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 20 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, nanomaterials, and Non-destructive Evaluation. Thirteen doctoral students have completed their degree under his guidance and five students pursuing Ph.D. in his research group. He was principal investigator for two major DST sponsored research projects. He has published more than 100 International papers in reputed journals.

1. Name: **Dr. Santhosh Kumar M.C.**
2. Designation: Professor
3. Office Address: Department of Physics
   National Institute of Technology,
   Tiruchirappalli, Tamil Nadu, India
4. Telephone (Direct) (Optional): 04312503611
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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, and Non-destructive Evaluation

7. Employment Profile

Job Title	Employer	From	To
Professor	National Institute of Technology, Tiruchirappalli, Tamil Nadu, India	March 2024	Till date
Associate professor	National Institute of Technology, Tiruchirappalli, Tamil Nadu, India	March 2018	March 2024
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

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	I Class	Physics
B.Sc.	Calicut University	1995	I Class	Physics (main)
SSLC	Kerala State Board	1990	I Class	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	June 2020
Associate Dean (Research & Consultancy)	Office of Dean Research and Consultancy	January 2020	January 2023
B.Sc. B.Ed department co-ordinator	Department of Physics	June 2024	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	2024

Board of Studies Member	Gayatri Vidya Parishad College of Enginnering, Visakhapatanam, Andra Pradesh	2018	2021
Board of studies Member	PSNA College of Engineering and Technology (autonomous), Dindigul, Tamil Nadu	2022	
Board of studies Member	Periyar Maniammai Institute of Science & Technology (deemed to be University), Vallam, Thanjavur, Tamil Nadu	2022	

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization

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

1. Sensors and Transducers
2. MEMS and Microsystems
3. Solar Photovoltaic Technology
4. Semiconductor Physics
5. Digital Radiography and Computed Tomography
6. Neutron Radiography

(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. (Applied Electronics/Applied Physics)
5. VLSI Technology - M.Sc. (Applied Electronics)
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. (Applied Physics/Physics)
10. Electromagnetic theory - M.Sc. (Physics)
11. Electronics – M.Sc. (Physics)
12. Surface NDE Techniques – M.Tech. (NDT)

(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	Advanced phased array ultrasonic testing for thick austenitic and ferritic welds	Suggu Hemanth	May 2024	Dr. Krishnan Balamsubramian, IIT Madras
2	Development of non-destructive method for hardness and case depth evaluation of induction hardened tube shaft	Sourav Bhowmik	May 2023	Shivangouda Biradar Dana Anand India Pvt. Ltd
3	Analysis of ultrasonic signal from defects in steel with COMSOL and auto-detection of defects with machine learning	Hindocha Shyam Pravinbhai	May 2022	
4	Development and validation of inspection procedure to identify vertical defect present in thick wall plate using Phased Array and TOFD	Vishnu V Gupthan	May 2021	Mr.Gunasekar.S WRI-BHEL
5	Improvement in Quality of Neutron Radiography Images of a Low Flux Neutron Source Using Image Processing Tools	Shaheer Ali V	June 2020	Girish N. Nambodiri VSSC
6	Defect Characterization in Laminate and Sandwich Honeycomb Composite Specimens Using Pulse Theromgraphy	Abdul Bari K P	June 2020	S. Hari Krishna VSSC
7	Development of Algorithm for Automatic Defect detection in X-ray images of Welds	Adithya Murali	May 2019	Dr. T. Saravanan IGCAR
8	Assessment of eddy current inspection on aerospace structure through numerical simulation	Sreechand G. S	May 2018	Mr. Bharath k Kodumuru
9	Establishment Of Phased Array Ultrasonic Technique For Full Penetration Header Stub Welding	Austin C	May 2017	Mr.Gunasekar.S
10	Replacement Of Radiography Technique With Phased Array And TOFD For Tubes With Smaller Thickness	Sandeep Kumar	May 2016	Mr.Gunasekar.S
11	Automatic Detection And Classification Of Defects In Radiographs	Rupam Baruah	May 2016	Mr.Gunasekar.S
12	Inspection Of Surface Breaking Flaws Using Laser Generated Rayleigh Waves	Akhil B S	May 2015	Dr.Krishnan Balasubramanian
13	Estimation Of Moisture In Blast Furnace Coke By Non – Invasive Technique	Neelkamal Kulhara	May 2015	Dr.Arpita Ghosh
14	Flying Spot Laser Thermography For Fast Detection Of Surface Breaking Cracks Of Stainless Steel	Nithin P V	May 2014	Prof.Krishnan Balasubramanian
15	Non-Destructive Characterization Of Cracks In Cladded Pressure Vessels	Sarath Chandran M	May 2014	Sri.Paritosh Nanekar

16	Low Frequency Eddy Current Inspection On Reformer Tubes	Sachin Sajeev	May 2013	Dr.Krishnan Balasubramanian
17	Defect Detection In GFRP Specimen And Air Gap Measurement In Cylindrical Geometries Using Infrared Thermography	R. Shunmuga Sundaram	May 2012	Dr.John Philip
18	Angular Resolution In Guided Waves	S. Jagajith	May 2011	-
19	Defect Sizing And Profile Mapping Using Digital Radiography	Visakh Chandran	May 2011	-
20	Influence Of Thresholding Procedures In Noise Reduction Of Ultrasonic Signals Using Wavelet Processing	Amarnath K P	May 2010	Dr.C.Babu Rao
21	Automated Classification Of Defects In Ultrasonic Inspection Using Artificial Neutral Networks	Anil Kumar G	May 2010	Dr.C.Babu Rao
22	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
23	Pipeline Girth Weld Automated Inspection Using Phased Array Zone Discrimination Technique For Improved Probability Of Detection And Sizing	S.Rajasuhas	May 2009	I.Mohsin
24	Ultrasonic Phased Array Technique- An Alternative Nde Technique For The Inspection Of Pipeline Tie-In Welds	N.Hemachandra Reddy	May 2009	I.Mohsin
25	Thermal Imaging Of Adhesively Debonded Structures	Siva Sankar Y	May 2008	Dr.John Philip
26	Development Of Magnetostrictive Transducers For Structural Health Monitoring Of Plate Like Structures	S.Selva Ganeshan	May 2007	Dr.Krishnan Balasubramanian
27	Optimization Of Al Doped ZnO TCO Thin Films For DSSC Electrode Applications	Akash Arya	May 2013	Dr.R.Prasanth
28	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	Effect of deposition time on CdS thin Films by chemical bath deposition method for Cu_2FeSnS_4 based devices	Kathir K	May 2023	
2	A study on the effect of thickness of spin coated PbS thin films and fabrication of FTO/AZO/PbS/Ag Heterojunctions Devices	Nisham N	May 2023	
3	Room Temperature Deposition of Cu_2ZnSnS_4 thin Films by SILAR technique for photovoltaic Applications	Shivam Gupta	May 2023	

