Staff Profile - Department of Applied Physics

Name: **Dr.M.HARIS**

Designation: Associate Professor

Office Address: Department of Applied Physics, Karunya Institute of Technology and Sciences, Karunya Nagar, Coimbatore – 641 114

E-mail: harismuthiah@karunya.edu, harismuthiah@gmail.com

Area of Specialization:

Research areas and interests (Brief write up about your research and interest of areas)

- Crystal Growth (III-V, II-VI) binary and ternary semiconductors
- High-energy irradiation studies of heavy ions on single crystal substrates
- Growth of InGaAs, InAsSb ternary crystals by sliding rotational Bridgman Technique
- Growth and Characterisation of InAsSb epitaxial layers
- Growth of inorganic and organic single crystals by solvent evaporation technique
- Growth of II-VI nano structured materials, thin films for gas sensing applications
- Preparation of metal oxide nanoparticles

Professional Experience: (21 Years)

Title of the Profession	**Employer**	**Duration**
Ph.D Scholar	Crystal Growth Centre, Anna University, Chennai	6 years
Scientist-D	Centre for Nanoscience and Nanotechnology, Sathyabama University, Chennai, India	13 months
Post-Doctoral fellow	Department of Chemical Engineering, Pohang University of Science and Technology (POSTECH), South Korea	4 months
Post-Doctoral fellow	Centre for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan R.O.C	12 months
Assistant Professor (S.G)	Department of Physics, Karunya Institute of Technology and Sciences, Coimbatore	3 years
Associate Professor	Department of Physics, Karunya Institute of Technology and Sciences, Coimbatore	9 years

*Countries visited***:**

Countries visited	**Period**	**Purpose**
Japan	April 2003-March 2005	Monbusho Research Scholar
South Korea	Feb 2007- June 2007	Post-Doctoral Fellow in Department of Chemical Engineering, POSTECH
Taiwan	June 2008-May 2009	Worked as a Postdoctoral Fellow in National Taiwan University.

Academic Qualification (List from highest to lowest degree)

Degree	**Board/University**	**Year of passing**	**Class/Grade**	**Subjects**
Doctor of Philosophy	Anna University	2007	Highly Commended	Crystal Growth
Master of Philosophy (Physics)	Annamalai University	2000	First	Crystal Growth
Master of Science (Physics)	Annamalai University	1998	First	Physics
Bachelor of Science (Physics)	Manonmaniam Sundaranar University	1996	First	Physics

Projects Guided

Ph.D			
Name of the Scholar/Student	**Title of the Project**	**Status (Completed/Pursuing)**	**Year of Ph.D Award**
Dr.V.Mathivanan	Investigations on solution and gel grown copper, iron and magnesium doped metal tartrte crystals	Completed	2014
Dr.T.Prasanyaa	Synthesis, growth and characterization of organic NLO L- Arginine trifluoro acetate single crystals	Completed	2014
Dr.S.J.Helen	Synthesis and characterization of undoped and doped spray pyrolysed CdO thin films for photoelectrode applications	Completed	2017
Dr.M.Rajendra Prasad	Surface modified nano crystalline ZnO thin films for room temperature gas sensor applications	Completed	2018
Dr.C.Saravanan	Investigations on gamma ray irradiated pure and doped potassium hydrogen phthalate crystals for scintillating applications	Completed	2021
Ms.E.Bruno	Preparation and Characterization of Cu based Metal Oxide Nanoparticles and its characterisation	Pursuing	Ongoing
Ms.Reeda Lenus	Analytical Modelling and Simulation of Tunnel Field Effect Transistors	Pursuing	Ongoing
Mr.E.Narayanan	Deposition and characterisation of V_2O_5/TiO_2 thin Films	Pursuing	Ongoing
Mr.Vivek Kumar	Gas sensing characteristics of V_2O_5/ZrO_2 nanostructured thin films	Pursuing	Ongoing
Mr.Daniel Lawrence	Tuning the morphology and properties of ZnO nanomaterials	Pursuing	Ongoing

M.Sc			
Name of the Scholar/Student	**Title of the Project**	**Status (Completed/Pursuing)**	**Year of M.Sc Award**
Ms. Manonmani Parvathi	Studies on Multistacked pure and aluminium doped ZnO thin films by spin coating process	Completed	2010
Ms. Elsa John	Synthesis, Growth and Characterisation of single crystal Gamma Glycine	Completed	2011
Mr.Ankit Raphael	Gas sensing characteristics of Zinc Oxide and doped Zinc Oxide thin film prepared by spin coating method	Completed	2012
Ms.Saravana Bala	Synthesis growth and characterization of pure and doped L-Tartaric acid Nicotinamide NLO single crystals	Completed	2013
Mrs.Rafeeka Jahir Hussain	Synthesis, characterization and effect of annealing of calcium titanate powders and thin films and an application of calcium titanate powders	Completed	2014
Mr.Toijan Sunder Meetei	Influence of annealing temperature on the structural and optical characteristics of spin coated ZrO_2 thin films on glass and ITO substrates	Completed	2014
Mr.Anandh Jesuraj	Thin film coating and characterization of nickel oxide and lithium doped nickel oxide films using sol-gel spin coating method	Completed	2014
Mr.Immanuel	Preparation and characterization of V_2O_5 Thin films using spray pyrolysis Technique	Completed	2015
Mr.Stanly Zachariah	A study on Dielectric properties of Ca_2MgTiO_5 by using LCR measurements	Completed	2017
Mr.Teiborlang	The study of Ratchet Effect	Completed	2017
Mr.Bankitboklang K.L Wanniang	Structural and Optical Characteristics of spray coated ZrO_2 thin films on glass substrate	Completed	2017
Mr.Jeebanjyoti Muduli	Production and characterization of amorphous silica nanoparticles from coconut shell and coir	Completed	2017
Mr.Robinson G	Deposition and characterization of Tin Oxide thin films prepare by spray pyrolysis	Completed	2018
Mr.Clement Joel	Preparation, characterisaiton and optical properties of pure and P-doped TiO_2 nanostructures of DSSC solar cell	Completed	2019
Mr. Magesh	Preparation and characterisation of pure and doped (Cu) TiO_2 nanoparticle for DSSC	Completed	2019
Mr. Sanjay	Structural and optical properties of Indium	Completed	2021

