

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

Curriculum Vitae



Dr. Santhosh Kumar M. C. received his Ph.D. from Cochin University of Science And Technology (CUSAT), Cochin, India in 2003 in the field of semiconductor thin films. He has more than 16 years of teaching experience at UG and PG level. He was a visiting researcher at Korea Advanced Institute of Science and Technology (KAIST), South Korea. He has visited USA, Australia and Singapore for International Conference presentations. His current research interests are in Optoelectronic materials, thin film solar cells and nanomaterials. He has guided five Ph.Ds and nine Ph.D students are working under his guidance. He has two major DST sponsored research projects and several minor projects from INUP, TEQIP and MHRD. He has published more than 65 International papers in reputed journals.

1. Name: Dr. Santhosh Kumar M.C.
2. Designation: Associate Professor
3. Office Address: Department of Physics
National Institute of Technology,
Tiruchirappalli, Tamil Nadu, India
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Telephone : Extn (Optional):
Mobile (Optional):
5. Email (Primary): santhoshmc@nitt.edu Email (Secondary) :mcsanth@gmail.com
6. Field(s) of Specialization: Thin Films, Optoelectronic materials,
Thin film solar cells, Nanomaterials

7. Employment Profile

Job Title	Employer	From	To
Associate professor	National Institute of Technology, Tiruchirappalli, Tamil Nadu, India	March 2018	Till Date
Assistant Professor	National Institute of Technology, Tiruchirappalli, Tamil Nadu, India	May 2006	March 2018
Lecturer	Rajagiri School of Engineering and Technology, Kochi, Kerala	September 2002	April 2006

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8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D.	Cochin University of Science and Technology, Kochi, Kerala	2003		Thin Films
M.Sc.	Pondicherry University, Pondicherry	1997	77.1%	Physics
B.Sc.	Calicut University	1995	71.9%	Physics (main)
SSLC	Kerala State Board	1990	79.6%	General

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
M.Tech. NDT Subject co-ordinator	Department of Physics	June 2006	May 2008
B.Tech. Subject co-ordinator	Department of Physics	June 2011	May 2013
M.Tech. NDT Subject co-ordinator	Department of Physics	January 2015	December 2016
M.Sc. Physics Coordinator	Department of Physics	January 2018	Till date

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
Board of Studies member	Department of Physics, Cochin University, Kerala	2015	2018
Board of Studies member	KL University, Andra Pradesh	2014	
Board of Studies member	Vimala College, Trissur, Kerala	2018	2019

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization

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12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)

13. Details of Academic Work

(i) Curriculum Development

(ii) Courses taught at Postgraduate and Undergraduate levels

1. Physics-I - I Year B.Tech.
2. Physics-II - I Year B.Tech.
3. Energy and Environmental Engineering - I Year B.Tech.
4. Instrumentation systems - M.Sc.
5. VLSI Technology - M.Sc.
6. Thin Film Technology & Applications - M.Sc. & M.Tech
7. Advanced NDT Techniques – I M.Tech. (NDT)
8. Advanced NDT Techniques – II M.Tech. (NDT)
9. Sensors and Transducers - M.Sc.
10. Electromagnetic theory - M.Sc.
11. Electronics – M.Sc.

(iii) Projects guided at Postgraduate level

M.Tech. Projects

Sl. No.	Title of thesis	Name of Student	Month and year of submission	Co-guide (if any)
1	Assessment of eddy current inspection on aerospace structure through numerical simulation	Sreechand G. S	May 2018	Mr. Bharath k Kodumuru
2	Establishment Of Phased Array Ultrasonic Technique For Full Penetration Header Stub Welding	Austin C	May 2017	Mr.Gunasekar.S
3	Replacement Of Radiography Technique With Phased Array And TOFD For Tubes With Smaller Thickness	Sandeep Kumar	May 2016	Mr.Gunasekar.S
4	Automatic Detection And Classification Of Defects In Radiographs	Rupam Baruah	May 2016	Mr.Gunasekar.S
5	Inspection Of Surface Breaking Flaws Using Laser Generated Rayleigh Waves	Akhil B S	May 2015	Dr.Krishnan Balasubramanian
6	Estimation Of Moisture In Blast Furnace Coke By Non – Invasive Technique	Neelkamal Kulhara	May 2015	Dr.Arпита Ghosh
7	Flying Spot Laser Thermography For Fast Detection Of Surface Breaking Cracks Of Stainless Steel	Nithin P V	May 2014	Prof.Krishnan Balasubramanian
8	Non-Destructive Characterization Of Cracks In Cladded Pressure Vessels	Sarath Chandran M	May 2014	Sri.Paritosh Nanekar
9	Low Frequency Eddy Current Inspection On Reformer Tubes	Sachin Sajeev	May 2013	Dr.Krishnan Balasubramanian

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10	Defect Detection In GFRP Specimen And Air Gap Measurement In Cylindrical Geometries Using Infrared Thermography	R. Shunmuga Sundaram	May 2012	Dr.John Philip
11	Angular Resolution In Guided Waves	S. Jagajith	May 2011	-
12	Defect Sizing And Profile Mapping Using Digital Radiography	Visakh Chandran	May 2011	-
13	Influence Of Thresholding Procedures In Noise Reduction Of Ultrasonic Signals Using Wavelet Processing	Amarnath K P	May 2010	Dr.C.Babu Rao
14	Automated Classification Of Defects In Ultrasonic Inspection Using Artificial Neural Networks	Anil Kumar G	May 2010	Dr.C.Babu Rao
15	Preparation Of $Pb_{1-x}Fe_xS$ Thin Film And Formation Of n- ITO/PbS Self Assembled Heterojunctions By Chemical Bath Deposition (CBD) Technique	Gomathi E	May 2008	Dr.K.Siva Prasad
16	Pipeline Girth Weld Automated Inspection Using Phased Array Zone Discrimination Technique For Improved Probability Of Detection And Sizing	S.Rajasuhas	May 2009	I.Mohsin
17	Ultrasonic Phased Array Technique- An Alternative Nde Technique For The Inspection Of Pipeline Tie-In Welds	N.Hemachandra Reddy	May 2009	I.Mohsin
18	Thermal Imaging Of Adhesively Debonded Structures	Siva Sankar Y	May 2008	Dr.John Philip
19	Development Of Magnetostrictive Transducers For Structural Health Monitoring Of Plate Like Structures	S.Selva Ganesan	May 2007	Dr.Krishnan Balasubramanian
20	Optimization Of Al Doped ZnO TCO Thin Films For DSSC Electrode Applications	Akash Arya	May 2013	Dr.R.Prasanth
21	Fabrication Of Superhydrophobic ZnO Thin Films For Self-Cleaning Applications	Aarthi.S	May 2017	Dr.R.Prasanth

