

DR.CHALANA.S.R

Assistant Professor of Physics

International Publications – 25

Conferences (International – 04) (National – 20)

Citation Indices	All	Since 2018
Citations	336	216
h-index	9	9
i10-index	9	8



ADMINISTRATIVE DISTINCTION

- Research Guide
- Co-ordinator of Human Rights Awareness club 2019-2023
- Chief Editor Iridescent Vision-2022-2023
- IQAC Member 2022-2023
- Member, Energy conservation club, 2022-2023
- Member, Science club, 2021-2023
- Executive Editor, Research Journal, 2020-22
- Member, Book club and Library co-ordination committee, 2020-2021
- Tutor, BSc Physics, 2019-2022 Batch
- Tutor, MSc Physics, 2022-2024 Batch
- Admission committee member 2019-2020
- Coordinator, World Ozone day Programme conducted by Department of Physics, 2021-2022
- Coordinator, DARSHAN '21 Multidisciplinary Seminar Series, Organized by IQAC and Department of Physics (2020-21)
- Coordinator, DARSHAN '21 Multidisciplinary Seminar Series, Organized by IQAC and Department of Physics (2021-22)
- Coordinator, Criterion III, NAAC SSR preparation, 2021-2023
- Co-ordinator, NCOP-2K22 National conference sponsored by KSCSTE
- Co-ordinator, RRR Exhibition of Crafts & Utility items using waste materials

AWARDS & ACHIEVEMENTS

- ❖ **Got Best Paper Award** in the National conference on Nanophotonic Materials (NCNM-2008), October 10-12, Department of Physics, CUSAT for the paper entitled “Effect of Post deposition annealing on the microstructural and optical properties of laser ablated nanostructured zinc sulphide thin films”
- ❖ **Got Best Oral Presentation Award** in the National Seminar on Theoretical and Experimental Physics, October 24-26, 2018, Department of Physics, Government College For Women, Thiruvananthapuram for the paper entitled “ Mn doped ZnS films: Outcome on the photoluminescence properties”



Meenamandiram, Chat hinamkulam, Chandanathope, Kollam, Kerala 691014



9645671997



drchalanasr@tkmmc.ac.in

QUALIFICATION

M.Sc., B.Ed, M.Phil., Ph.D, PDF

DATE OF JOINING

10-01-2019

EXPERIENCE IN YEARS

4 years

AREA OF RESEARCH

Nanomaterials
Nano thin films
Luminescent properties of nanomaterials

PUBLICATIONS

1. Substrate dependent hierarchical structures of RF sputtered ZnS films

S.R. Chalana and V.P.Mahadevan Pillai

Applied Surface Science 440 (2018) 1181–1195, ISSN: 0169-4332

2. Tailoring the visible emissions in ZnS:Mn films for white light generation

S.R. Chalana, V.S. Kavitha, R. Reshmi Krishnan, and V.P.Mahadevan Pillai

Journal of Alloys and Compounds 771 (2019) 721-735, ISSN: 0925-8388

3. Structural phase modification in Cu incorporated nanostructured zinc sulfide thin films

S.R. Chalana, R. Jolly Bose, R. Reshmi Krishnan, V.S. Kavitha, R. Sreeja Sreedharan and V.P.Mahadevan Pillai

Journal of Physics and Chemistry of Solids 95 (2016) 24-36, ISSN: 0022-3697

4. Surface plasmon resonance in nanostructured Ag incorporated ZnS films

S. R. Chalana, V. Ganesan, and V. P. Mahadevan Pillai

AIP Advances 5 (2015) 1072071-17, ISSN: 2158-3226

5. Influence of argon ambience on the structural, morphological and optical properties of pulsed laser ablated zinc sulfide thin films

S. R. Chalana, R. Vinodkumar, I. Navas, V.Ganesan and V. P. Mahadevan Pillai.

Journal of Luminescence. 132 (2012) 944-952, ISSN: 0022-2313

6. Effect of RF power on the structural and optical properties of zinc sulfide films.

S.R. Chalana, S.Sankararaman, Radhakrishna Prabhu, V P Mahadevan Pillai

JOM, Published online 27 July 2017, DOI: 10.1007/s11837-017-2459-7, ISSN: 1047-4838 (Print) 1543-1851 (Online).