4	Preparation and Characterization of CuO Thin Films by RF- Magnetron Sputtering and Fabrication of Transparent p-n Heterojunction Devices	Ankit Kumar	April 2022	
5	On the effect of Cu variation and annealing of Cu-Zn-S thin films by SILAR deposition for photovoltaic applications	Mahammed Suleman Patel	April 2022	
6	Study on In doped ZnO thin films as electron transport layer for lead free Perovskite solar cells and its simulation	Ebin Joseph	May 2021	
7	Preparation and characterization of ITO thin films by a two stage process	Akash Kumar	June 2020	
8	Deposition and Characterization of Copper Indium sulphide Absorber Layer for Solar Cell Applications	Lucky Donald Lyngdoh Kynshi	June 2020	
9	A Study on the Photocatalytic Properties of RF Sputtered $Ti_{1-x}Zn_xO$ Thin Films	P Sasikumar	May 2019	
10	Synthesis and Characterisation of Cu_2ZnSnS_4 for solar cell application	Anupama A	May 2019	
11	Preparation and characterization of Sb_2S_3 thin films by physical vapour deposition	Stephin James	May 2018	
12	Ga Doped CdS thin films grown by chemical bath deposition for solar cell applications	Aiswarya N. K.	May 2018	
13	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	
14	Studies On Optical And Electrical Properties Of Zn Doped Cds Thin Films And Fabrication Of SnS/CdS Heterojunctions	Haritha K.H	May 2017	
15	Deposition Of Super Hydrophobic ZnO Layers For Self-Cleaning Applications	Sruthy Poulose	May 2016	
16	Deposition Of SnS Absorber Layer For Thin Film Solar Cell Applications	B.Hemanth Kumar	May 2016	
17	Deposition Of Cu-Zn-S Thin Films, Using Successive Ionic Layer Adsorption And Reaction (SILAR) Method	Edwin Jose	May 2015	
18	Effect Of Substrate Temperature of CdO Thin Film By RF Magnetron Sputtering	Semin Xavier	May 2015	
19	An investigation on the deposition and characterization of Phosphorous and Nitrogen dual acceptor doped p-type ZnO thin Films	Sebin Devasia	May 2014	

20	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	
21	Analysis Of Structural And Electrical Properties Of Aluminium Doped Lead Sulphide Thin Films Prepared By CBD Method	Keerthanaa.K	May 2013	
22	Deposition Of Zinc Oxide Thin Films On Stainless Steel (SS304) Substrate By Spray Pyrolysis	Akshay Srinivas	May 2013	
23	Preparation Of PBS Thin Films By Chemical Bath Deposition CBD And Formation Of n-ZnO/P-PbS Heterojunctions	Priyadarshini. M	May 2012	
24	Deposition Of Na And N Dual Acceptor Doped p-Type ZnO Nanorods	A. Deepika	May 2012	
25	Room Temperature Ferromagnetism In $Ce_{1-X}Co_xO_{2\delta}$ Nanocrystals	Anitha. K	June 2011	
26	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	
27	Preparation, Structural And Optical Properties Of $Ce_{1-X}Zn_xO_2$ Thin Films	Vasumathy. R	May 2010	
28	Synthesis And Luminescence Properties Of Eu^{3+} And Tb^{2+} Doped ZnO Based Phosphor	A Safarulla	May 2009	
29	Effect Of Substrate Temperature And Annealing On The ZnO Thin Films By Spray Pyrolysis	S.Anbumozhi Angayarkanni	May 2009	
30	Ultrasonic Spotlight Tracker	Tamilselvi.S	May 2008	
31	Embedded Web Server For Controlling And Monitoring Devices	Aneesh.N	May 2007	
32	Synthesis Of Doped Sno_2 Nano Composite By Hydrolysis Process	M.Saraswathi	April 2008	Mrs.K.Maithilee
33	Synthesis Of SnO_2-Al_2O_3 Nano Composite By Chemical Precipitation Method	S.Kowsalya	April 2008	Mr.P.Sakthivel
34	Preparation And Charachterization Of Cu Doped PbS Thin Films	G.Charaniya	April 2008	Mrs.K.Maithilee
35	Preparation And Charachterization 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
Realization of crack free thick films PZT for application to piezo cantilever fabrication	DST-SERC	2007	2010	As Co-PI Completed
Fabrication of ZnO nanoparticle based light emitting devices by screen printing technique	TEQIP	2007		As PI Completed
Preparation of p-ZnO films by dual acceptor doping and fabrication of homo-junction devices	DST Fasttrack Scheme	2010	2013	As PI Completed
Deposition of earth abundant ternary CuZnS thin films and Fabrication of Cadmium free solar cells.	DST-CERI 2015	2016	2019	As PI Completed
Mn based melt spun ribbons for magnetic cooling of naval equipments	NAVAL RESEARCH BOARD (NRB)	2022	2025	As Co-PI Ongoing