M.Sc. Projects

Sl. No.	Title of thesis	Name of Student	Month and year of submission	Co-guide (if any)
1	Preparation and characterization of Sb_2S_3 thin films by physical vapour deposition	Stephin James	May 2018	
2	Ga Doped CdS thin films grown by chemical bath deposition for solar cell applications	Aiswarya N. K.	May 2018	
3	An Investigation On The Deposition And Properties Of PEDOT:PSS Polymer Films And Fabrication Of n-ZnO/NpPEDOT:PSS Schottky Diode	Harikeerthana M.G	May 2017	
4	Studies On Optical And Electrical Properties Of Zn Doped Cds Thin Films And Fabrication Of SnS/CdS Heterojunctions	Haritha K.H	May 2017	
5	Deposition Of Super Hydrophobic ZnO Layers For Self-Cleaning Applications	Sruthy Poulose	May 2016	

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6	Deposition Of SnS Absorber Layer For Thin Film Solar Cell Applications	B.Hemanth Kumar	May 2016	
7	Deposition Of Cu-Zn-S Thin Films, Using Successive Ionic Layer Adsorption And Reaction (SILAR) Method	Edwin Jose	May 2015	
8	Effect Of Substrate Temperature of CdO Thin Film By RF Magnetron Sputtering	Semin Xavier	May 2015	
9	An investigation on the deposition and characterization of Phosphorous and Nitrogen dual acceptor doped p-type ZnO thin Films	Sebin Devasia	May 2014	
10	Effect Of Deposition Time And Cadmium Doping On The Structural, Electrical And Optical Properties Of Lead Sulphide Thin Films Prepared By Chemical Bath Deposition (CBD) Method	Muhammedali D Kakhandaki	May 2014	
11	Analysis Of Structural And Electrical Properties Of Aluminium Doped Lead Sulphide Thin Films Prepared By CBD Method	Keerthana.K	May 2013	
12	Deposition Of Zinc Oxide Thin Films On Stainless Steel (SS304) Substrate By Spray Pyrolysis	Akshay Srinivas	May 2013	
13	Preparation Of PBS Thin Films By Chemical Bath Deposition CBD And Formation Of n-ZnO/P-PbS Heterojunctions	Priyadarshini. M	May 2012	
14	Deposition Of Na And N Dual Acceptor Doped p-Type ZnO Nanorods	A. Deepika	May 2012	
15	Room Temperature Ferromagnetism In $Ce_{1-x}Co_xO_{2\delta}$ Nanocrystals	Anitha. K	June 2011	
16	Preparation And Characterization Of $Pb(Zr_xTi_{1-x})O_3$ Films By A Simple Dip Coating Method And Fabrication Of Meso Scale Micro Cantilever	Nasiha. J	June 2011	
17	Preparation, Structural And Optical Properties Of $Ce_{1-x}Zn_xO_2$ Thin Films	Vasumathy. R	May 2010	
18	Synthesis And Luminescence Properties Of Eu^{3+} And Tb^{2+} Doped ZnO Based Phosphor	A Safarulla	May 2009	
19	Effect Of Substrate Temperature And Annealing On The ZnO Thin Films By Spray Pyrolysis	S.Anbumozhi Angayarkanni	May 2009	
20	Ultrasonic Spotlight Tracker	Tamilselvi.S	May 2008	
21	Embedded Web Server For Controlling And Monitoring Devices	Aneesh.N	May 2007	
22	Synthesis Of Doped SnO_2 Nano Composite By Hydrolysis Process	M.Saraswathi	April 2008	Mrs.K.Maithilee
23	Synthesis Of $SnO_2-Al_2O_3$ Nano Composite By Chemical Precipitation	S.Kowsalya	April 2008	Mr.P.Sakthivel

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	Method			
24	Preparation And Characterization Of Cu Doped PbS Thin Films	G.Charaniya	April 2008	Mrs.K.Maithilee
25	Preparation And Characterization Of Fe Doped PbS Thin Films	S.Saraswathi	April 2008	Mrs.M.Malarvizhi

(iv) Other contribution(s)

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Fabrication of ZnO nanoparticle based light emitting devices by screen printing technique	TEQIP	2007		Completed
Preparation of p-ZnO films by dual acceptor doping and fabrication of homo-junction devices	DST Fasttrack Scheme	2010	2013	Completed
Fabrication and characterization of homojunction and hybrid light emitting diodes (LEDs) using vertically aligned conducting ZnO nanowires	INUP, IIT Bombay	Jan 2015	May 2015	Completed
Fabrication and characterization of ZnO nanowires based p-i-n photodiodes for ultra-violet (UV) light detection	INUP, IIT Bombay	Nov 2015	June 2016	Completed
Deposition of earth abundant ternary CuZnS thin films and Fabrication of Cadmium free solar cells.	DST-CERI 2015	2016	2019	ongoing

