Shin, K.P.Bhuvana, J.Elanchezhiyan and T.Balasubramanian
International conference on Advanced Nanomaterials 2007 to be held at Indian Institute of Technology Bombay, Mumbai during 8-10 Jan.2006.

30. Red Shift of NBE in Triple CodopedZnO by Pulsed Laser Deposition
N.Gopalakrishnan, H.S.Lim, J.Y.Sohn, Sun Yoon, Taeheo Lee, Beomee Kim andY.S.Yu
Korean Physical Society Meetings, Seoul, April 21-23, 2005.

31. Growth of ZnO:Ga, In, N by Pulsed Laser Deposition
J.Y.Sohn, **N.Gopalakrishnan,**H.S.Lim, B.I. Kim, SeunghwanLee,Yeunkju Lee and Y.S.Yu
Korean Physical Society Meetings, Seoul, April 21-23, 2005.

32. Comparison of ZnO:GaN films on Si(111) and Si(100) substrates by pulsed laser deposition
N.Gopalakrishnan, B.C.Shin, H.S.Lim, G.Y.Kim and Y.S.Yu
ICDS-23, Awaji Island, Hyogo, Japan, July 24-29, 2005.

33. Growth of ZnO:BN by Pulsed Laser Deposition
N.Gopalakrishnan,H.S.Lim and Y.S.Yu
11th International Meetings on Ferroelectricity, Foz do Iguacu, Brazil, Sept.5-9, 2005.

34. Improvement of ZnO Properties by Triple Codoping in Pulsed Laser Deposition
N.Gopalakrishnan,H.S.Lim and Y.S.Yu
11th International Meetings on Ferroelectricity, Foz do Iguacu, Brazil, Sept.5-9, 2005.

35. A Novel approach to ZnO by PLD
N.Gopalakrishnan,J.Y.Sohn ,H.S.Lim, B.I. Kim andY.S.Yu
3rd International Workshop on ZnO and Related Materials.Sendai, Japan, October 6-8, 2004

36. Optical Characterisation of GaAs:Si/Si Grown by Molecular Beam Epitaxy(MBE)
N.Gopalakrishnan
14th International Conference on Crystal Growth, 9-13 August 2004, Grenoble, France.

37. Tri-doped (Ga, In, n) ZnO by Pulsed Laser Deposition
J.Y.Sohn, **N.Gopalakrishnan,**H.S.Lim, B.I. Kim andY.S.Yu
3rd International Workshop on ZnO and Related Materials.Sendai, Japan, October 6-8, 2004

38. Band gap engineering of ZnO thin films prepared by pulsed Laser deposition
B.I.Kim**, N.Gopalakrishnan,**H.S.Lim ,J.Y.Sohn and Y.S.Yu
3rd International Workshop on ZnO and Related Materials.Sendai, Japan, October 6-8, 2004.

39. Anisotropy behaviour in InP Selective Regrowth by Hydride Vapour PhaseEpitaxy
N.Gopalakrishnan, E.R.Messmer and S.Lourdudoss.
18th Nordic Semiconductor Meeting, Linkoping University, Linkoping, Sweden.

40. Effect of Buffer layer thickness on morphology and optical property of GaAs/Si by MBE.
N.Gopalakrishnan, K.Baskar, H.Kawanami and I.Sakata
14th American Conference on Crystal Growth and Epitaxy to be held at Seattle USA during 4-9 August 2002.

41. Rapid Epitaxial Growth of Conducting and Insulating III-V Compounds on (001), (110), (111)A, (311)A and (311)B Surfaces by HVPE.
S.Lourdudoss**, N.Gopalakrishnan**, H.Holtz, M.Deschlerand R.Beccaed
TMS International Symposium on Value-Addition Metallurgy, San Antonia, Texas, USA, Feb.1998.

42. Nucleation mechanism in Vapour Phase Epitaxial Growth of binary, ternary and quaternary semiconductors
N.Gopalakrishnan and R.Dhanasekaran
Proceedings of 14th International Conference on Nucleation and Atmospheric Aerosols, Helsinki, 26 - 30 August 1996.
Nucleation and Atmospheric Aerosols 1996, pp.149-152.

43. Growth kinetics of vapour phase peitaxial growth of $Ga_{1-y}In_yAs_{1-x}P_x$ compounds
N.Gopalakrishnan R.Dhanasekaran and P.Ramasamy
Eighth International Conference on Vapour Growth and Epitaxy (ICVGE-8), Albert LudwigsUniversitat, Germany. July 24-29, 1994.