15. Number of PhDs guided: 13

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
T. Prasada Rao	Preparation and characterization of n-type and p - type ZnO thin films for optoelectronic applications	Supervisor	2011
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
R. Amiruddin	Aqueous Chemical Growth of ZnO Nanowires and Fabrication of High speed Ultraviolet Photodiodes	Supervisor	2017

Srinivasa Reddy Tippasani	Deposition and Characterization of Tin Sulphide and Copper Tin Sulphide Thin films-Prospective Absorber Layers for Solar Cells	Supervisor	2018
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	2018
B. Hemanth Kumar	Deposition and Characterization of Indium Sulphide and Copper Antimony Sulphide Thin Films for Optoelectronic Device Applications	Supervisor	2021
Edwin Jose	A Study on the SILAR Deposition of Cu-Zn-S Thin Films and its Application as Hole Transport Layer in Organic Solar Cells.	Supervisor	2021
Devika Mahesh	An investigation on the effect of doping and seed layer morphology on the growth, properties and photocatalytic activity of 1D ZnO nanorods	Supervisor	2022
Girish N. Namboodiri	Investigations on the Detection of Sealed Low-density Materials using Thermal Neutron Radiography and 3D X-ray Computed Tomography	Supervisor	2022
Sai Guru Srinivasan S	Deposition of Cu_2O and CuO thin films by reactive sputtering for heterojunction devices, resistive random access memory and photocatalysis	Supervisor	2022
Aabel P	Fabrication of Cadmium Free Solar Cells and Resistive Memory Switching Devices based on CuZnS and Cu_2ZnSnS_4 Thin Films	Supervisor	2023
John Paul	Graphene Oxide Incorporated, Post-Transition Metal Doped Zinc Oxide Thin Films and Nanorods for Efficient Dye Degradation	Supervisor	2024
Nidheesh Kumar B	Thickness measurement and flaw detection of low density materials on different substrates using terahertz time domain spectroscopy and imaging	Supervisor	2024

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
6-8, July 2023	International Conference on Thin Films & Nanotechnology: Knowledge, Leadership, & Commercialization,	International	Speaker	Department of Physics, Indian Institute of Technology Madras, India	Chennai, India
19th-21st December 2019	3rd International Conference on Solar Energy Photovoltaics (ICSEP-2019)	International	Participant	School of Electrical Engineering, KIIT (Deemed to be University),	Bhubaneswar, Odisha
12 -15 July 2016	8th International conference on Technological Advancement of Thin Films & Surface Coatings.	International	Participant	Thin Film Society	Singapore
20-23 February 2016	4th 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	2nd International Conference on Optoelectronic Materials and thin Films for Advanced Technology	International	Participant	CUSAT	Kochi, Kerala
22 – 25 October 2012	1st International conference on Emerging Advanced nanomaterials	International	Participant	The University of Queensland	Brisbane, Australia
14 -17 August 2011.	3rd 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 XXVI	International	Participant	SPIE	Rochester, New York USA
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	5th International Conference on Trends in Industrial Measurements and Automation	International	participant	NIT-T	Tiruchirappalli
11-16, December	Workshop on Mems and Smart	National	Participant	ISSS	Bangalore

2006	structures				
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
Workshop on Innovation, Start-up, and Technology Transfer	National level	24 - 29 January 2022	Coordinator	NITT
Webinar series on Research Grants & Patent Filing	Local level	11 -28 October 2020 (5days)	Coordinator	NITT
National symposium in Physics-InPhyNITT-2020	National level	6th March 2020	Staff convener	NITT
National symposium in Physics-InPhyNITT-2019	National level	6th March 2020	Staff convener	NITT
National symposium in Physics-InPhyNITT-2018	National level	09 March 2018	Staff convener	NITT
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.	Local level	13.02.2013	Convener	NITT

Paulraj Manidurai from University of Concepcion, Chile				
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
Deposition and Characterization of Thin Films and Nanostructures	20th March 2024	Expert talk in One week high end workshop (Karyashala) Advance characterization techniques for nanomaterial research, NIT Tiruchirappalli, India
Semiconductor Nanostructures and Thin Films for Solar Energy Harnessing	12th March 2024	Invited talk in India's Techade - India Semiconductor Mission, IIIT Tiruchirappalli, India
Nanostructures and Thin Films for Solar Energy Harnessing and Environmental Remediation	13th February 2024	ATAL FDP on Nanomaterials: Methods and Applications, College of Engineering, Adoor, Kerala, India
Metal oxide thin films and 1 D nanostructures for UV-detectors and Photocatalysis	19th January 2024	National Conference on Functional Materials and Applications, Dept. of Physics, Cochin University of Science And Technology, Kochi, India
Ternary and Quaternary Earth Abundant Semiconductors for Thin Film Solar Cells	28th November 2023	International Conference on Recent Advances in Physical Science, Bharata Mata College, Thrikkakara, Kochi, India
Recent advances in thin film solar cells	11th September 2023	FDP on Research Frontiers in Physics, Govt College of Technology, Coimbatore, India
Photocatalytic activity of indium doped zinc oxide seed layers and one-dimensional nanorods under solar	8th July 2023	International Conference on Thin Films & Nanotechnology: Knowledge, Leadership, & Commercialization, Department of Physics