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15. Number of PhDs guided : 5

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
Dr.T. Prasada Rao	Preparation and characterization of n-type and p - type ZnO thin films for optoelectronic applications	Supervisor	2011
Dr. R. Swapna	Investigations on preparation and properties of various n-type and p-type ZnO thin films and fabrication of p-n homojunctions	Supervisor	2014
Dr. R. Amiruddin	Aqueous Chemical Growth of ZnO Nanowires and Fabrication of High speed Ultraviolet Photodiodes	Supervisor	2017
Dr. Srinivasa Reddy Tippasani	Deposition and Characterization of Tin Sulphide and Copper Tin Sulphide Thin films- Prospective Absorber Layers for Solar Cells	Supervisor	2018
Mr. Saheer Cheemadan	Deposition and Characterization of NiO thin films by RF magnetron sputtering and fabrication of p-NiO/p-CuO/n-CdO: ZnO heterojunctions	Supervisor	Submitted thesis on 08.08.2018

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue
12 -15 July 2016	8 th International conference on Technological Advancement of Thin Films & Surface	International	Participant	Thin Film Society	Singapore

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	Coatings.				
20-23 February 2016	4 th International Conference on Frontiers in Nanoscience and Technology, Cochin Nano- 2016	International	Participant	CUSAT	Kochi, Kerala
28-29 April 2015	Conclave on academic reforms, , NIT Tirichirappalli, India	National	Participant	NIT-T	Tiruchirappalli
4-6 December 2014	National Seminar Exhibition on Non Destructive Evaluation,	National	Participant	NIT-T	Pune
3-5 January 2013	2 nd International Conference on Optoelectronic Materials and thin Films for Advanced Technology	International	Participant	CUSAT	Kochi, Kerala
22 – 25 October 2012	1 st International conference on Emerging Advanced nanomaterials	International	Participant	The University of Queensland	Brisbane, Australia
14 -17 August 2011.	3 rd International Conference on Frontiers in Nano science and Technology, Cochin Nano- 2011	International	Participant	CUSAT	Kochi, Kerala
24-28, October 2010	Frontiers in Optics 2010/ Laser science	International	Participant	SPIE	Rochester, New York USA

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	XXVI				
10-12 December 2009	National Seminar on NDE (NDE 2009)	National	participant	ISNT	Tiruchirappalli
2-3, May 2008	National Conference on Thin Films materials and Devices	National	participant	NITK, Surathkal	Surathkal, Karnataka
24-25, January 2008	National Conference on emerging materials and Technologies for India 2020	National	participant	Dept. of Metallurgical and Materials engineering, NIT-T	Tiruchirappalli
4-6, February 2007	International Conference on Nanomaterials and Its Applications,	International	participant	Department of Chemistry NIT-T	Tiruchirappalli
4-6, January 2007	5 th International Conference on Trends in Industrial Measurements and Automation	International	participant	NIT-T	Tiruchirappalli
11-16, December 2006	Workshop on Mems and Smart structures	National	Participant	ISSS	Bangalore
7-9, December 2006	National Seminar on Non Destructive Evaluation	National	Participant	ISNT	Hyderabad

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue
National symposium in Physics-InPhyNITT-2018	National level	09 March 2018	Staff convener	NITT

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National Conference on Advanced Materials: Processing and Characterization	National level	27-28 February 2017	Convener	NITT
Workshop on Characterization of materials for advanced applications (TEQIP-II sponsored)	National level	4 -6 August 2016	Convener	NITT
Short term programme on Nano structured materials: Processing and characterization	National level	7-8 October 2014	Convener	NITT
Golden Jubilee Lecture by Prof. G.K.Sivakumar, NIT Surathkal	Local level	04.04.2014	Convener	NITT
Faculty Development Programme on Physics for Emerging Technologies (Self Financing)	National level	15-19 July, 2013	Convener	NITT
Invited Talk by Prof. Paulraj Manidurai from University of Concepcion, Chile	Local level	13.02.2013	Convener	NITT
TEQIP sponsored one day workshop on Nanostructures and Device	National level	23.02.2008	Convener	NITT
TEQIP sponsored two day national workshop on Non-Destructive Testing-Quality 2007	National level	12-13 October, 2007	Convener	NITT
TEQIP sponsored one day workshop on Gateway to GATE 2008-Workshop for aspirants	National level	10.03.2007	Convener	NITT

18. Invited Talks delivered

Topic	Date	Inviting Organization
Thin Films for optoelectronics and Mechanical applications	23 rd March 2018.	National conference on Nanomaterials, R.V.S. Kumaram Arts and Science College, Ayyalur, Dindigul,
Metal oxide nanostructures	04 th January	Refresher course in nanosciences, UGC-Human Resource development Centre,