Kumar	doped nanocrystalline ZnO thin films		
Mr.M.Prabu	Growth and characterization of cerium chloride doped potassium hydrogen phthalate crystals	Completed	2021
Ms.Aashna Sharin	Synthesis and characterisation of ZnO and Sn doped ZnO nanoparticles	Completed	2021
Ms.Timple	Synthesis and characterisation of Lead doped (Pb) Zinc Oxide and pure Zinc oxide (ZnO) nanoparticles	Completed	2021
Guided projects for International students (Research)			
Dr.Amgalan Masgar	Nonlinear Optical Crystal Growth	Completed	2011
Dr.Amgalan Masgar	Nonlinear Optical Crystal Growth	Completed	2013
Dr. N'KONOU Kekeli David	ZnO thin films	Completed	2014
Dr.Mazabalo Paul Baneto	Elaboration and characterization of zinc oxide (ZnO) and tin oxide (SnO_2) nanostructured thin films for photovoltaic applications	Completed	2015
Mr.Sebastian Meyer	Zinc oxide thin films: optical enhancement made easy	Completed	2015
Dr. Adebisi Jeleel Adekunle	Production and Characterization of Silicon Nanoparticles from Selected Agro-Wastes for Solar Applications	Completed	2017
Dr. Amal Rherari	Preparation and characterization of transparent conductive thin films intended for photovoltaic cells and optique non linear properties	Completed	2017

Details of the Publications

BOOK CHAPTER PUBLISHED

1. **Crystal growth of ternary and quaternary alloy semiconductors by rotational Bridgman method**
   Yasuhiro Hayakawa, M.Haris, Masashi Kumagawa and Tetsuo Ozawa
   New Research on semiconductors, Nova Science Publishers, Inc.400 Oser Avenue, Suite 1600, Hauppauge, NY 11788, Editor: Thomas B.Elliot (2006) pp.1-30.
   ISBN: 1-59554-920-6
   https://www.novapublishers.com/catalog/product_info.php?products_id=4113

LIST OF INTERNATIONAL PUBLICATIONS (Scopus)

1. **Growth of InGaAs ternary bulk crystals by rotational Bridgman method**
   Y.Hayakawa, T.Ozawa, M.Araki, **M.Haris** and M.Kumagawa
   Journal of Crystal Growth, Vol.275 (2005) e421-e425.
   (Impact Factor: 1.797)
   https://doi.org/10.1016/j.jcrysgro.2004.11.013

2. **High energy Sn ion implantation induced effects on InSb substrates**
   M.Haris, P.Veeramani, P.Jayavel, Y.Hayakawa, D.Kanjilal and S.Moorthy Babu
   Nuclear Instruments and Methods B, Vol.244 (2006) 179-182.
   (Impact Factor: 1.377)
   http://dx.doi.org/10.1016/j.nimb.2005.11.026

3. **Investigation of swift heavy ion irradiation effects in CdTe crystals**
   P.Veeramani, **M.Haris**, D.Kanjilal, K.Asokan and S.Moorthy Babu
   J. Phys. D: Appl. Phys., Vol.39 (2006) 2707-2710.
   (Impact Factor: 3.207)
   http://dx.doi.org/10.1088/0022-3727/39/13/012

4. **Growth and characterization of $InAs_xSb_{1-x}$ bulk crystals and growth rate measurements**
   M. Haris, P.Veeramani, P.Jayavel, Y.Hayakawa and S.Moorthy Babu
   Materials and Manufacturing Processes Vol.22 (2007) 404-408.
   (Impact Factor: 4.616)
   https://doi.org/10.1080/10426910701191038

5. **Investigation of $CdTe_x$ and $Cd_{1-x}Zn_xTe$ Schottky diode structure based γ–ray detectors**
   P.Veeramani, **M.Haris** and S.Moorthy Babu
   Materials and Manufacturing Processes Vol.22 (2007) 375-378.
   (Impact Factor: 4.616)
   https://doi.org/10.1080/10426910701190873

6. **Study on the Effect of Nitrogen-Ion Implantation in Semi-Insulating InP by Using Scanning Tunneling Microscopy**
   P.Jayavel, **M.Haris**,Y.Hayakawa, K.Santhakumar, C.R.Lee, T.Soga and K.Asokan
   Journal of Korean Physical Society Vol.51 (2007) 585-588.
   (Impact Factor: 0.649)
   http://www.jkps.or.kr/journal/view.html?uid=8822&vmd=Full

7. **Investigation of Modified Bridgman Grown $CdTe_x$ Crystals and Their Characterization**
   P.Veeramani, **M.Haris**, and S.Moorthy Babu
   Materials and Manufacturing Processes Vol.23 (2008) 484–488.
   (Impact Factor: 4.616)
   https://doi.org/10.1080/10426910802103965

8. **Investigation of swift heavy ion irradiation effects on Au/CdTe and Au/CdZnTe Schottky barrier diode**
P.Veeramani, **M.Haris**, S.Moorthy Babu, D.Kanjilal, P.Sugathan
Radiation Measurements Vol.43 (2008) 56-61.
(Impact Factor: 1.898)
http://dx.doi.org/10.1016/j.radmeas.2007.10.030