7. Laser ablated nanostructured zinc sulphide thin films for optoelectronics device applications

S. R. Chalana, R. Vinodkumar, A. P. Detty, I. Navas, K. S. Sreedevi and V. P. Mahadevan Pillai.

IEEE Xplore, (2009), ISBN: 978-1-4244-3942-3, Digital Object Identifier: 10.1109/ICUMT.2009.5345562

8. Bright visible luminescence from highly textured, transparent Dy³⁺ doped RF sputtered zinc oxide films

R. Sreeja Sreedharan, R. Reshmi Krishnan, G. Sanal Kumar, V.S. Kavitha, **S.R. Chalana**, R. Jolly Bose, S. Suresh, R. Vinodkumar, S.K. Sudheer, V.P. Mahadevan Pillai

Journal of Alloys and Compounds 721 (2017) 661-673, ISSN: 0925-8388

9. Highly conductive and transparent laser ablated nanostructured Al: ZnO thin films

R. Vinodkumar, I. Navas, **S.R.Chalana**, K.G. Gopchandran, V. Ganesan, Reji Philip and V.P. Mahadevan Pillai .

Applied Surface Science, 257(2010)708-716, ISSN: 0169-4332.

10. Pulsed laser ablation of zinc selenide in nitrogen ambience: Formation of zinc nitride films

S.Simi, I.Navas, R.Vinodkumar, **S.R.Chalana**, Mohan Gangrade, V.Ganesan and V.P.Mahadevan Pillai

Applied Surface Science 257(2011)9269-9276, ISSN: 0169-4332.

11. Effect of Nb doping on the structural, morphological, optical and electrical properties of RF magnetron sputtered In₂O₃ nanostructured films

R. Reshmi Krishnan, **S. R. Chalana**, S. Suresh, S. K. Sudheer, C. Sudarsanakumar, M. C. Santhosh Kumar and V. P. Mahadevan Pillai

Phys. Status Solidi C, 1–15 (2016), ISSN: 1610-1642.

12. Study on the Structural, Morphological and Optical Properties of RF-Sputtered Dysprosium-Doped Barium Tungstate Thin Films

S. Hridya, V.S. Kavitha, **S.R. Chalana**, R. Reshmi Krishnan, R. Sreeja Sreedharan, S. Suresh, V.P.N. Nampoori, S. Sankararaman, Radhakrishna Prabhu and V.P. Mahadevan Pillai
JOM, Published online 27 April 2017, DOI: 10.1007/s11837-017-2360-4 ISSN: 1047-4838 (Print) 1543-1851 (Online)

13. Study on the structural, morphological and optical properties of RF sputtered gallium doped zinc oxide thin films

V.M. Vimuna, R. Sreeja Sreedharan, R. Resmi Krishnan, V.S. Kavitha, **S.R. Chalana**, S. Suresh and V.P. Mahadevan Pillai
Materials Today: Proceedings 4 (2017) 4417–4433, ISSN: 2214-7853

14. Laser ablated nanostructured tin oxide thin films for optoelectronic device applications

K. S. Sreedevi, R. Vinodkumar, A. P. Detty, **S. R. Chalana**, I. Navas and V. P. Mahadevan Pillai.
IEEE Xplore, (2009), ISBN: 978-1-4244-3942-3, Digital Object Identifier: 10.1109/ICUMT.2009.5345557

15. Luminescent Ta doped WO₃ thin films as a probable candidate for excitonic solar cell applications

V.S. Kavitha, S. Suresh, **S.R. Chalana**, V.P. Mahadevan Pillai
Applied Surface Science 466 (2019) 289–300, ISSN: 0169-4332

16. Effect of Oxygen pressure on the structural and optical properties of BaSnO₃ films prepared by pulsed laser deposition method

Jibi John, **S.R. Chalana**, Radhakrishna Prabhu, V.P. Mahadevan Pillai
Applied Physics A, (2019) 125:155, ISSN: 0947-8396 (print), 1432-0630 (online)