irradiation		Indian Institute of Technology Madras, India
Preparation of thin films for optoelectronic and solar cell applications	24th February 2023	National Seminar on deposition and characterization of thin film nanomaterials, Indira Ganesan college of Engineering, Tiruchirappalli, India
Emerging Alternate Photovoltaic Technologies	17th March 2022	Indo-Japan workshop on Advancement in concentrator Photovoltaic system and its thermal management, Department of Mechanical Engineering, NIT Trichy
Emerging Materials for solar photovoltaic technology	25thFebruary 2022	Workshop on Nanomaterials for Emerging Applications NMEA-2022, Department of Physics, NIT-Trichy
Some novel ternary semiconductors for thin films solar cells	24th August 2021	Invited talk in K. Ramakrishnan college of Engineering, Samayapuram Trichy
Transparent Conducting Oxide Thin Films: Preparation and Applications	16th August 2021	ATAL-FDP on Fabrication and characterization of thin films for future technological applications, The National Institute of Engineering, Mysuru,
Recent Advances in thin Film Solar Cells	11th August 2021	International workshop on thin films and nanomaterials, Sathyabhama Institute of Science and Technology, Chennai
Recent Advances in Cadmium Free Ternary Chalcogenide Solar Cells	16th July 2021	Second International Conference on Energy, Environment and Advanced Materials for a Sustainable Future (ICEEAMSF-2021), Kongu Engineering College, Perundurai - 638 060, Erode, Tamil Nadu, India,
Advances in Materials for Solar Photovoltaics	1st July 2021	International Conference on Advanced Materials (ICAM 2021), Department of Physics, University of Calicut, Kerala, India – 673635
Materials for Solar Energy: Present and Future Prospects	21st May 2021	Invited talk in AICTE Margdharshan Workshop on Recent Research Trends and Future Research Directions in Solar Energy Technologies, Department of Electrical and Electronics, NIT Trichy
Solar Energy: Present and Future Prospects	4th December 2020	Invited talk, Department of Physics, VIT Vellore
Transparent Conducting Oxides: Preparation and Applications	5th November 2020	Refresher Course in Material Sciences: Recombinant Memetics, University of Calicut,
Thin film solar cells and Nanomaterials	31st January 2020	TNSCST & NCST sponsored National Seminar on Popularization of Solar

		Energy and Materials for Solar Cell (SEMSC – 2020), Periyar EVR College (Autonomous), Tiruchirappalli – 620 023
Recent Advances in thin Film Solar Cells	12th July 2019	TEQIP-III Sponsored FDP on Recent Advances in Solar Systems, Department of Mechanical Engineering, NIT Calicut
Physics of Photovoltaic cells	9th May 2019	2-week workshop on Recent Advances in Solar Energy Technologies for Sustainable Development, Department of Mechanical Engineering, NIT Tiruchirappalli
Basics of Thin Films	25th February 2019	SPECTRUM 2018-19. National Conference on nanostructured materials, Muhammed Abdurahiman Memorial Orphanage College, Mukkam, Kozhikode,
Solar cell technologies: present and future perspectives	18th February 2019	Prof. S.T. Rajan endowment lecture, St. Joseph's College, Tiruchirappalli
Advances in Thin Film Solar Cells	5th December 2018	Two weeks workshop on Applications of Nanotechnology in Solar Systems, Department of Mechanical Engineering, NIT Tiruchirappalli
Thin Films for optoelectronics and Mechanical applications	23rd March 2018.	National conference on Nanomaterials, R.V.S. Kumararn Arts and Science College, Ayyalur, Dindigul,
Metal oxide nanostructures for high speed uv-detector and some mechanical applications	04th January 2018	Refresher course in nanosciences, UGC-Human Resource development Centre, Bharahidasan University, Tiruchirappalli – 620023,
Thermal evaporation, Ion Beam Sputtering and Ion Plating	27th 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	22nd September 2017	Invited talk at Department of Physics, Crist College, Irigalakkuda, Kerala,

Metal oxide nanostructures for high speed ultraviolet Photodiodes	14th February 2017	National Seminar on Recent Advancements in Photonics – NSAP2017, Vimala College, Thrissur, Kerala,
Thin Films for Optoelectronics and Photovoltaic Applications	7th 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	2nd 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.	23rd January 2016	National level conference on Technologies Behind Nanoscience : Fabrication, diagnostics and applications, MA College, Kothamangalam,
Thin Film Technology and its applications	15th January 2016	STTP on Recent Advances in Applied Physics, SOE, CUSAT, Kochi-22,
Evolution of Light Sources	11th January 2016	STTP on Recent Advances in Applied Physics, SOE, CUSAT, Kochi-22,
Thin Film nanostructures and applications	19th December 2015	FDP on Green nanotechnology in materials engineering and energy 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	17th November 2015	TEQIP-II sponsored expert talk in College of Engineering, Adoor, Kerala,
Metal oxide nanostructures for optoelectronics and Mechanical applications.	6th November 2015	Modern trends in physics research (MTPR-2015) St. Stephen's College Pathanapuram, Kollam, Kerala,

Transparent oxide nanostructures and applications	17th to 30th July 2015	Anna University Bharathidasan Institute of Technology, Tiruchirappalli
Transparent oxide nanostructures	26th to 28th March 2014	International conference on Advanced materials and its applications, 26th to 28 th March 2014, Alphonsa College, Pala, Kerala
Transparent oxide nanostructures and its applications	19th February, 2014	KL University, Vaddeswaram, Andra Pradesh
Thin film deposition and applications	18th -21st 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	25th January 2013	Govt. Brennen College, Thalasery, 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	TEQIP sponsored workshop, Govt. Engg College, Salem

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Life member	ISTE	LM 75735
Life member	ISNT	LM

20. Academic Foreign Visits

Country	Duration of Visit	Programme
South Korea	25th November-24th December 2007	TEQIP training at KAIST
USA	October 24-28, 2010	Frontiers in Optics 2010/ Laser science XXVI", Rochester, New York USA,
Australia	22nd – 25th October 2012	1st International conference on Emerging Advanced nanomaterials, The University of Queensland, Brisbane, Australia,
Singapore	12th -15th July 2016	8th 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
Neju Mathew Philip, and M. C. Santhosh Kumar	Tailoring the opto-electronic properties of SnS thin films by Indium doping and fabrication of heterojunction diodes	Materials Science in Semiconductor Processing	183	108748	2024	4.2
Neju Mathew Philip, and M. C. Santhosh Kumar	Tuning of electronic properties of co-evaporated Ag: SnS thin films for heterojunction devices	J Mater Sci: Mater Electron	35	075018	2024	2.8
T Srinivasa Reddy; Vijaya Krishna S; A. Vinaya	Facile Synthesis and Characterization of PbS thin films	Semiconductor Science and Technology	39		2024	1.9