9. **Structural, Compositional and Optical analysis of $InAs_xSb_{1-x}$ crystals grown by Vertical Directional Solidification Method**
M.Haris, Y.Hayakawa, F.C.Chou, P.Veeramani and S.Moorthy Babu
Journal of Alloys and Compounds Vol.548 (2013) 23-26.
(Impact Factor: 5.316)
http://dx.doi.org/10.1016/j.jallcom.2012.08.115

10. **Studies on solution-grown pure and doped Sodium Potassium tartrate crystals**
V.Mathivanan and **M.Haris**
Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy. Vol.102 (2013) 341-349.
(Impact Factor: 4.098)
http://dx.doi.org/10.1016/j.saa.2012.10.033

11. **Antimicrobial activity and second harmonic studies on organic non-centro symmetric pure and doped Ninhydrin single crystals**
T.Prasanyaa, V.Jayaramakrishnan and **M.Haris**
Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy. Vol.104 (2013) 110-113.
(Impact Factor: 4.098)
http://dx.doi.org/10.1016/j.saa.2012.11.047

12. **Characterization of pure and copper-doped iron tartrate crystals grown in silica gel**
V.Mathivanan and **M.Haris**
Pramana Journal of physics. Vol.81 (2013) 177-187.
(Impact Factor: 2.219)
https://doi.org/10.1007/s12043-013-0564-x

13. **Investigation on sodium potassium bitartrate crystals grown in silica gel and its characterization**
V.Mathivanan and **M.Haris**
Optik-International journal for light and electron optics. Vol.124 (2013) 4614-4617
(Impact Factor: 2.443)
http://dx.doi.org/10.1016/j.ijleo.2013.01.101

14. **Synthesis, Optical, Thermal and Second Harmonic Generation studies of pure, urea and thiourea doped organic L-Tartaric Acid–Nicotinamide (LTN) crystals**
T.Prasanyaa, V.Jayaramakrishnan and **M.Haris**
Optik-International journal for light and electron optics. Vol.125 (2014) 732-736
(Impact Factor: 2.443)
http://dx.doi.org/10.1016/j.ijleo.2013.07.045

15. **Synthesis, characterization and anti-microbial activity of pure, Cu^{2+} and Cd^{2+} doped organic NLO L-arginine trifluoroacetate single crystals**
T.Prasanyaa, V.Jayaramakrishnan and **M.Haris**
Physica Scripta Vol. 88 (October 2013) 045403, pp.1-6.
(Impact Factor: 2.487)
http://iopscience.iop.org/article/10.1088/0031-8949/88/04/045403

16. **Influence of organic dyes on the thermal, mechanical and optical properties of l-arginine trifluoroacetate (LATF) single crystals**
T.Prasanyaa, **M.Haris**, V.Mathivanan, M.Amgalan and V.Jayaramakrishnan
Journal of thermal analysis and calorimetry Vol.117 (July 2014) 285 – 291.
(Impact Factor: 4.626)
http://link.springer.com/article/10.1007%2Fs10973-014-3724-4

17. **Synthesis and characterization of gel-grown cobalt tartrate crystals**
V.Mathivanan, **M. Haris**, T. Prasanyaa and M.Amgalan
Pramana Journal of physics. Vol.82 (2014) 537-548.
(Impact Factor: 2.219)
http://www.ias.ac.in/pramana/v82/p537/fulltext.pdf

18. **Growth and characterization study of ammonium dihydrogen phosphate, potassium dihydrogen phosphate single crystals**
M.Amgalan, T.Prasanyaa, **M.Haris** and G.Batdemberel
IEEE 8th International Forum on Strategic Technology (IFOST), 2013
Vol.1 (2013) 87-90
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6616952

19. **Synthesis and characterization of pure, urea and thiourea doped organic NLO L-arginine trifluoroacetate single crystals**
T.Prasanyaa, **M.Haris**, V.Mathivanan, M.Senthilkumar, T.Mahalingam and V.Jayaramakrishnan
Materials Chemistry and Physics Vol.147 (2013) 433-438.
(Impact Factor : 4.094)
http://www.sciencedirect.com/science/article/pii/S0254058414003101

20. **Structural, compositional, optical, thermal and magnetic analysis of undoped, coper and iron doped potassium hydrogen tartrate crystals**
V.Mathivanan and **M.Haris**
Indian journal of pure and applied physics Vol. 51, December 2013, pp. 851-859
(Impact Factor: 0.923)
http://nopr.niscair.res.in/handle/123456789/24371

21. **Structural, magnetic, dielectric and thermal analysis of gel grown pure and doped cadmium tartrate crystals**
V.Mathivanan, **M.Haris**, T. Prasanyaa, M.Amgalan, M.Senthilkumar
Optik-International journal for light and electron optics. 2013. Vol.125 (18), 5153-5159
(Impact Factor: 2.443)
http://www.sciencedirect.com/science/article/pii/S0030402614006883

22. **Growth and birefringence studies of semi organic non-linear optical LHB single crystal**
V.Jayaramakrishnan, T.Prasanyaa, **M.Haris** and G.Bhoopathi,
IOP Conf. Series: Materials Science and Engineering 73, 012136
http://iopscience.iop.org/article/10.1088/1757-899X/73/1/012136/pdf

23. **Effect of barium doping on structural and optical properties of zinc oxide nanoparticles synthesized by microwave hydrothermal method**
Kekeli N'Konou, **Muthiah Haris**, Yendoubé Lare, Mazabalo Baneto, Kossi Napo and Philippe Torchio
Physica Status Solidi Volume 253, Issue 2, pages 260–266, February 2016
(Impact Factor: 1.710)
http://onlinelibrary.wiley.com/doi/10.1002/pssb.201552177/abstract

24. **Thermal, magnetic, dielectric and anti-microbial properties of solution-grown pure and doped sodium potassium tartrate crystals**
V Mathivanan, **M Haris**, J Chandrasekaran
Optik-International journal for light and electron optics. Vol.127 (4), (2016) 1804-1808
(Impact Factor: 2.443)
https://doi.org/10.1016/j.ijleo.2015.11.092