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for high speed uv-detector and some mechanical applications	2018	Bharahidasan University, Tiruchirappalli – 620023,
Thermal evaporation, Ion Beam Sputtering and Ion Plating	27 th November 2017	AICTE-QIP Sponsored two weeks FDP on Thin Films Deposition and Characterization, Alagappa Chettiar Govt. College of Engineering and Technology, Karaikudi -630 003
Recent advances in Nanostructures and Thin films	22 nd Septemebr 2017	Invited talk at Department of Physics, Crist College, Irigalakkuda, Kerala,
Metal oxide nanostructures for high speed ultraviolet Photodiodes	14 th February 2017	National Seminar on Recent Advancements in Photonics – NSAP2017, Vimala College, Thrissur, Kerala,
Thin Films for Optoelectronics and Photovoltaic Applications	7 th October 2016	National Conference on Advanced Materials (NCAM-2016), St. Joseph's College, Trichy
Optical and Electrical characterization of thin films	4-6 August 2016,	Workshop on Characterization of Materials for advanced Applications, Department of Physics, NIT Trichy
Metal oxide nanostructures for optoelectronics and Mechanical applications	2 nd July 2016.	One day workshop on Nanotechnology and its Applications, Department of Mechanical Engg., Vimal Jyothi college, Chemperi, Kannur, Kerala
Advances in Thin Film Solar Cells	6-9 June 2016,	Workshop on utilization of Techniques of renewable energy sources, Department of Mechanical Engineering, NIT Trichy
Metal oxide nanostructures for optoelectronics and Mechanical applications.	23 rd January 2016	National level conference on Technologies Behind Nanoscience : Fabrication, diagnostics and applications, MA College, Kothamangalam,
Thin Film Technology and its applications	15 th January 2016	STTP on Recent Advances in Applied Physics, SOE, CUSAT, Kochi-22,
Evolution of Light Sources	11 th January 2016	STTP on Recent Advances in Applied Physics, SOE, CUSAT, Kochi-22,
Thin Film nanostructures and	19 th December	FDP on Green nanotechnology in materials engineering and energy

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applications	2015	applications, College of Engineering, Adoor, Kerala
Metal oxide nanostructures for optoelectronic and mechanical applications		Invited talk in National Seminar at Devamatha college, Kuravilangad, Kerala
Evolution of Light Sources	17 th November 2015	TEQIP-II sponsored expert talk in College of Engineering, Adoor, Kerala,
Metal oxide nanostructures for optoelectronics and Mechanical applications.	6 th November 2015	Modern trends in physics research (MTPR-2015) St. Stephen's College Pathanapuram, Kollam, Kerala,
Transparent oxide nanostructures and applications	17 th to 30 th July 2015	Anna University Bharathidasan Institute of Technology, Tiruchirappalli
Transparent oxide nanostructures	26 th to 28 th March 2014	International conference on Advanced materials and its applications, 26 th to 28 th March 2014, Alphonsa College, Pala, Kerala
Transparent oxide nanostructures and its applications	19 th February, 2014	KL University, Vaddeswaram, Andra Pradesh
Thin film deposition and applications	18 th -21 st December, 2013	Workshop on Application of Nanotechnology in Mechanical Engineering, NIT Trichy
Recent Trends in Transparent Conducting Oxide (TCO) Thin Films	11-12, December 2013	MSM college, Kayamkulam, Alappuzha, Kerala
Transparent conducting oxide thin films (TCO): Technology and applications	25-25 July 2013,	Sree Sankara College, Kaladi, Ernakulam, Kerala
Recent Trends in Transparent Conducting Oxide (TCO) Thin Films	25-26 March 2013	Devamatha college, Kuravilangad, Kottayam, Kerala
Introduction to Micro-electromechanical Systems	25 th January 2013	Govt. Brennen College, Thalassery, Kerala
NMR spectroscopy in NDT	March 2008	Department of Chemistry, NITT
Thin films and applications	February 2008	Department of Metallurgy and Materials engineering, NITT
Nanostructures for MEMS applications	February 2008	Department of Physics, NITT
MEMS and Smart systems	February 2007	Govt. Engg College, Salem

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19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Life member	ISTE	
Life member	ISNT	

20. Academic Foreign Visits

Country	Duration of Visit	Programme
South Korea	25 th November-24 th December 2007	TEQIP training at KAIST
USA	October 24-28, 2010	Frontiers in Optics 2010/ Laser science XXVI", Rochester, New York USA,
Australia	22 nd – 25 th October 2012	1 st International conference on Emerging Advanced nanomaterials, The University of Queensland, Brisbane, Australia,
Singapore	12 th -15 th July 2016	8 th International conference on Technological Advancement of Thin Films & Surface Coatings

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	Impact Factor of the Journal
Bincy John, G. Genifer Silvena, Shamima Hussain, M. C. Santhosh Kumar & A. Leo Rajesh	Surfactant mediated solvothermal synthesis of CuSbS ₂ nanoparticles as p-type absorber material	Indian Journal of Physics	In Press			0.967
Devika Mahesh, and M. C. Santhosh Kumar	An investigation on the In doping of ZnO thin films by spray pyrolysis	AIP Conference Proceedings	1942	080049	2018	
Saheer Cheemadan, M.C. Santhosh Kumar	Effect of Substrate Temperature and Oxygen Partial Pressure on RF	Materials Research Express	5	046401	2018	1.151

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	Sputtered NiO thin films					
Sebin Devasia, EI. Anila, M.C. Santhosh Kumar	Post-deposition thermal treatment of sprayed ZnO:Al thin films for enhancing the conductivity	Physica B: Condensed Matter	533	83–89	2018	1.453
S Thiruvankadam, S Prabhakaran, Sujay Chakravarty, V Ganesan, Vasant Sathe, MC Santhosh Kumar, A Leo Rajesh	Effect of Zn/Sn molar ratio on the microstructural and optical properties of Cu ₂ Zn _{1-x} Sn _x S ₄ thin films prepared by spray pyrolysis technique	Physica B: Condensed Matter	533	22–27	2018	1.453
S.P. Sivapirakasam, Sreejith Mohan, Ashley Thomas Paul, M.C. Santhosh Kumar, M. Surianarayanan	Control of exposure to hexavalent chromium concentration in shielded metal arc welding fumes by nano-coating of electrodes	International Journal of Occupational and Environmental Health	23	128-142	2017	1.195
Genifer Silvena Bincy John, R. Anne Sarah Christinal, M. C. Santhosh Kumar, Sujay Chakravarty, A. Leo Rajesh	Solution Processed p-Type Cu ₂ ZnSnS ₄ Thin Films for Absorber Layer	J Inorg Organomet Polym	27	1556	2017	1.754
R. Amiruddin, M.C. Santhosh Kumar	High-speed photoresponse properties of ultraviolet (UV) photodiodes using vertically aligned Al:ZnO nanowires	Phys. Status Solidi A	214	1600658		1.795
Edwin Jose, M.C. Santhosh Kumar	Room temperature deposition of highly crystalline Cu-Zn-S thin films for solar cell applications using SILAR method	Journal of Alloys and Compounds	712	649-656	2017	3.779
T. srinivasa Reddy; M.C. Santhosh Kumar, S. Shaji	Deposition rate dependant formation and properties of Sn ₂ S ₃ and SnS thin films by co-evaporation	Mater. Res. Express	4	046404	2017	1.151
S.P. Sivapirakasam, Sreejith Mohan, M.C. Santhosh Kumar, M. Surianarayanan	Modeling of Fume Formation from Shielded Metal Arc Welding Process	Metallurgical and Materials Transactions B			2017	1.834
T. Srinivasa	Effect of annealing on	AIP Conference	1832	080043	2017	