Kumar; Ramanjaneyulu M; Rajasekhar N; M C Santhosh Kumar	doped with various Aluminum Concentrations for Photovoltaic Applications					
Devika Mahesh, John Paul, and M. C. Santhosh Kumar	Photocatalytic activity of indium doped zinc oxide seed layers and one dimensional nanorods under solar irradiation	J Mater Sci: Mater Electron	35	86	2024	2.8
John Paul, K. Dhivyaprasath, M. Ashok, M.C. Santhosh Kumar	Photodegradation of methylene blue dye using graphene oxide incorporated, post-transition metal doped zinc oxide thin films by spray pyrolysis, ,	Physica Scripta	99	025953	2024	2.6
John Paul, M.C. Santhosh Kumar,	Enhanced photocatalytic activity of graphene oxide incorporated ZnO nanorods doped with post-transition metals	Ceramics International	50	9081-9088	2024	5.1
B Nidheesh Kumar, Sachinlal Aroliveetil, M C Santhosh Kumar, M Nallaperumal, S Thiruppathirajan, K P Sruthi Krishna,Krishnan Balasubramanian, K K Moideenkutty and L Mohan Kumar	Nondestructive evaluation of cork phenolic-based aerospace structure using Terahertz time domain spectroscopy and imaging	Nondestructive Testing and Evaluation	39	905–922	2024	2.6
B Nidheesh Kumar, Sachinlal	Thickness Measurement of Polychlorotrifluoroet	Nondestructive Testing and		1–17	2024	2.6

Aroliveetil, M C Santhosh Kumar, M Nallaperumal, S Thiruppathirajan, K P Sruthi Krishna, Krishnan Balasubramanian, K K Moideenkutty and L Mohan Kumar	hylene Coating over Metallic Seal Using Terahertz Time-Domain Spectroscopy	Evaluation				
P Aabel; S Sai Guru Srinivasan; R. Amiruddin; M.C. Santhosh Kumar	On the memory switching property of ternary CuZnS thin films	Applied Physics A	129	827	2023	2.5
B Nidheesh Kumar, M C Santhosh Kumar, M Nallaperumal	Nondestructive Evaluation of Cryofoam with uneven surface by Continuous Wave Terahertz Imaging using Dynamic Depth Focusing Technique	Journal of Nondestructive Evaluation	42	103	2023	2.6
N. Aravind and M.C. Santhosh Kumar	Effect of substrate temperature on the properties of Cu_2FeSnS_4 thin films by vacuum spray pyrolysis and fabrication of p-n heterojunction devices	Journal of Materials Science: Materials in Electronics,	34	1718	2023	2.8
John Paul, K. Dhivyaprasath, M. Ashok, M.C. Santhosh Kumar	Graphene oxide incorporated zinc oxide thin films by spray pyrolysis for efficient photodegradation of methylene blue	Chemistryselect	8	e202300034	2023	1.9
P. Aabel, A. Anupama and M. C. Santhosh	Fabrication of Cu_2ZnSnS_4 Based Cadmium Free	Semiconductor Science and	38	045010	2023	1.9

Kumar	Heterojunction Solar Cells	Technology				
P Aabel; S Sai Guru Srinivasan; R. Amiruddin; M.C. Santhosh Kumar,	Bi-Polar Switching Properties of FTO/CZTS/Ag Device	Journal of Materials Science: Materials in Electronics,	34	601	2023	2.8
B. Hemanth Kumar, N. Ramesh Reddy, M.C. Santhosh Kumar,	Cu rich Copper Indium Sulfide thin films deposited by co-evaporation for photovoltaic applications	Journal of Materials Science: Materials in Electronics	34	341	2023	2.8
Shahnaz Kossar, R. Amiruddin, Asif Rasool, M.C. Santhosh Kumar, Nagamalleswari Katragadda, Pranab Mandal, Nafis Ahmed	Study on ferroelectric polarization induced resistive switching characteristics of neodymium-doped bismuth ferrite thin films for random access memory applications	Current Applied Physics	39	221-229	2022	2.4
Saheer Cheemadan; M. C. Santhosh Kumar	Optoelectronic Properties of Highly Transparent Conducting CdO:ZnO Composite Thin Films by RF-Magnetron Sputtering, ,	Journal of Materials Science: Materials in Electronics	33	15638	2022	2.8
Asif Rasool, R. Amiruddin, Shahnaz Kossar, M.C. Santhosh Kumar	Multifunctional n-ZnO/MoO3/PEDOT: PSS-based hybrid device for high-speed UV light detection and ReRAM applications	Journal of Materials Science: Materials in Electronics	33	2090	2022	2.8
Devika Mahesh, John Paul, M.C. Santhosh Kumar	Photocatalytic degradation of Methylene Blue by ZnO seed layers and 1D nanorods	Materials Today: Proceedings	58	882-885	2022	
T, Srinivasa Reddy, M.C.	Influence of substrate temperature on	Materials Science Forum	1048	189	2022	