44. Investigations on the Nucleation and growth kinetics of InAs1-xPx vapour Phase epitaxy
N.Gopalakrishnan,R.Dhanasekaran and P.Ramasamy
IUMRS International Conference on Electronic Materials, Hsinchu, Taiwan, Dec.19-22, 1994

45. Growth Kinetics of Ga1-yInyAs1-xPx quaternary compound semiconductor thin filmby vapour phase epitaxial growth.
N.Gopalakrishnanand R.Dhanasekaran
Seventh international conference on solid films and surfaces, Hsinchu, Taiwan, Dec.19-22, 1994.

46. Investigations on the epitaxial growth of compound semiconductors
N.Gopalakrishnan, R.S.Q.Fareed, R.Jothilingam, S.MoorthyBabu, R.Dhanasekaranand P.Ramasamy
Faraday Society, "General Discussion 95 Crystal Growth", Univ. of Strcthclyde, U.K, April 14-16, 1993.

47. Investigations on the two dimensonal nucleation an growth kinetics of InP VapourPhase epitaxy
N.Gopalakrishnan, R.Dhanasekaran and P.Ramasamy
Ninth American Conference on Crystal Growth (ACCG-9), Baltimore,Maryland, U.S.A, Aug.1-6, 1993.

48. On the Nucleation, Growth and Characterisation of KDP-ADP mixed crystal
K.Srinivasan, G.Ravi, **N.Gopalakrishnan**, S.Anbukumar R.Dhanasekaran and P.Ramasamy
Eighth international meeting on Ferroelectricity, NIST, Gaithersburg, Maryland, U.S.A, Aug.8-13, 1993.

Papers Published (Proceedings) /Presented/Participated in the National Conferences

1. Effect of Temperature on NH3 Sensing by ZnO: Mg Thin Film Grown by Radio Frequency Magnetron Sputtering Technique,
   E. Vinoth and **N. Gopalakrishnan,**
   62nd DAE Solid State Physics Symposium, DAE Convention Centre, Bhabha Atomic Research Centre, Mumbai, December 26-30, 2017.

2. Effects of ZnO incorporation on PSF-PEG mixed matrix membrane ,
   P. Pramila and **N. Gopalakrishnan**,
   62nd DAE Solid State Physics Symposium, DAE Convention Centre, Bhabha Atomic Research Centre, Mumbai, December 26-30, 2017.

3. CuO Mesostructures as Ammonia Sensors
   S.Bhuvaneshwari and **N. Gopalakrishnan,**
   62nd DAE Solid State Physics Symposium, DAE Convention Centre, Bhabha Atomic Research Centre, Mumbai, December 26-30, 2017.

4. Effect of Bufferlayer thickness for Solar Cell Application, Chennai Nano gathering – 2017,
   Vinoth E, Vivekanandhan K and **Gopalakrishnan N**
   National Conference on Nanomaterials and Nanobiotechnology NCNSNT, University of Madras, Feb 07 -08, 2017

5. Free Standing CuO-MnO2 Nanocomposite for Room Temperature Ammonia Sensing
   Bhuvaneshwari, S., Seethal Papachan, **N. Gopalakrishnan**
   61th DAE Solid State Physics Symposium. DAE-KIIT, Bhuvaneswar, Odisha, India. Dec 26 - 30, 2016

6. Diffusion Kinetics and Methanol Sensing of ZnO:Thin Film Fabricated by RF Magnetron Sputtering
   Vinoth, and N.Gopalakrishnan
   6th Interdisciplinary Symposium on Material Chemistry held at DAE-BARC, Mumbai, India during Dec 6 to 10, 2016

7. Effect of radiographic parameters on image quality of the X-ray system in digital Radiography
   Rohik K.Agrawal, Sheri George and **N.Gopalakrishnan**
   26th National Seminar & International Exhibition on Non-Destructive Evaluation. Thiruvananthapuram, December 15-17 2016.

8. Analysis of defect in butt weld of T91 alloy using ultrasonic C-scan testing and Thermography.
   Pramesh Vikram and **N.Gopalakrishnan**
   26th National Seminar & International Exhibition on Non-Destructive Evaluation, Thiruvananthapuram, December 15-17 2016.

9. Room temperature ammonia and VOC sensing properties of CuO nanorods.
   Bhuvaneshwari, S., and **Gopalakrishnan, N.**
   60th DAE Solid State Physics Symposium. *Amity University Noida, UP*
   December 25-29, 2015.

10. Study of Defects in Friction Stir Welded Dissimilar Aluminium Sample By Using Ultrasonic C Scan.
    Angad Acharya, M. Ashok and **N. Gopalakrishnan**
    National Seminar and exhibition on Non-Destructive Evaluation: 26-28 Nov.2015, Hyderabad, India.