25. **Experimental investigation of the structure, magnetic moment and decomposition process on heating in dipotassium tartarte crystals grown in chemical reaction gel method**
V Mathivanan, **M Haris**, J Chandrasekaran
Optik-International journal for light and electron optics. Vol.127 (9), (2016) 3892-3895
(Impact Factor: 2.443)
https://doi.org/10.1016/j.ijleo.2016.01.062

26. **Effect of barium doping on the physical properties of zinc oxide nanoparticles elaborated via sonochemical synthesis method**
Kekeli N'Konou, **M.Haris**, Yendoubé Lare, Mazabalo Baneto and Kossi Napo
Pramana Journal of physics. Vol.87 (1) (2016) 1-7.
(Impact Factor: 2.219)
https://doi.org/10.1007/s12043-016-1208-8

27. **Synthesis, characterization and magnetic studies of uniform sized manganosite nanocrystals**
J.S.Sherin, **M.Haris**, Shiney Manoj, J.K.Thomas
Materials Today Proceedings, Vol.4 (2017) 4403-4411
Impact Factor: Nil
https://doi.org/10.1016/j.matpr.2017.04.012

28. **Structural, optical and ammonia sensing properties of nanostructured ZnO thin films deposited by spray pyrolysis technique.**
M.Rajendra Prasad, **M.Haris**, M.Sridharan
Journal of Materials Science: Materials in Electronics. Vol.28 (15) (2017) 11367 – 11373
(Impact Factor: 2.478)
https://doi.org/10.1007/s10854-017-6930-6

29. **Structural and optical characterization of (Sn/Li) co-doped ZnO thin films deposited by spray pyrolysis technique**
A Rherari, M Addou, **M Haris**
Journal of Materials Science: Materials in Electronics. Vol.28 (21) (2017) 15762-15767
(Impact Factor: 2.478)
https://doi.org/10.1007/s10854-017-7469-2

30. **Structural, optical and magnetic properties of Ba and Ni doped CdS thin films prepared by spray pyrolysis method**
R.Murugesan, S.Sivakumar, P.Anandan, **M.Haris**
Journal of Materials Science: Materials in Electronics. Vol.28 (17) (2017) 12432–12439
(Impact Factor: 2.478)
https://doi.org/10.1007/s10854-017-7064-6

31. **NH_3 sensing properties of surface modified Ce-doped nanostructured ZnO thin films prepared by Spray Pyrolysis method**
M.Rajendra Prasad, **M.Haris**, M.Sridharan
Sensors and Actuators A: Physical Vol.269 (2018) 435– 443
(Impact Factor: 3.407)
https://doi.org/10.1016/j.sna.2017.11.045

32. **Transparent Conducting Mo-Doped CdO Thin Films by Spray Pyrolysis Method for Solar Cell Applications**
S.J.Helen, Suganthi Devadason, **M.Haris**, T.Mahalingam
Journal of Electronic Materials. Vol.47 (4) (2018) 2439-2446
(Impact Factor: 1.938)
https://link.springer.com/article/10.1007/s11664-018-6079-y

33. **Investigation on Structural, Morphological, Optical and Ammonia Sensing Properties Indium Doped Nano Crystalline ZnO Thin Films Synthesized by Spray Pyrolysis Technique**
M.Rajendra Prasad, **M.Haris**, M.Sridharan
Sensing and Imaging. Vol.19 (28) (2018) 1-14
(Impact Factor: 1.160)
https://doi.org/10.1007/s11220-018-0211-1

34 **Synthesis of silicon nanoparticles from cassava periderm by reduction method**
Agunsoye J O, Adebisi J.A, Bello S.A, **Haris M**, Agboola J.B, Hassan S.B.
Materials Science and Technology 2018, MS and T 2018-2019, Pages 701-709.
10.7449/2018/MST_2018_701_709

35. **Structural, optical and magnetic behaviors of Fe/Mn-doped and co-doped CdS thin films prepared by spray pyrolysis method**
R.Murugesan, S.Sivakumar, K.Karthik, P.Anandan, **M.Haris**
Applied Physics A: Materials science and Processing Vol.125 (4) (2019) 281.
(Impact Factor: 2.584)
https://doi.org/10.1007/s00339-019-2577-x

36. **Green production of silica nanoparticles from maize stalk**
Jeleel Adekunle Adebisi, Johnson Olumuyiwa Agunsoye, Sefiu Adekunle Bello, **Muthiah Haris**, Mercy Munyadziwa Ramakokovhu, Michael Olawale Daramola & Suleiman Bolaji Hassan (2019)
Particulate Science and Technology, Vol. 38 (6) (2020) 667-675
Impact Factor: 2.356
https://doi.org/10.1080/02726351.2019.1578845

37. **Effect of Mg/Co on the properties of CdS thin films deposited by spray pyrolysis technique**
R.Murugesan, S.Sivakumar, K.Karthik, P.Anandan, **M.Haris**
Current Applied Physics, Vol.19 (2019) 1136-1144
Impact Factor: 2.480
https://doi.org/10.1016/j.cap.2019.07.008

38. **Production of Silicon Nanoparticles from Selected Agricultural Wastes**
J.A.Adebisi, J.O.Agunsoye, I.I.Ahmed, S.A.Bello, **M.Haris**, M.M.Ramakokovhu, S.B.Hassan
Materials Today Proceedings, Vol. (2020)
Impact Factor:Nil
https://doi.org/10.1016/j.matpr.2020.03.658