Santhosh Kumar,	structural and optical properties of co-evaporated Cu2SnS3/ITO Thin Films					
Girish N Namboodiri, V ShaheerAli, M C Santhosh Kumar, KK Moideenkutty, M Nallaperumal, S Umasankar, G Levin	Improvements in quality of Neutron Radiography images of pyro components used in aerospace applications using image processing tools	Advances in Non-destructive Evaluation. Lecture Notes in Mechanical Engineering			2021	
R. Swapna, K. Venkateswarala u, M. C. Santhosh Kumar	Enhanced Physical Properties of ZEO Thin Films for Device Applications,	Materials Today: Proceedings	39	1620	2021	
Girish N Namboodiri, Manu Joseph, M C Santhosh Kumar, M Nallaperumal, K K Moideenkutty, M. Arumugam, L Mohan Kumar, J Jayaprakash	X-ray Computed Tomography and Thermal Neutron radiography for detection of low dense compounds inside pyro elements used in space applications	European Physical Journal Plus	136	945	2021	2.8
T Srinivasa Reddy, M.C. Santhosh Kumar	Temperature-dependent properties of Co-evaporated CuS Thin Films	Brazilian Journal of Physics	51	1575-1583	2021	1.5
S. Sai Guru Srinivasan, B. Govardhanan M. Ashok, M.C. Santhosh Kumar	Influence of deposition time on the visible-light-driven photocatalytic activity of Cu_2O thin films by reactive sputtering at room temperature	Materials Letters	284	128980	2021	2.7
S Kossar, R Amiruddin, A Rasool, NV Giridharan, D Dhayanithi, M.C. Santhosh Kumar	Ferroelectric polarization induced memristive behaviour in bismuth ferrite ($BiFeO_3$) based memory devices	Superlattices and Microstructures	148	106726	2020	2.658
Asif Rasool, R. Amiruddin, I. Raja Mohamed, M C Santhosh Kumar	Fabrication and characterization of resistive random access memory (ReRAM) device using molybdenum trioxide (MoO_3) as a switching layer	Superlattices and Microstructures	147	106682	2020	2.658

Asif Rasool, R. Amiruddin, Shahanaz Kossar, M C Santhosh Kumar	Realization of In:ZnO/PEDOT:PSS based multifunctional device for ultraviolet (UV) light detection and resistive switching memory applications	Journal of Applied Physics	128	044503	2020	2.7
P. Aabel, M.C. Santhosh Kumar	Deposition and characterization of earth abundant CuZnS ternary thin films by vacuum spray pyrolysis and fabrication of p-CZS/n-AZO heterojunction solar cells	International Journal of Energy Research	44	7778-7788	2020	4.3
Asif Rasool, M C Santhosh Kumar, M H Mamat, C Gopalakrishnan, R. Amiruddun	Analysis on different detection mechanisms involved in ZnO-based photodetector and photodiodes	Journal of Materials Science: Materials in Electronics	31	7100-7113	2020	2.8
D Mahesh, M C Santhosh Kumar	Synergetic effects of aluminium and indium dopants in the physical properties of ZnO thin films via spray pyrolysis	Superlattices and Microstructures	142	106511	2020	2.658
Girish N Namboodiri, M C. Santhosh Kumar, M Nallaperumal, S Umasankar, G Levin	Detection and Characterisation of Low Dense Charges Inside Metallic Devices Used in Space Applications by Neutron Radiography	Journal of Nondestructive Evaluation	39	16	2020	2.6
B. Hemanth Kumar, S Shaji, M C Santhosh Kumar	Effect of substrate temperature on properties of co-evaporated copper antimony sulfide thin films	Thin Solid Films	697	137838	2020	2.0
E Jose, M Mohan, M A. G. Namboothiry, MC Santhosh Kumar	Room temperature deposition of high figure of merit p-type transparent conducting Cu–Zn–S thin films and their application in organic solar cells as an efficient hole transport layer	Journal of Alloys and Compounds	829	154507	2020	5.8
B Hemanth Kumar, MC Santhosh Kumar,	On the conversion of amorphous In_2S_3 thin films to polycrystalline In2S3 and to In_2O_3 through thermal	Materials Science in Semiconductor Processing	111	104983	2020	4.2

	oxidation process					
P R Jyothi Sankar, S Venkatachalapathy, M C Santhosh Kumar	Effect of hydrophilic coating on mesh wicks used in heat pipes	Surface Engineering	36	680-686	2020	2.3
T. Srinivasa Reddy, M.C. Santhosh Kumar	Fabrication of visible light photodetector using co-evaporated Cu_2SnS_3 thin films	Journal of Ovonic Research	15	365-376	2019	0.9
B. Hemanth Kumar, M.C. Santhosh Kumar	Indium sulfide based metal-semiconductor-metal ultraviolet-visible photodetector	Sensors & Actuators A: Physical	299	111643	2019	4.1
B. Hemanth Kumar, S. Shaji, M.C. Santhosh Kumar	Fabrication of visible light photodetector using co-evaporated Indium Sulfide thin films	Journal of Materials Science: Materials in Electronics	30	17986-17998	2019	2.8
Saheer Cheemadan, M. C. Santhosh Kumar, Muthukumar Krishnan, Rathinam Arthur James	Biocidal properties of sputtered CdO:ZnO multi-component thin films for potential use in pathogeic bacteria control	Materials Research Express	6	104009	2019	1.8
S. Sai Guru Srinivasana B. Govardhanan, P. Aabel, M. Ashok, M.C. Santhosh Kumar	Effect of oxygen partial pressure on the tuning of copper oxide thin films by reactive sputtering for solar light driven photocatalysis	Solar Energy	187	368-378	2019	6.0
Devika Mahesh, B. Hemanth Kumar and M. C. Santhosh Kumar	Enhanced luminescence property of 1 D nanorods realised by Aqueous Chemical Growth on Indium doped Zinc Oxide thin films	Thin Solid Films	686	137279	2019	2
Reshmi Krishnan, R., Kavitha, V.S., Santhosh Kumar, M.C., Gopchandran, K.G., Mahadevan Pillai, V.P	Properties of Au incorporated In_2O_3 films	Materials Science in Semiconductor Processing	93	134-147	2019	4.2
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 J Phys	93	185-195	2019	1.6
Devika Mahesh, and M. C.	An investigation on the In doping of ZnO thin	AIP Conference	1942	080049	2018	