11. Defect Detection and Quantification with Advanced Ultrasonic
    Aniket Kumar Tiwary, M. Ashok and **N. Gopalakrishnan**
    National Seminar and exhibition on Non-Destructive Evaluation: 26-28 Nov.2015, Hyderabad, India.

12. Multi-Frequency Approach for Accurate Thickness Measurement Of Steam Generator Tubes At Grooves Using Remote Field Eddy Current Technique
    Manu Joseph, S. Thirunavukkarasu and **N. Gopalakrishnan**
    National Seminar and exhibition on Non-Destructive Evaluation: 26-28 Nov.2015, Hyderabad, India.

13. Evaluation of Residual Stress and High Cycle Fatigue in Low Carbon Steel through Electromagnetic Non-Destructive Techniques
    Subash Koner, Ashis Kumar Panda, **N. Gopalakrishnan**, Amitava Mitra
    National Seminar and exhibition on Non-Destructive Evaluation: 4-6 Dec.2014, Pune, India.

14. Multi-Frequency Approach for Accurate Thickness Measurement Of Steam Generator Tubes using Remote Field Eddy Current Technique
    Manu Joseph, S. Thirunavukkarasu and **N. Gopalakrishnan,** B.P.C. Rao, C.K. Mukhopadhyay and T. Jayakumar
    National Seminar and exhibition on Non-Destructive Evaluation: 4-6 Dec.2014, Pune, India.

15. Realization of low resistive *p*-ZnO thin film by Al-As codoping.
    L. Balakrishnan, S. Gowrishankar and **N. Gopalakrishnan**
    Department of Atomic Energy- Solid State Physics Symposium (DAE - SSPS 2011), SRM University, Chennai, India, December 2011(AIP Conference Proceedings).
    AIP Conf. Proc. 1447 (2012) 763-764

16. Structural, electrical and optical properties of GaPcodopedZnO thin films.
S. Gowrishankar, L. Balakrishnan and **N. Gopalakrishnan**
Department of Atomic Energy- Solid State Physics Symposium (DAE - SSPS 2011), SRM University, Chennai, India December 2011(AIP Conference Proceedings).
AIP Conf. Proc. 1447(2012) 771-772

17. AlN doped (Codoped) ZnO films for the fabrication of *p*-ZnO.
L. Balakrishnan, J. Elanchezhiyan, K.P. Bhuvana, T. Balasubramanian and **N.Gopalakrishnan**
38thNational Seminar on Crystallography (NSC-38), University of Mysore, Karnataka, India, February 2009.

18. Effect of thickness and substrate on ZnO thin films by RF sputtering.
K. Latha, L. Balakrishnan, T. Balasubramanian and **N. Gopalakrishnan**
38th National Seminar on Crystallography, Mysore University, Karnataka, India, February 2009.

19. Influence of oxygen pressure on $Zn_{1-x}Mn_xO$ thin films by RF sputtering.
B. Srimathy, L. Balakrishnan, J. Elanchezhiyan, T. Balasubramanian and **N.Gopalakrishnan**
38th National Seminar on Crystallography, Mysore University, Karnataka, India, February 2009.

20. Effect of thickness and substrate on ZnO thin films by RF sputtering
K. Latha, L. Balakrishnan, T. Balasubramanian and **N. Gopalakrishnan**
38th National Seminar on Crystallography, Mysore University, Mysore, India, Feb. 11-13, 2009.

21. Influence of oxygen pressure on $Zn_{1-x}Mn_xO$ thin films by RF sputtering
Srimathy, L. Balakrishnan, J. Elanchezhiyan,T. Balasubramanian and **N. Gopalakrishnan**
38th National Seminar on Crystallography, Mysore University, Mysore, India, Feb. 11-13, 2009.

22. AlN doped (Codoped) ZnO films for the fabrication of p-ZnO
L.Balakrishnan, J.Elanchezhiyan, K.P.Bhuvana, T.Balasubramanian and **N.Gopalakrishnan**
National Seminar on Crystallography (NSC-38) held at University of Mysore, Karnataka during Feb. 11-13, 2009.

23. Participated in "Intellectual Property Rights Seminar" Tiruchirappalli, India, Jan. 9, 2009.

24. Participated in "Traditional and Emerging NDE methods for Managers and Engineers", IIT-Madras, Chennai, India, Feb. 20-21, 2009.

25. Participated in "National seminar & Exhibition on Non Destructive Evaluation-NDE 2009", BHEL & NIT, Tiruchirappalli, India, Dec.10-12,2009.

26. Participated in "Indo-US workshop on Visible and Ultraviolet sources for Solid state Lighting
and Water Purification", Crystal Growth Center, Anna University, Chennai, India, Jan. 5-7, 2009.