39. **Structural, morphological, optical and magnetic properties of sprayed NiO thin films by perfume atomizer**
S.Visweswaran, R.Venkatachalapathy, **M.Haris**, R.Murugesan
Applied Physics A: Materials science and Processing Vol.126 (2020) 524.
(Impact Factor: 2.584)
https://doi.org/10.1007/s00339-020-03709-w

40. **Characterization of MgO thin film prepared by spray pyrolysis technique using perfume atomizer**
S.Visweswaran, R.Venkatachalapathy, **M.Haris**, R.Murugesan
Journal of Materials Science: Materials in Electronics. Vol.31 (2020) 14838–14850
(Impact Factor: 2.478)
https://doi.org/10.1007/s10854-020-04046-7

41 **Gamma ray irradiation and characterization on urea and thiourea doped potassium hydrogen phthalate (KHP) crystals**
C Saravanan, M Haris, M Senthilkumar, V Mathivanan
Optik-International journal for light and electron optics. Vol.28 (2020) 165259
(Impact Factor: 2.443)
https://doi.org/10.1016/j.ijleo.2020.165259

42 **Structural, optical, and mechanical properties of gamma beam-irradiated pure and $CeCl_3$-doped potassium hydrogen phthalate (KHP) crystals for scintillating applications**
C Saravanan, M Haris, M Senthilkumar, V Mathivanan
Journal of Materials Science: Materials in Electronics. Vol.31 (2020) 21368–21378
(Impact Factor: 2.478)
https://doi.org/10.1007/s10854-020-04649-0

43 **Formation of self-assembled hierarchical structure on Zn doped in CuO nano particle using a microwave-assisted chemical precipitation approach**
E Bruno, M Haris, A. Mohan, M Senthilkumar
Journal of Materials Science: Materials in Electronics. Vol. 32, (2021) 19339–19351
(Impact Factor: 2.584)
https://doi.org/10.1007/s10854-021-06452-x

44 **Preparation and characterization of Fe doped n-hydroxyapatite for biomedical application**
Suja Jose, M Senthilkumar, K Elayaraja, M Haris, Amal George, A Dhayal Raj, S John Sundaram, AKH Bashir, M Maaza, K Kaviyarasu
Surfaces and Interfaces.Vol.25 (2021) 101185
(Impact Factor: 4.837)
https://doi.org/10.1016/j.surfin.2021.101185

Participation/presentation in Workshop/Seminar/Conference/Symposium/Colloquium

LIST OF NATIONAL PUBLICATIONS / PROCEEDINGS

1. Studies on vertical Bridgman grown Indium Antimonide for sensor applications
M. Haris, S. Moorthy Babu and R. Dhanasekaran
Sensor Technology, Vol.1 (2002) p.301-304.
(Conference Proceeding)

2. Effect of Swift heavy ion irradiation induced modifications in CdTe crystal
P. Veeramani, M. Haris and S. Moorthy Babu
Proceeding of Fifth DAE-BRNS, National Laser Symposium, Vol.5 (2005) 201-202.

3. Investigation of Swift heavy ion irradiation effect on Au/CdZnTe/In detector
Perumal Veeramani, M. Haris, P. Sugathan, D. Kanjilal, K. Asokan and S. Moorthy Babu
IEEE Nuclear Science Symposium Conference Record, (2008) 357-361.

4. Characterization of pure and doped potassium hydrogen tartrate crystals grown in silica gel
V.Mathivanan and M.Haris
Crystal growth and computational materials science, Macmillan publishers India, Ltd. Advanced Research series (2011) 115-118. (ISBN 978-935-059-048-5)

5. Synthesis and characterization of organic NLO L-Arginine Trifluoroacetate (LATF) added L-Tartaric acid single crystals
T.Prasanyaa and M.Haris
Advanced Materials and its applications Macmillan publishers India, Ltd. Advanced Research series (2011) 115-118. (ISBN 978-81-921249-0-2)

6. Growth and Characterization study of Ammonium Dihydrogen Phosphate, Potassium Dihydrogen Phosphate single crystals
M.Amgalan, T.Prasanyaa and M.Haris
Synergy, IAESTE series, Karunya institute of Technology and Sciences (2012) 18-23.

7. Tuning the physical properties of sprary pyrolysed nanocrystalline CdO thin films by varying the substrate temperature
T Mahalingam S J Helen, Suganthi Devadason, M.Haris
Proceedings of the international conference on recent innovations in production engineering, MIT, Anna University
143-144

8. Linear and Non Linear Optical Parameters of TZO Thin Films Prepared by Spray Pyrolysis Technique
A. Rherari, M. Haris, M. Addou, A. Bougrine, M. El Jouad
International Journal of Engineering Research & Technology (IJERT) Vol.5, 15, 32-35

9. Structural and Optical Properties of Pure Nio and Li-Doped Nickel Oxide Thin Films by Sol-Gel Spin Coating Method
S Anandh Jesuraj, M Haris, P Immanuel
International Journal of Science and Research. Vol.10 (2014) 85-87

10. Influence of Annealing Temperature on the Structural and Optical Characteristics of Spin Coated ZrO_2 Thin Films on Glass and ITO Substrates
Toijam Sunder Meetei, M Haris
International Journal of Innovative Research in Science & Engineering (2014) 2347-3207

11. Effect of precursors on the structural and optical properties of spray pyrolysis coated CdS thin films
R.Murugesan, S.Sivakumar, M.Haris
International Journal of Technical Research and Applications
Vol.38 (2016) 20-23.

12. Characterization of nanostructured MnO synthesized by modified combustion technique.
Sherin J.S, Haris M, Manoj D.Shiney, Thomas J.K.
International Journal of Research in Engineering and Applied Sciences
Vol.7 (1) (2017) 118-127.

13. Enhanced electrochemical properties in nanostructured β-MnO2 synthesized through a single step auto-igniting modified combustion technique.
Sherin J.S, Haris M, Manoj D.Shiney, Koshy. J, Thomas J.K.
International Journal of ChemTech Research
Vol.10 (3) (2017) 647-655.