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Reddy, B. Hemanth Kumar and M. C. Santhosh Kumar	the optical properties and photoconductivity of SnS thin film	Proceedings				
R. Amiruddin, M.C. Santhosh Kumar	Role of oxygen interstitial defects in fabrication of UV photodiodes using vertically aligned (Al,Ga):ZnO nanowires	Nanoscience and Nanotechnology letters	9	488-494	2017	2.917
R. Reshmi Krishnan, Radhakrishna Prabhu, M. C. Santhosh Kumar, C. Sudarsanakumar and V. P.Mahadevan Pillai,	Effect of Nb doping on the structural, morphological, optical and electrical properties of RF magnetron sputtered In ₂ O ₃ nanostructured films,	Phys. Status Solidi C	14	1600095	2017	
T. Srinivasa Reddy, M.C. Santhosh Kumar	Co-evaporated SnS thin films for visible light photodetector applications	RSC Adv	6	95680	2016	2.936
R. Amiruddin, M.C. Santhosh Kumar,	Role of p-NiO electron blocking layers in fabrication of (P- N):ZnO/Al:ZnO UV photodiodes	Current Applied Physics	16	1052- 1061	2016	2.058
Edwin Jose and M.C. Santhosh Kumar	Room-temperature wide-range luminescence and structural, optical, and electrical properties of SILAR deposited Cu- Zn-S nanostructured thin films	Proc. of SPIE	9929	992917	2016	
Sn ₂ S ₃ thin films, T. Srinivasa Reddy, M.C. Santhosh Kumar,	Effect of substrate temperature on the physical properties of co- evaporated	Ceramics International	42	12262- 12269	2016	3.057
Saheer Cheemadan, R. Amiruddin, M.C. Santhosh Kumar	Highly transparent conducting CdO thin films by R.F. Magnetron sputtering for Optoelectronic applications	J. Nanophoton.	10(3)	033007	2016	1.060
C.S. Sujith Kumar, S. Suresh, A.S. Praveen, M.C. Santhosh Kumar, Vishakh Gopi,	Effect of surfactant addition on hydrophilicity of ZnO- Al ₂ O ₃ composite and enhancement of flow boiling heat transfer	Experimental Thermal and Fluid Science	70	325-334	2016	3.204
Saheer Cheemadan, R.	Realization of highly transparent conducting	Proceedings of SPIE	9558	955816	2015	

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Amiruddin, M.C. Santhosh Kumar	CdO thin films by R.F.Magnetron sputtering for Optoelectronic applications					
Sreejith Mohan, S.P. Sivapirakasam, M.C. Santhosh Kumar, M. Surianarayanan, ,	Welding Fume Reduction by Nano-Alumina Coating on Electrodes –Towards Green Welding Process	Journal of Cleaner Production	108	131-144	2015	5.651
R. Swapna, K. Venkateswaralau, M. C. Santhosh Kumar,	Heat Treatment Impact on the Properties of Na and N Dual Doped ZnO Thin Flms by Spray Pyrolysis,	Procedia Materials Science	10	714 – 722	2015	
R. Swapna, T. Srinivasa Reddy, K. Venkateswaralau, M. C. Santhosh Kumar,	Effect of Post-Annealing on the Properties of Eu Doped ZnO Nano Thin Films	Procedia Materials Science	10	723 – 729,	2015	
T. Srinivasa Reddy, R. Amiruddin, M.C. Santhosh Kumar	Deposition and Characterization of Cu ₂ SnS ₃ Thin Films by Co-evapoartion for photovoltaic application	Solar Energy Materials and solar cells	143	128–134	2015	5.018
R. Amiruddin, M.C. Santhosh Kumar,	Growth and characterization of near white light emitting Al-Ga:ZnO nanowires	Mater. Res. Express	2	075004	2015	1.151
Sreejith Mohan, S.P. Sivapirakasam, M.C. Santhosh Kumar, M. Surianarayanan	Application of Taguchi Method in the Optimization of Process Parameter for Sol - Gel Derived Nano Alumina Film	Journal of Materials: Design and Applications			2015	1.281
Sreejith Mohan, S.P. Sivapirakasam, M.C. Santhosh Kumar, M. Surianarayanan	Welding fumes reduction by coating of nano-TiO ₂ on electrodes	Journal of Materials Processing Technology	219	237–247,	2015	3.647
R. Amiruddin, Sebin Devasia, K.Mohammedali, M. C. Santhosh Kumar	Investigation on PN dual acceptor doped p-type ZnO thin films and subsequent growth of pencillike nanowires	Semiconductor Science and Technology	30	035009-035019	2015	2.280
T. Prasada Rao, S.Gokul Raj, M. C. Santhosh Kumar	Optical Properties of Samarium Doped ZnO Thin Films	IEEE xplore, 2nd International Conference on			2014	