Santhosh Kumar	films by spray pyrolysis	Proceedings				
Saheer Cheemadan, M.C. Santhosh Kumar	Effect of Substrate Temperature and Oxygen Partial Pressure on RF Sputtered NiO thin films	Materials Research Express	5	046401	2018	1.8
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	2.8
S Thiruvenkadam, 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 Snx S 4 thin films prepared by spray pyrolysis technique	Physica B: Condensed Matter	533	22–27	2018	2.8
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_2ZnSnS_4 Thin Films for Absorber Layer	J Inorg Organomet Polym	27	1556	2017	3.9
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		1.9
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	5.8
T. srinivasa Reddy; M.C. Santhosh Kumar, S. Shaji	Deposition rate dependant formation and properties of Sn_2S_3 and SnS thin films by co-evaporation	Mater. Res. Express	4	046404	2017	1.8
S.P.	Modeling of Fume	Metallurgical			2017	1.834

Sivapirakasam, Sreejith Mohan, M.C. Santhosh Kumar, M. Surianarayanan	Formation from Shielded Metal Arc Welding Process	and Materials Transactions B				
T. Srinivasa Reddy, B. Hemanth Kumar and M. C. Santhosh Kumar	Effect of annealing on the optical properties and photoconductivity of SnS thin film	AIP Conference Proceedings	1832	080043	2017	
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_2O_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	3.9
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	2.4
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_2S_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	5.1
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	1.1
C.S. Sujith Kumar, S. Suresh,	Effect of surfactant addition on	Experimental Thermal and	70	325-334	2016	2.8

A.S. Praveen, M.C. Santhosh Kumar, Vishakh Gopi,	hydrophilicity of ZnO-Al_2O_3 composite and enhancement of flow boiling heat transfer	Fluid Science				
Saheer Cheemadan, R. Amiruddin, M.C. Santhosh Kumar	Realization of highly transparent conducting CdO thin films by R.F.Magnetron sputtering for Optoelectronic applications	Proceedings of SPIE	9558	955816	2015	
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	9.7
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_2SnS_3 Thin Films by Co-evapoartion for photovoltaic application	Solar Energy Materials and solar cells	143	128–134	2015	6.3
R. Amiruddin, M.C. Santhosh Kumar,	Growth and characterization of near white light emitting Al-Ga:ZnO nanowires	Mater. Res. Express	2	075004	2015	1.8
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	1.9

T. Prasada Rao, S.Gokul Raj, M. C. Santhosh Kumar	Optical Properties of Samarium Doped ZnO Thin Films	IEEE xplore, 2nd International Conference onDevices, Circuits and Systems (ICDCS)			2014	
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 $Al_2O_3TiO_2$ composite coatings	Applied Surface Science	334	102–109	2015	6.3
R. Amiruddin, M. C. Santhosh Kumar	Enhanced visible emission from vertically aligned ZnO nanostructures	Journal of Luminescence	155	149– 155	2014	3.3
R. Amiruddin, M. C. Santhosh Kumar	Epitaxial Growth of Vertically Aligned Highly Conducting ZnO Nanowiresby Modified Aqueous Chemical Growth	Ceramics International	40	11283–11290	2014	5.1
R. Amiruddin, Akshay Srinivas, C. S. Sujith Kumar, M. C. Santhosh Kumar	Fabrication of Hyddrophobic 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	5.3
R. Swapna, M. C.	Deposition of NaN	Materials	178	1032–	2013	3.9

Santhosh Kumar	dual acceptor doped p-type ZnO thin films and fabrication of pZnO:(Na,N)/nZnO: Eu homojunction	Science and Engineering B		1039		
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	5.8
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	5.8
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	5.1
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	1.6
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	5.8
M.C. Santhosh Kumar, B.	Band gap variation in co-evaporated	Indian Journal of Physics	85	401-409	2011	1.6

Pradeep	AgInSe2 thin films with 1.26 MeV He+ ion irradiation					
M.C. Santhosh Kuamar, B. Pradeep	Optical constants of co-evaporated Ag_2Se thin films with proton irradiation	Journal of Ovonic Research	6	143-148	2010	0.9
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	5.8
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	5.8
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	5.8
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	6.3
T. Prasada Rao,	Highly Oriented (1 0	Applied	255	7212–	2009	6.3

M.C. Santhosh Kumar	0) ZnO thin films by spray pyrolysis	Surface Science		7215		
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	6.3
M.C. Santhosh Kumar and B. Pradeep	Formation and properties of silver indium selenide thin films by coevaporation	Vacuum	72	369 – 378	2004	3.8
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	1.9
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	2.7
M.C. Santhosh Kumar and B. Pradeep	Structural electrical and optical properties of silver selenide thin films	Semicond. Sci. Technol.	17	261-265	2002	1.9

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year
Devika Mahesh, John Paul and M. C. Santhosh Kumar	Photocatalytic degradation of Methylene Blue by ZnO seed layers and 1 D nanorods			International Conference on Novel engineering materials for Biomedical, Energy and Environmental Sensing and other application (ICON BEES 2021)	NIT Tiruchirappalli	2021
Neju Mathew Philip and M. C. Santhosh Kumar	Structural and Morphological characterization of MoS_2 thin films using chemical bath deposition			International Conference on Novel engineering materials for Biomedical, Energy and Environmental	NIT Tiruchirappalli	2021