17. High quality, highly transparent Cu incorporated WO₃ thin films suitable for blue LED application

V.S. Kavitha, **S.R. Chalana**, R. Reshmi Krishnan, K.G. Gopchandran, V.P. Mahadevan Pillai
Vacuum 172 (2020) 109044

18. Effect of silver incorporation on the structural and morphological characteristics of RF sputtered indium oxide films

Silpa Sathesh , Kavitha V.S, Reshmi Krishnan, **Chalana S.R**, Suresh S, Radhakrishna Prabhu, V.P. Mahadevan Pillai
IOP Conf. Series: Materials Science and Engineering 499 (2019) 012001, doi:10.1088/1757-899X/499/1/01200

19. Effect of substrate temperature, laser energy and post-deposition annealing on the structural, morphological and optical properties of laser-ablated perovskite BaSnO₃ films

Jibi John, S. Suresh, **S. R. Chalana**, V. P. Mahadevan Pillai
Applied Physics A 125:743, (2019) ISSN:

20. Effect of Tungsten Doping on the Properties of In₂O₃ Films

R. Reshmi Krishnan, V.S. Kavitha, **S.R. Chalana**, Radhakrishna Prabhu, V.P. Mahadevan Pillai
JOM, 71, No. 5 (2019), doi.org/10.1007/s11837-019-03426-7

21. Influence of argon pressure on the crystalline phase formation of RF sputtered zinc sulfide thin films

S.R. Chalana , V.S. Kavitha , P. Srinivasan , S. Rafi Ahamed c, Gargi Tiwari , V.P. Mahadevan Pillai
Materials Today Proceedings, 29, June 2020, doi: [10.1016/j.matpr.2020.05.347](https://doi.org/10.1016/j.matpr.2020.05.347)

22. Characterization and optical limiting behavior of BaSnO₃ powder prepared by the conventional solid state method

23. Effect of silver incorporation on the structural and morphological characteristics of RF sputtered indium oxide films

*VS Kavitha, R Krishnan, **SR Chalana**, S Suresh, P Radhakrishna Prabhu
IOP Conference Series: Materials Science and Engineering 499 (1), 012001*

24. Laser ablated nanostructured niobium oxide doped indium oxide thin films

*R Reshmi Krishnan, R Sreeja Sreedharan, **SR Chalana**, R Jolly Bose, Vinodkumar, R. Sudheer, S.K, V.P. Mahadevan Pillai
Proceedings of the international conference on thin films and applications: book of abstracts*

25. Effect of tin oxide doping on the properties of laser ablated nanostructured indium oxide films

*R Reshmi Krishnan, R Sreeja Sreedharan, **SR Chalana**, R Jolly Bose, R Vinodkumar, SK Sudheer, VP Mahadevan Pillai, V Ganesan
Proceedings of the DAE-BRNS seventh national symposium on pulsed laser deposition of thin films and nanostructured materials*

26. Effect of praseodymium incorporation on the structural and optical properties of ZnO thin films by RF magnetron sputtering

*R Vinodkumar, I Navas, **SR Chalana**, VP Mahadevan Pillai
Proceedings of the thirty fifth international conference on contemporary trends in optics and optoelectronics: conference digest-extended abstracts*

PAPERS PRESENTED IN INTERNATIONAL CONFERENCES

1. Microstructural and optical properties of laser ablated nanostructured zinc sulphide thin films by post deposition annealing

S.R. Chalana, R. Vinodkumar, A.P. Detty, I. Navas, V.P. Mahadevan Pillai
International conference on Anti-counterfeiting Technology (ICAT-2009), May 28-29, Mascot Hotel, Trivandrum

2. Laser ablated silver doped nanostructured zinc sulphide thin films

S.R. Chalana, V.P. Mahadevan Pillai
Indo German Conference on Laser Applications and Nanoscience, December 5-7, 2013, Thiruvananthapuram

3. Effect of Cu incorporation on the structural, morphological and optical properties of nanostructured zinc sulfide thin films

S.R. Chalana and V.P. Mahadevan Pillai
International Conference on Photonic Applications and Nanomaterials (ISPAN-2015), October 28-30, 2015, Sree Chitra Tirunal Institute for Medical Sciences and technology (SCTIMST), Thiruvananthapuram

4. Alteration of visible emissions of ZnS films by Mn incorporation

International Conference on Recent Advances in Materials Science (ICRAMS 2020) during 22nd & 23rd of January, organized by Research Committee and Post-graduate & Research Departments of Physics and Chemistry, Mahatma Gandhi College, Thiruvananthapuram.