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		Devices, Circuits and Systems (ICDCS)				
T.Prasada Rao, S. Gokul Raj, M. C. Santhosh Kumar	Effect of Annealing Atmosphere on Structural and Optical Properties of Nd:ZnO Thin Films	Procedia Materials Science	6	1631 – 1638	2014	
C.S. Sujith Kumar, S. Suresh C.R, Aneesh, M.C.Santhosh Kumar, A.S. Praveen, K. Raji	Flow boiling heat transfer enhancement on copper surface using Fe doped Al ₂ O ₃ TiO ₂ composite coatings	Applied Surface Science	334	102–109	2015	4.439
R. Amiruddin, M. C. Santhosh Kumar	Enhanced visible emission from vertically aligned ZnO nanostructures	Journal of Luminescence	155	149– 155	2014	2.732
R. Amiruddin, M. C. Santhosh Kumar	Epitaxial Growth of Vertically Aligned Highly Conducting ZnO Nanowires by Modified Aqueous Chemical Growth	Ceramics International	40	11283– 11290	2014	3.057
R. Amiruddin, Akshay Srinivas, C. S. Sujith Kumar, M. C. Santhosh Kumar	Fabrication of Hydrophobic ZnO Surfaces on SS304 Substrates	J. Environ Nanotechnol.	4	51-56	2014	
S. Cheemadan, K. Keerthana, M. C. Santhosh Kumar	Analysis of Structural and Electrical Properties of Aluminium Doped Lead Sulphide (PbS) Thin Films Prepared by CBD Method.	J. Environ Nanotechnol.	2	28-33	2014	
R. Swapna, R. Amiruddin, M. C. Santhosh Kumar	Dual Acceptor Doping and Aging Effect of pZnO:(Na, N) Nanorod Thin Films by Spray Pyrolysis	AIP Conference Proceedings	1576	167-170	2014	
R. Swapna, M. C. Santhosh Kumar	Fabrication and Characterization of nZnO: Eu/pZnO:(Ag,N) homojunction by spray pyrolysis	Materials Research Bulletin	49	44–49	2014	2.873
R. Swapna, M. C. Santhosh Kumar	Deposition of NaN dual acceptor doped p- type ZnO thin films and fabrication of	Materials Science and Engineering B	178	1032– 1039	2013	3.316

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	pZnO:(Na,N)/nZnO: Eu homojunction					
R. Swapna, R. Amiruddin, and M. C. Santhosh Kumar	Aging and annealing effects on properties of Ag-N dualacceptor doped ZnO thin films	AIP Conf. Proc.	1512	682-683	2013	
R. Swapna, M. Ashok, G. Muralidharan, M. C. Santhosh Kumar	Microstructural, electrical and optical properties of ZnO:Mo thin films with various thickness by spray pyrolysis	Journal of Analytical and Applied Pyrolysis	102	68–75	2013	3.468
R. Swapna, M.C. Santhosh Kumar	Growth and characterization of molybdenum doped ZnO thin films by spray pyrolysis	Journal of Physics and Chemistry of Solids	74	418–425	2013	2.207
R. Swapna, M.C. Santhosh Kumar	Deposition of the low resistive AgN dual acceptor doped p-type ZnO thin films	Ceramics International	39	1799–1806	2013	3.057
T Prasada Rao, M C Santhosh Kumar, N. Sooraj Hussain	Effects of thickness and atmospheric annealing on structural, electrical and optical properties of GZO thin films by spray pyrolysis	Journal of Alloys and Compounds	541	495–504	2012	3.779
T. Prasada Rao, M. C. Santhosh Kumar	Resistivity Stability of Ga Doped ZnO Thin Films with Heat Treatment in Air and Oxygen Atmospheres	Journal of Crystallization Process and Technology	2	72-79	2012	0.82
R. Swapna, M.C. Santhosh Kumar	The role of substrate temperature on the properties of nanocrystalline Mo doped ZnO thin films by spray pyrolysis	Ceramics International	38	3875–3883	2012	3.057
T. Prasada Rao and M. C. Santhosh Kumar	Effect of annealing on the structural, optical and electrical properties of ZnO thin films by spray pyrolysis	Indian J. Phys	85	1381-1391	2011	0.967
T. Prasada Rao and M. C. Santhosh Kumar	Realization of stable p-type ZnO thin films using Li–N dual acceptors	Journal of Alloys and Compounds	509	8676–8682	2011	3.779
M.C. Santhosh Kumar, B. Pradeep	Band gap variation in co-evaporated AgInSe ₂ thin films with 1.26 MeV He ⁺ ion irradiation	Indian Journal of Physics	85	401-409	2011	0.967