				Sensing and other application (ICON BEES 2021)		
P. Aabel, A Anupama and M C Santhosh Kumar	Fabrication of Al:ZnO/CZTS heterojunction solar by vacuum spray pyrolysis			3rd International Conference on Solar Energy Photovoltaics (ICSEP-2019)	School of Electrical Engineering, KIIT (Deemed to be University), Bhubaneswar, Odisha	2019
B. Hemanth Kumar and M.C. Santhosh Kumar	Comparative study of Cu-rich and Sb-rich of CuSbS2 thin films			International Conference on Advanced Materials for Sustainable Energy and Sensors (INCAMSES-2019)	Alagappa University	2019
Devika Mahesh, John Paul, M. C. Santhosh Kumar	Improved photocatalysis exhibited by 1 d nanorods grown on zinc oxide thin films under UV light			International Conference on Advanced Materials for Sustainable Energy and Sensors (INCAMSES-2019)	Alagappa University	2019
John Paul, P. Sasi Kumar and M.C. Santhosh Kumar	Degradation of Methylene Blue Dye by RF Sputtered Ti1-xZnxO Thin FILMS under UV Irradiation			International Conference on Advanced Materials for Sustainable Energy and Sensors (INCAMSES-2019)	Alagappa University	2019
B. Hemanth Kumar and M.C. Santhosh Kumar	Surface Modification of Indium doped Zinc Oxide thin films			International Conference on Recent advances in Materials Science	NIT Tiruchirappalli	2019
Devika Mahesh, and M.C. Santhosh Kumar	Surface Modification of Indium doped Zinc Oxide thin films			International Conference on Recent advances in Materials Science	NIT Tiruchirappalli	2019
Saheer chemadan, Muthukumar Krishnan, Arthur James Rathinam, M.C. Santhosh Kumar	Biocidal Properties of CdO:ZnO Multi-component Thin Films			5th International conference on Nanoscience and Nanotechnology	SRM University, Chennai	2019

B. Hemanth Kumar, M.C. Santhosh Kumar	Co-evaporated Antimony Sulfide Thin Films for Photovoltaic Applications			5th International conference on Nanoscience and Nanotechnology	SRM University, Chennai	2019
Aabel Premnath, M.C. Santhosh Kumar	An investigation on n-ZnO/p-CuZnS heterojunctions for thin film solar cell applications			5th International conference on Nanoscience and Nanotechnology	SRM University, Chennai	2019
T. Srinivasa Reddy, M.C. Santhosh Kumar	Fabrication of photodetector using co-evaporated Cu_2SnS_3 thin films			5th International conference on Nanoscience and Nanotechnology	SRM University, Chennai	2019
Sai Guru Srinivasan S, Govardhanan B, Ashok M, Santhosh Kumar M. C	Photocatalytic activity of reactively sputtered nanostructured Cu_2O thin films deposited at room temperature			5th International conference on Nanoscience and Nanotechnology	SRM University, Chennai	2019
P. Aabel and M.C. Santhosh Kumar	Effect of substrate temperature on the properties of CuZnS thin films by vacuum spray pyrolysis			National symposium on advances in functional and exotic materials	Bharathidasan University, Tiruchirappalli	2018
Sai Guru Srinivasan and M.C. Santhosh Kumar	Oxygen partial pressure dependent tuning of Cu_2O& CuO thin fims by reactive RF Magnetron sputtering			National symposium on advances in functional and exotic materials	Bharathidasan University, Tiruchirappalli	2018
Saheer Cheemadan and M.C. Santhosh Kumar	Effect of substrate temperature on RF sputtered NiO thin films			National symposium on advances in functional and exotic materials	Bharathidasan University, Tiruchirappalli	2018
K.H. Haritha, Edwin Jose and M.C. Santhosh Kumar	Study on optical properties of CdS thin films deposited by chemical bath deposition process			National Conference on Advanced Materials: Processing and Characterization	NIT Tiruchirappalli	2017
M.G. Harikeerthana, R. Amiruddin and M.C. Santhosh Kumar	Study of Electrically Conducting PEDOT:PSS Thin Films deposited using spray pyrolysis			National Conference on Advanced Materials: Processing and Characterization	NIT Tiruchirappalli	2017
John Paul, Benoy M.D and M.C. Santhosh Kumar	Optical Characterization of Copper Doped Indium Oxide Thin Films			National Conference on Advanced Materials: Processing and Characterization	NIT Tiruchirappalli	2017

S. Aarthi, Sruthy Poulose, R. Amiruddin, M. Devika, R. Prasanth	Realization of superhydrophobic ZnO layers for self-cleaning applications			National Conference on Advanced Materials: Processing and Characterization	NIT Tiruchirappalli	2017
T. Srinivasa Reddy, B. Hemanth Kumar, M. C. Santhosh kumar,	Effect of Annealing on the optical properties and photoconductivity of SnS thin film,			61st 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			8th 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 Nanowires with visible luminescence characteristics			4th International Conference on Frontiers in Nanoscience and Technology, nano-2016	Cochin	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			4th 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	Realization of highly transparent conducting CdO thin films by R.F.			SPIE NanoScience + Engineering,	Sandiago, California, USA	2015

Kumar,	Magnetron sputtering for Optoelectronic applications					
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 Cu2SnS3 thin film,			10th Mid-Year CRSI Symposium in Chemistry	NIT, Trichy	2015
T. Srinivasa Reddy and M.C. Santhosh Kumar	Depositiotion and characterisation of co-evaporated Cu2SnS3 thin films for photovoltaic applications			International conference on sustainable energy Technologies	PSG College of Engineering, Coimbatore	2014
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,	Non-destructive			National seminar		2013

N. Jothilakshmi, Paritosh Nanekar and M.C. Santhosh Kumar	Characterization of Cracks in Cladded Pressure Vessels			and International exhibition on Non-Destructive Evaluation, NDE-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 Technologies	Sri Ramakrishna Mission Vidyalaya College of Arts and Sciences, Coimbatore	
R. Swapna, R. Amiruddin, M. C. Santhosh Kumar	Aging and Annealing Effects on Properties of Ag-N Dual Acceptor Doped ZnO Thin Films			57th 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			1st 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			International conference on Advanced	PSG College of Technology, Coimbatore	2011

	spray pyrolysis			Materials,		
R. Swapna, T. Prasada Rao, M. C. Santhosh Kumar	Effect of molybdenum doping on structural, optical and electrical properties of nanostructured ZnO thin films			3rd 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 CeO2 nanocrystals by co-precipitation			3rd 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. Santhosh Kumar, C. Babu rao and T. Jayakumar,	Enhancement of signal to Noise ratio in Ultrasonic NDE using Wavelet Transform			National Seminar on NDE (NDE 2009)	Tiruchirappalli	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