14. Effect of Concentration of Cadmium Acetate and Thiourea on CdS Thin Films and their Characterization
R. Murugesan, S. Sivakumar , K. Karthik , P. Anandan , M. Haris
International Journal for Research in Applied Science & Engineering Technology
Vol.6 (2018) 1-6.

PAPERS PRESENTED IN INTERNATIONAL CONFERENCES

1. Crystal growth of InSb with stoichiometry control
M. Haris and S. Moorthy Babu
International Conference on Crystal Growth-13 / International Conference on Vapour Growth and Epitaxy -11 held at Doshisha University, Kyotanabe city, Kyoto, Japan during July 30-August 4, 2001.

2. Influence of Sn irradiation on the properties of off-stoichiometric melt grown InSb crystals
M. Haris and S. Moorthy Babu
International Conference on Crystal Growth-14/International Conference on Vapour Growth and Epitaxy-12 held at Grenoble, France during August 9-13, 2004.

3. Growth of InGaAs bulk crystals by rotational Bridgman method
Y. Hayakawa, T. Ozawa, M. Araki, M. Haris and M. Kumagawa
International Conference on Crystal Growth-14 / International Conference on Vapour Growth and Epitaxy -12 held at Grenoble, France during August 9-13, 2004.

4. Effect of As alloying in InSb bulk crystals grown by Vertical Bridgman Method
M. Haris, P. Jayavel, Y. Hayakawa and S. Moorthy Babu
3rd Asian conference on Crystal Growth and Crystal Technology (CGCT-3) held at Beijing, China during 16-19 October 2005.

5. Characterisation and Growth rate measurements of $InAs_xSb_{1-x}$ crystals
M. Haris, P. Veeramani, Y. Hayakawa and S. Moorthy Babu
3rd Asian conference on Crystal Growth and Crystal Technology (CGCT-3) held at Beijing, China during 16-19 October 2005.

6. Growth of $CdTe_x$ and $Cd_{1-x}Zn_xTe$ single crystals for Detector Application
P. Veeramani, M. Haris and S. Moorthy Babu
3rd Asian conference on Crystal Growth and Crystal Technology (CGCT-3) held at Beijing, China during 16-19 October 2005.

7. Growth of $Cd_{1-x}Zn_xTe$ single crystals and Investigation of $Au/Cd_{1-x}Zn_xTe/In$ Schottky barrier diode structure based high energy g–ray detectors
P.Veeramani, S.Moorthy Babu, M.Haris and K.Asokan
International Conference On Crystal Growth-15 / International Conference On Vapour Growth And Epitaxy -13/ The US Biennial Workshop on Organometallic Vapor Phase epitaxy held at Salt Lake City, Utah, USA during August 12-17, 2007.

8. Bridgman Growth and Characterisation of GaSb and $InAs_xSb_{1-x}$ crystals
M.Haris, S.Moorthy Babu, Y.Hayakawa and P.Veeramani
International Conference On Crystal Growth-15 / International Conference On Vapour Growth And Epitaxy-13/The US Biennial Workshop on Organometallic Vapor Phase epitaxy held at Salt Lake City, Utah, USA during August 12-17, 2007.

9. Synthesis and characterization of organic NLO L-arginine Trifluoroacetate (LATF) added L-tartaric acid single crystals
T.Prasanyaa and M.Haris
International conference on Advanced materials and its applications (ICAMA-2011) held at Kalasalingam University during March 4-5, 2011.

10. Optical and structural properties of pure and doped potassium hydrogen tartrate crystls grown in silica gel
V.Mathivanan and M.Haris
International Conference on Advanced Materials-ICAM 2011 held at PSG college of Technology, Coimbatore, India during December 12 – 16, 2011.

11. Synthesis and Characterization of Pure and doped L-tartaric acid-Nicotinamide (LTN) Single crystals
T.Prasanyaa and M.Haris
International Conference on Advanced Materials – ICAM 2012 held at Loyola College, Chennai during January 5-7, 2012.

12. Structural, Optical, mechanical and SHG studies on growth of pure and dyes doped L-Tartaric acid-Nicotinamide (LTN) single crystals
T. Prasanyaa and M.Haris
International conference on Recent Trends in Advanced Materials – ICRAM 2012 during February 20-22, 2012.

13. Influence of annealing temperature on the structural and optical characteristics of spin coated ZrO_2 thin films on glass and ITO substrates
Toijam sunder Meetei and M.Haris
International conference on Advanced Materials – ICAN 2014 during 20-21 June, 2014.

14. Structural and optical properties of pure nio and li-doped nickel oxide thin films by sol-gel spin coating method
S. Anandh jesuraj, M.Haris and P.Immanuel
Advanced Technology Oriented Materials (ATOM-2014) during 8-9th December, 2014.

PAPERS PRESENTED IN NATIONAL CONFERENCES

1. Growth of InSb crystals from Non-stoichiometric melts
   M.Haris, Premila Mohan, S. Moorthy Babu and P. Ramasamy
   Symposium on Fundamentals on Crystal Growth held at Crystal Growth Centre, Anna University, Chennai during November, 6- 7, 2000.

2. Chemical etching studies on off-stoichiometric melt grown InSb crystals
   M. Haris and S. Moorthy Babu
   National conference on Crystal Growth and Characterisation held at Physics Research Centre, S.T. Hindu College, Nagercoil during 22-23, March 2001.

3. Chemical etching studies and microhardness measurements on off-stoichiometric melt grown InSb crystals
   M. Haris and S. Moorthy Babu,
   National Seminar on Current Trends in Materials Science held at School of Pure and Applied Physics, Mahatma Gandhi University, Kottayam during 23-24, March 2001.