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M.C. Santhosh Kumar, B. Pradeep	Optical constants of co-evaporated Ag ₂ Se thin films with proton irradiation	Journal of Ovonic Research	6	143-148	2010	0.618
T. Prasada Rao and M. C. Santhosh Kumar	Physical properties of Ga doped ZnO thin films by spray pyrolysis	Journal of Alloys and Compounds	506	788–793	2010	3.779
T. Dhannia, S. Jayalekshmi, M. C. Santhosh Kumar, T. Prasada Rao, A. Chandra Bose	Effect of iron doping and annealing on structural and optical properties of cerium oxide nanocrystals	Journal of Physics and Chemistry of Solids	71	1020–1025	2010	2.207
M.C. Santhosh Kumar, B. Pradeep	Effect of He ⁺ ion irradiation on the structural and optical properties of vacuum evaporated AgInSe ₂ thin films	Journal of Alloys and Compounds	495	284–287	2010	3.779
T. Prasada Rao, M. C. Santhosh Kumar, V. Ganesan, S. R. Barman, C. Sanjeeviraja	Physical properties of ZnO thin films deposited at various substrate temperatures using spray pyrolysis	Physica B	405	2226–2231	2010	1.453
S. Bagavathiappan, Y. Siva Sankar, M.C. S. Kumar, John Philip, T. Jayakumar and Baldev Raj	Active infrared thermal imaging for quantitative analysis of defects and delaminations in composite materials	Journal of Non Destructive Testing & Evaluation	8	28-36	2009	
T. Dhannia, S. Jayalekshmi, M. C. Santhosh Kumar, T. Prasada Rao, A. Chandra Bose	Effect of aluminium doping and annealing on structural and optical properties of Cerium Oxide nanocrystals	Journal of Physics and Chemistry of Solids	70	1443–1447	2009	2.207
T. Prasada Rao, M.C. Santhosh Kumar, S. Anbumozhi Angayarkanni, M. Ashok	Effect of stress on optical band gap of ZnO thin films with substrate temperature by spray pyrolysis	Journal of Alloys and Compounds	485	413–417	2009	3.779
M.C. Santhosh Kumar and B. Pradeep	Effect of H ⁺ irradiation on the optical properties of vacuum evaporated AgInSe ₂ thin films	Applied Surface Science	255	8324–8327	2009	4.439
T. Prasada Rao, M.C. Santhosh Kumar	Highly Oriented (1 0 0) ZnO thin films by spray pyrolysis	Applied Surface Science	255	7212–7215	2009	4.439

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T. Prasada Rao, M.C. Santhosh Kumar	Thickness effect on structural, optical and electrical properties of ZnO thin films by Spray Pyrolysis	Applied Surface Science	255	4579–4584	2009	4.439
M.C. Santhosh Kumar and B. Pradeep	Formation and properties of silver indium selenide thin films by coevaporation	Vacuum	72	369 – 378	2004	2.067
M.C. Santhosh Kumar and B. Pradeep	Photoelectrical properties of Silver Indium Selenide Thin Films	Journal of Materials Science Letters	22	287-291	2003	0.68
M.C. Santhosh Kumar and B. Pradeep	Preparation and electrical properties of silver selenide thin films by reactive evaporation	Bull. Mater. Sci.	25	407-411	2002	0.925
M.C. Santhosh Kumar and B. Pradeep	Transport properties of silver selenide thin films from 100 K to 300K	Mater. Lett.	56	491-495	2002	2.687
M.C. Santhosh Kumar and B. Pradeep	Structural electrical and optical properties of silver selenide thin films	Semicond. Sci. Technol.	17	261-265	2002	2.280

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
T. Srinivasa Reddy, B. Hemanth Kumar, M. C. Santhosh kumar,	Effect of Annealing on the optical properties and photoconductivity of SnS thin film,			61 st DAE Solid State Physics Symposium	Bhubaneswar, Odisha	2016
Edwin Jose and M.C. Santhosh Kumar, ,	Room-temperature wide-range Luminescence and structural, optical and electrical properties of SILAR deposited Cu-Zn-S nano-structured thin films			SPIE Optics + Photonics	San Diego, USA	2016
R. Amiruddin and M.C. Santhosh Kumar	Performance investigation of ZnO based p-i-n UV Photodiode using vertically aligned (Al, Ga):ZnO nanowires			8 th International conference on Technological Advancement of Thin Films & Surface Coatings	Singapore	2016
R. Amiruddin and M.C. Santhosh Kumar,	Facile synthesis of free standing and conducting Al:ZnO			4 th International Conference on Frontiers in	Cochin	2016

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	Nanowires with visible luminescence characteristics			Nanoscience and Technology, nano-2016		
Edwin Jose, T. Srinivasa Reddy and M.C. Santhosh Kumar,	Investigation on structural, morphological, optcal and electrical properties of SILAR deposited CuZnS Nanostructured thin films			4 th International Conference on Frontiers in Nanoscience and Technology, nano-2016	Cochin	2016
Rupam Baruah, M.C Santhosh Kumar,	Automatic Detection And Characterization Of Defects In Radiographic Images Using Artificial Neural Network			National seminar and International exhibition on Non-Destructive Evaluation, NDE-2015	Hyderabad	2015
Sandeep Kumar, M.C Santhosh Kumar	Automatic Detection of Defects And Pattern Recognition In TOFD Signal/Image of A Thin Weldment,			National seminar and International exhibition on Non-Destructive Evaluation, NDE-2015	Hyderabad	2015
Saheer Chemadan, R. Amiruddin, , M.C. Santhosh Kumar,	Realization of highly transparent conducting CdO thin films by R.F. Magnetron sputtering for Optoelectronic applications			SPIE NanoScience + Engineering,	Sandiago, California, USA	2015
R. Amiruddin, Saheer Chemadan, M.C. Santhosh Kumar	Fabrication and characterization of p-ZnO:(P,N)/n-ZnO:Al homojunction Ultra-Violet (UV) Light Emitting Diodes			SPIE NanoScience + Engineering,	Sandiago, California, USA	2015
Edwin Jose, T. Srinivasa Reddy and M.C. Santhosh Kumar	Deposition of Cu-Zn-S thin films by SILAR technique for photovoltaic applications			10th Mid-Year CRSI Symposium in Chemistry,	NIT, Trichy	2015
Saheer Cheemadan, M.C. Santhosh Kumar	The Effect Substrate Temperature on the properties of CdO Thin Film by RF Magnetron Sputtering,			10th Mid-Year CRSI Symposium in Chemistry,	NIT, Trichy	2015
T. Srinivasa Reddy and M.C. Santhosh Kumar	Effect of Substrate temperature on the properties of co-evaporated Cu ₂ SnS ₃ thin film,			10th Mid-Year CRSI Symposium in Chemistry	NIT, Trichy	2015
T. Srinivasa Reddy and M.C. Santhosh Kumar	Depositiion and characterisation of co-evaporated Cu ₂ SnS ₃ thin films			International conference on sustainable energy	PSG College of Engineering, Coimbatore	2014