27. Participated in "Non Destructive Evaluation-NDE 2008", Lonavala, India, Dec. 1-3, 2008.

28. Substrates effects on GaN doped ZnO films grown by Pulsed Laser Deposition.
N.Gopalakrishnan, B.C.Shin, H.S.Lim, G.Y.Kim ,J.Kumar and Y.S.Yu
National Symposium on Crystal Growth and Characterisation, Loyola College, Chennai, Sept.29-30, 2005.

29. Growth of ZnO using codoping and triple codopingmethod by Pulsed laser deposition.
N.Gopalakrishnan, B.C.Shin, H.S.Lim, J.Kumar, T.Balasubramanian and Y.S.Yu
Second National Symposium on Crystal Growth of Laser related materials SSN college of Engineering, Kalavakam, India, December 19-20, 2005.

30. Vapour Phase Epitaxial Growth of $Ga_xIn_{1-x}As$
N.Gopalakrishnan and R.Dhanasekaran
National Conference on fundamentals of Crystal Growth, Crystal Growth Centre, AnnaUniversity, Chennai, India, Jan.29-30, 1996.

31. Investigation on the Nucleation and Growth Kinetics of Vapour Phase EpitaxialGrowth of III-V Binary, Ternary and Quaternary Compound Semiconducors-Thesis Presentation.
N.Gopalakrishnan and R.Dhanasekaran
DAE Solid State Physics Symposium, BARC, Bombay, Dec.27-31, 1996.

32. Thermodynamic analysis of $Ga_xIn_{1-x}P$ Vapour Phase Epitaxy
N.Gopalakrishnan and R.Dhanasekaran
Sixth National seminar on Crystal Growth, Anna Univeristy, Chennai, Feb.2-4, 1995

33. Vapour Phase Epitaxial Growth of $Ga_xIn_{1-x}Sb$
N.Gopalakrishnan and R.Dhanasekaran
National Conference on Recent Advances in Semiconductor, Indian Institute of Technology, New Delhi, June 20-22, 1995.

34. Vapour Phase Epitaxial Growth of $Al_xGa_{1-x}As$
N.Gopalakrishnan and R.Dhanasekaran
National seminar on emerging trends thin film technology and device fabrication, Cochin University of Science and Technology, Cochin, India, Nov.27-29, 1995.

35. Investigations on the initial stages of the Vapour Phase Epitaxal Growth of $Ga_xIn_{1-x}P$ compound semiconductors
N.GopalakrishnanR.Dhanasekaran and P.Ramasamy
Material Research Society of India, Hyderabad, Feb.1994.

36. Nucleation and Growth kinetics of Ga1-yInyAs1-xPx by VPE and oxide precipitates in CZ silicon
N.Gopalakrishnan,H.R.Dizasi, R.Dhanasekaran and P.Ramasamy
INDO-US workshop on Nucleation and Growth, Indian Institute of Sciences,Bangalore, March 14-16, 1994.

37. Growth Kinetics of GaAs1-xPx Vapour Phase Epitaxy
N.Gopalakrishnan and R.Dhanasekaran
Proc. of Fifth National Seminar on Crystal Growth, Anna University, Chennai, Nov.18-20, 1993.

38. Nucleation and Growth Kinetics of InAs1-xPx Vapour Phase Epitaxy
N.Gopalakrishnan and R.Dhanasekaran
XXV National seminar on Crystallography, Dept. of Bio-physics and Crystallography, Univ. of
Madras, Dec.15-17, 1993.

39. Nucleation Kinetics of GaxIn1-xAs compound during Vapour Phase Epitaxial Growth
N.Gopalakrishnan, R.Dhanasekaran and P.Ramasamy.
XXIII National Seminar on Crystallography, MREC, Jaipur, March 23-25, 1992.

40. Development of Growth Kinetics of InP thin films during Vapour Phase Epitaxy
N.Gopalakrishnan, R.Dhanasekaran and P.Ramasamy
XXIV National Seminar on Crystallography,
Univ. Jammu, Oct.20-22, 1992.

<u>Details of the Conferences organized (2)</u>

1. Certificate Course on NDE Techniques during 01 - 05 June 2015 - ***Coordinator***

2. Workshop on Magnetic and Semiconductor Nanomaterials during 31 October to 01 November 2014 - ***Secretary***

3. Conducted Workshop on '**Advanced Coating Technologies and their Applications**' on 24 Jan. 2008. – ***Convener***

4. Conducted **'Workshop on Advances in Nanomaterials and Thin films (WANT-2013)'** during 08-09 March 2013. – ***Convener***