4. Studies on Vertical Bridgman grown Indium Antimonide for sensor applications
   M. Haris, S. Moorthy Babu and R. Dhanasekaran
   National Conference on Sensor Technology held at DRDO, New Delhi, during September 26-27, 2002.

5. Optical and electrical properties of tin doped indium antimonide
   M. Haris, S. Moorthy Babu and R. Dhanasekaran,
   National Seminar on Recent Trends in Optoelectronic Materials and Devices held at Sri Venkateswara University, Tirupati during 21 – 22 November 2002.

6. Hall effect and EPMA characterization of Non-stoichiometric InSb crystals
   M. Haris, Y. Hayakawa and S. Moorthy Babu
   Ninth National Seminar on Crystal Growth held at Crystal Growth Centre, Anna University, Chennai during February 24-26, 2003.
7. Growth and characterization of GaSb/GaSb single crystals
   M. Haris, Y. Hayakawa and S. Moorthy Babu
   National Symposium on crystal growth and characterization held at Loyola College, Chennai, Tamilnadu, India during September 29-30, 2005.

8. Effect of Swift heavy ion irradiation induced modifications in CdTe crystal
   P. Veeramani, M. Haris and S. Moorthy Babu
   Fifth DAE-BRNS National Laser Symposium held at Vellore Institute of Technology, Vellore, TamilNadu during December 7-10, 2005.

9. Studies on Multistacked Pure and Aluminium doped ZnO thin films by Spin Coating Process
   M.Manonmani Parvathi and M.Haris
   National Conference on Nano materials held at Department of Physics, Karunya institute of technology and sciences, Coimbatore during December 3-4, 2010

10. Optical and structural properties of pure and doped Sodium Potassium tartrate crystals
V.Mathivanan and M.Haris
National conference on "Modern trends in Science and Technology" MTST-11 held at Dr. M.V. Shetty Institute of Technology, Thodar, Moodbidri, Mangalore -574 225, Karnataka during October 14-15, 2011.

11. Growth and Characterization of pure and doped Rochelle salt crystals
V.Mathivanan and M.Haris
National conference on Recent trends in materials science - 2011 (NCRTMS-2011) held at K.S. Rangasamy college of Technology,Tiruchengode -637 215, Namakkal District, Tamil Nadu, India during November 11-12, 2011.

12. Synthesis and characterization of pure and dyes doped L-Tartaric acid Nicotinamide (LTN) single crystals
T.Prasanyaa and M.Haris
National conference on "Modern trends in Science and Technology" MTST-11 held at M.V. Shetty Institute of Technology, Mangalore, Karnataka during October 14-15, 2011.

13. Structural, Thermal, SHG and Mechanical Investigation of semiorganic NLO L-Arginine Trifluoroacetate (LATF) added ADP single crystals
T. Prasanyaa and M.Haris
National Seminar on Advanced Materials:Processing and applications – NSAMPA 2012 held at Department of Physics, Bharathiar University during 29-30 March 2012.

14. Growth & Characterization of L-Arginine Trifluoroacetic acid (LATF) added ADP single crystals
M.Amgalan, T.Prasanyaa and M.Haris
National conference on "Modern trends in Science and Technology" MTST-11 held at M.V. Shetty Institute of Technology, Mangalore, Karnataka during October 14-15, 2011.

15. Structural and optical analysis of NiO thin films coated on glass substrates
S.Anandh Jesuraj and M.Haris
National Conference in "Advanced Materials and its Applications" NCAMA – 2014 held at Faculty of Engineering and Technology, Annamalai University, Chidambaram during April 4-5, 2014.

16. Effect of annealing temperature on the structural and optical properties of $CaTiO_3$ nanopowders and thin films
Rafeeka Jahir Hussain and M.Haris
National Conference in "Advanced Materials and its Applications" NCAMA – 2014 held at Faculty of Engineering and Technology, Annamalai University, Chidambaram during April 4-5, 2014.

17. Influence of annealing temperature on the structural, electrical and optical characteristics of spin coated ZrO_2 thin films on glass substrates
Toijam sunder Meetei and M.Haris

National Conference in "Advanced Materials and its Applications" NCAMA – 2014 held at Faculty of Engineering and Technology, Annamalai University, Chidambaram during April 4-5, 2014.

18. Hydrothermal Synthesis of Single Phase ZrO2 Nano Crystals: Structural and Optical Studies.
Rajendra Prasad M and M.Haris
National Conference on Emerging Trends of Advanced Functional Materials – NCAFM, 2015 held at KL University, Guntur District, Andhra Pradesh during 3rd and 4th September 2015.

19. Effect of solvent volume on the structural and optical properties of nanocrystalline ZnO thin films using Spray pyrolysis method.
Rajendra Prasad M and M.Haris
National Conference on "Recent Advances in applied sciences (RAAS-2016) held at AMC engineering college, Bengaluru on 25th April 2016.

20. Effect of Aluminium, Copper and Tin as dopants on ZnO thin films.
M.Haris and M.Manonmani parvathi
National Conference on Processing and Characterization of Materials (NCPCM 2012) held at National Institute of Technology, Rourkela during December 7th – 8th, 2012.

PAPERS PRESENTED IN INTERNATIONAL WORKSHOPS

1. High energy Sn ion implantation induced effects on InSb substrates
M.Haris, P. Veeramani,P. Jayavel,Y. Hayakawa, D. Kanjilal and S. Moorthy Babu
Indo-German workshop on Synthesis and modification of nanostructures materials by energetic ion beams held at Nuclear science centre, New Delhi, India during February 20-24, 2005.

2. On the Effect of Nitrogen Ion Implanted Semi-Insulating InP by Scanning Tunneling Microscopy
P. Jayavel, K. Santhakumar, M.Haris, Y. Hayakawa, T. Soga and K. Asokan
Indo-German workshop on Synthesis and modification of nanostructures materials by energetic ion beams held at Nuclear science centre, New Delhi, India during February 20-24, 2005.