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	for photovoltaic applications			Technologies		
B.S. Akhil, Krishnan Balasubramanian and M.C. Santhosh Kumar	Modeling Laser Ultrasonic Inspection using FEM			National seminar and International exhibition on Non-Destructive Evaluation, NDE-2014	Pune	2014
Neelkamal Kulhara, Arpita Ghosh, M.C. Santhosh Kumar	Estimation of Moisture in Blast Furnace Coke by Non-Invasive Technique			National seminar and International exhibition on Non-Destructive Evaluation, NDE-2014	Pune	2014
R. Swapna, T. Srinivasa Reddy, K. Venkateswarlu, M.C. Santhosh Kumar	Effect of Post-Annealing on the Properties of Eu Doped ZnO Nano Thin Films			2nd International Conference on Nanomaterials and Technologies (CNT 2014),	Hyderabad, India	2014
R. Swapna, K. Venkateswarlu, M.C. Santhosh Kumar	Heat Treatment Impact on the Properties of Na and N Dual Doped ZnO Thin Flms by Spray Pyrolysis			2nd International Conference on Nanomaterials and Technologies (CNT 2014),	Hyderabad, India	2014
Sarath chandran, N. Jothilakshmi, Paritosh Nanekar and M.C. Santhosh Kumar	Non-destructive Characterization of Cracks in Cladded Pressure Vessels			National seminar and International exhibition on Non-Destructive Evaluation, NDE-2013		2013
Nithin P.V., Krishnan Balasubramanian, Prabhu Rajagopal and M.C. Santhosh Kumar	Flying Spot Laser Thermography for the Detection of Surface Breaking Cracks on steal			National seminar and International exhibition on Non-Destructive Evaluation, NDE-2013		2013
R. Ameeruddin, M.C. Santhosh Kumar	Growth of Vertically Aligned ZnO Nanowires for Light Emitting Diodes (LED's) Applications			International conference on thin films and applications (ICTFA)	Sastra Uinveristy, Thanjavur	2013
R. Amiruddin, Akshay Srinivas, M. C. Santhosh Kumar	Fabrication of Hydrophobic ZnO Surfaces on SS304 Substrates			National Conference on Advanced Materials for Emerging Technologies	Sri Ramakrishna Mission Vidyalaya College of Arts and Sciences, Coimbatore	2013
Saheer Cheemadan, K. Keerthana and M.C. Santhosh Kumar	Analysis of Structural and Electrical Properties of Aluminium doped lead sulphide			National Conference on Advanced Materials for Emerging	Sri Ramakrishna Mission Vidyalaya College of Arts and Sciences,	

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				Technologies	Coimbatore	
R. Swapna, R. Amiruddin, M. C. Santhosh Kumar	Aging and Annealing Effects on Properties of Ag-N Dual Acceptor Doped ZnO Thin Films			57 th DAE Solid State Physics Symposium	IIT Bombay, Mumbai, India	2012
R. Swapna, M. C. Santhosh Kumar	Ag-N dual Acceptor Doping and Fabrication of n-ZnO:Eu/p-ZnO:(Ag, N) Homojunctions by spray pyrolysis			1 st International conference on Emerging Advanced nanomaterials, (ICEAN 2012)	The University of Queensland, Brisbane, Australia	2012
R. Swapna, M. C. Santhosh Kumar	Fabrication of the low Resistive Ag-N doped Nanocrystalline p-type ZnO Thin films			International Conference & Workshop on nanostructured Ceramics & other Nanomaterials (ICWNCN-2012),	University of Delhi, Delhi,	2012
R. Swapna, M. C. Santhosh Kumar,	Effect of Annealing on the properties of MZO thin films by spray pyrolysis			International conference on Advanced Materials,	PSG College of Technology, Coimbatore	2011
R. Swapna, T. Prasada Rao, M. C. Santhosh Kumar	Effect of molybdenum doping on structural, optical and electrical properties of nanostructured ZnO thin films			3 rd International conference on Frontiers in Nanoscience and Technology (Cochin nano-2011)	CUSAT, Kochi, Kerala, India	2011
K. Anitha, J. Nasiha, M.C. Santhosh Kumar	Ferromagnetism in Cobalt doped CeO ₂ nanocrystals by co-precipitation			3 rd International conference on Frontiers in Nanoscience and Technology (Cochin nano-2011)	CUSAT, Kochi, Kerala, India	2011
T. Prasada Rao, M. C. Santhosh Kumar	Realization of stable p-type ZnO thin films using a Li-N dual acceptor doping for optoelectronic applications			Frontiers in Optics 2010/ Laser science XXVI	Rochester, New York USA	2010
Govind Kumar Sharma, G. Anil Kumar, M.C. Santhosh Kumar, C. Babu rao and T. Jayakumar,	Automatic classification of defects in ultrasonic inspection using artificial neural network			National Seminar on NDE (NDE 2009),	Tiruchirappalli	2009
Govind Kumar Sharma, K.P. Amarnath, M.C.	Enhancement of signal to Noise ratio in Ultrasonic NDE			National Seminar on NDE (NDE	Tiruchirappalli	2009

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Santhosh Kumar, C. Babu rao and T. Jayakumar,	using Wavelet Transform			2009)		
T. Prasada Rao, M.C. Santhoshkumar,	ZnO thin films for optoelectronics applications			Frontiers in Optics 2009/ Laser science XXV”,	California, USA,	2009

(C) Books & Monographs

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number
M.C. Santhosh Kumar	Engineering Physics	Nalpat Publishers	2004	ISBN 81-901761-1-0
M.C. Santhosh Kumar	Advanced Physics for engineers	Nalpat Publishers	2010	ISBN 978-81-901761-7-0