CONFERENCES/WORKSHOPS ATTENDED

1. Two days National workshop on "Nanomaterials for Energy Applications" held at Department of Nanotechnology, Regional Campus (Coimbatore), Anna University during 18 - 19th February 2016

2. Two days workshop on "Advanced Instrumental methods for engineering materials" held at Department of Physical Sciences, Bannari Amman Institute of Technology, Sathyamangalam during 18 – 19th October 2014

3. National conference on Advanced Functional Materials (NCAFM-2015) held at Department of Physics, SRM University, Vadapalani, Chennai during May 8-9, 2015.

4. National Workshop on Luminescent Materials (NWLM 2016) held at GRD centre for Materials Research, PSG college of technology, Coimbatore on February 26th, 2016.

5. Faculty Development Programme on "Changing Scenario on Materials Research" held at Department of Physics & IRC, Kalasalingam University, Srivilliputtur during June 08th – 12th 2015.

6. One week short term course under Quality improvement programme on "Advances in new engineering materials" held at Department of Physics, Coimbatore Institute of Technology during November 23rd – 29th, 2015.

7. One day seminar on "Applications of Light in Science and Technology (IYL-15) held at Department of Science and Humanities, Kumaraguru college of Technology, Coimbatore on December 04th, 2015.

8. Research seminar on "Strain driven self-assembled semiconductor nanostructures" held at Department of Science and Humanities and Centre for Research in nanotechnology, Karunya institute of technology and sciences on November 2nd 2016.

9. Workshop on improving effectiveness of teaching and quality of education held at Department of Science and Humanities, Karunya institute of technology and sciences, Coimbatore on June 24th, 2016.

10. National Level workshop on thin film coating and characterization techniques held at Department of Physics, Karunya Univeristy on May 6th, 2015.

11. As a Resource person in the Research Convention entitled "Research Ethics, Methods and Post Research Methods held at Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore during 18th – 20th February 2016.

12. Workshop on "Nuclear Chemistry and Radio isotopes detection" held at Department of Chemistry and Department of Nanotechnology, Karunya institute of technology and sciences, Coimbatore during 23rd – 24th August 2013.

13. National Conference on Nanomaterials held at Department of Physics, Karunya institute of technology and sciences Coimbatore during 3rd – 4th December 2012.

14. Faculty pedagogy training programme held at Karunya institute of technology and sciences from June 23rd to 26th, 2009.

15. One day workshop on "Effective teaching" held at School of Science and Humanities, Karunya institute of technology and sciences, Coimbatore on 25th November 2009.

16. 3rd National workshop on "Theory and Practice of Advanced Techniques for the characterization of Nanomaterials" held at Department of chemistry & applied chemistry on January 24th – 25th, 2013.

17. One day National level workshop on "Recent trends in solar thermal systems towards sustainable development" held at School of Mechanical Sciences, Karunya institute of technology and sciences, Coimbatore on 2nd August 2013.

18. Workshop on "Elemental, compound and phase analysis by powder X-ray diffraction" held at Department of Physics, National Institute of Technology, Trichy during 19th – 20th September 2014.

19. National Conference on Advances in Materials (AIM 2014) held at Advanced Materials Research Division, University college of Engineering, Nagercoil on 7th October 2014.

20. National Level seminar on Recent Advancement in Physics (NLSRAP-2015) held at PG & Research Department of physics, Vriddhachalam on 21st February 2015.

21. National conference in Advanced Materials and its Applications (NCAMA-2014) held at Faculty of Engineering and Technology during 4th – 5th April 2015.

22. Fourth National workshop on Instrumentation techniques in Physics (PINTECH 2015) held at Department of Physics, Kanchipuram on November 6th, 2015.

23. International workshop on Advanced Materials (IWAM-2014) held at School of Physics, Alagappa University, Karaikudi during March 20th – 21st 2014.

Details of the funded projects

Title of the Project	Funding Agency	Duration	Status
Nonlinear Optical Crystal Growth	DST-RTF-DCS	6 months	Completed
ZnO thin films	DST-RTF-DCS	6 months	Completed
Production and Characterization of Silicon Nanoparticles from Selected Agro-Wastes for Solar Applications	DST-RTF-DCS	6 months	Completed
Preparation and characterization of transparent conductive thin films intended for photovoltaic cells and optique non linear properties	DST-RTF-DCS	6 months	Completed
Elaboration and characterization of zinc oxide (ZnO) and tin oxide (SnO_2) nanostructured thin films for photovoltaic applications	INSA-TATA-JRD	2 months	Completed

Awards and Fellowships received

July 2001- March 2003

Worked as a Project Assistant in an UGC project entitled "Fast growth of CdTe and related compounds for device applications (Dr.S.Moorthy Babu-Principal Investigator)" in Crystal Growth Centre, Anna University, Chennai

April 2003 – March 2005

Awarded the Japanese Government fellowship (Monbusho Fellowship) through Ministry of Human Resource Development, Government of India for the year 2003 and carried out research work in optoelectronic semiconductor crystal growth field in Research Institute of Electronics (Dr.Yasuhiro Hayakawa – Host Professor), Shizuoka University, Hamamatsu, Japan 432-8011

Academic and Administrative responsibilities

1. M.Sc Physics Academic Co-ordinator (Board of Studies Member)

2. M.Sc Physics Admissions Co-ordinator

3. Karunya Entrance Examinations Co-ordinator

4. PG students Mentor.

Reviewer in Journals

Material Science and Engineering B
Spectrochimica Acta A: Molecular and Bio-molecular spectroscopy
Journal of Thermal analysis and Calorimetry
Physica B
Zeitschrift für Naturforschung A
Physica Scripta