NATIONAL CONFERENCES

- Effect of Post deposition annealing on the microstructural and optical properties of laser ablated nanostructured zinc sulphide thin films
S.R. Chalana, R. Vinodkumar, A.P. Detty, I. Navas, V.P. Mahadevan Pillai
National conference on Nanophotonic Materials (NCNM-2008), October 10-12, Department of Physics, CUSAT.
Got Best Paper Award
- **Mn doped ZnS films: Outcome on the photoluminescence properties**
S.R. Chalana, V.P. Mahadevan Pillai
National Seminar on Theoretical and Experimental Physics, October 24-26, 2018, Department of Physics, Government College For Women, Thiruvananthapuram
Got Best Oral Presentation Award
- **Microstructural and optical properties of laser ablated nanostructured zinc sulphide thin films**
S.R. Chalana, R. Vinodkumar, A.P. Detty, I. Navas, V.P. Mahadevan Pillai
National Seminar on Photonic Materials (NSPM-2009), February-28-29, Department of Optoelectronics, University of Kerala.
- **Microstructural and optical properties of laser ablated nanostructured zinc sulphide thin films**
S.R. Chalana, R. Vinodkumar, A.P. Detty, I. Navas, V.P. Mahadevan Pillai
DAE-BRNS 5th National Symposium on Pulsed Laser Deposition of Thin Films and Nanostructured Materials (PLD-2009), December 02 – 04, IIT Madras, Chennai.
- **Microstructural and luminescence properties of laser ablated nanostructured zinc sulphide thin Films**
S.R. Chalana, R. Vinodkumar, A.P. Detty, I. Navas, V.P. Mahadevan Pillai
97th Indian Science Congress, January 03 - 07, 2010, University of Kerala, Karyavattom, Thiruvananthapuram
- Attended The National Workshop on Optoelectronics And Optical Communication (NWOOC-2011) organized by Department of Optoelectronics, University of Kerala, Kariavattom, Thiruvananthapuram during 5-6 January 2011.
- **Preparation and characterization of pulsed laser ablated silver doped nanostructured zinc sulphide thin films**
S.R. Chalana, V.P. Mahadevan Pillai
DAE-BRNS National Laser Symposium-22 (NLS-22), January 8-11, 2014, Manipal
- **Surface plasmon related quenching of visible emission from silver doped zinc sulfide thin films prepared by pulsed laser deposition**
S.R. Chalana and V.P. Mahadevan Pillai
National Conference on Material Science and Technology (NCMST-2014), July 28-30, 2014, IIST Valiyamala, Thiruvananthapuram
- **Effect of Au incorporation on the structural phase transition of nanostructured zinc sulfide thin films prepared by RF magnetron sputtering**
S.R. Chalana, S. K. Sudheer and V.P. Mahadevan Pillai
DAE-BRNS National Laser Symposium-23 (NLS-23), December 3-6, 2014, Tirupai, Andhra Pradesh.

- **Structural and optical properties of Au incorporated ZnS Films**
 S.R. Chalana and V.P. Mahadevan Pillai
 National Seminar on Nanoscience and Nanotechnology, Marh 19-20, 2015, Department of Biotechnology, University of Kerala, Kariavaom, Thiruvananthapuram
- **Structural and optical properties of silver doped zinc sulfide thin films prepared by pulsed laser deposition**
 S.R. Chalana and V.P. Mahadevan Pillai
 National Seminar on Spectroscopic Techniques and its applications for material characterization (NSST 2013), October 3- 4, 2013, Department of Optoelectronics University of Kerala.
- **Influence of Cu incorporation on the microstructural, luminescence and nonlinear properties of nanostructured ZnS films**
 S.R. Chalana and V.P. Mahadevan Pillai
 National Seminar on Photonics and its Applications (NSPA-2015), December 9-11, 2015, Department of Optoelectronics University of Kerala
- **Light emission properties of RF sputtered ZnS:Mn films**
 S.R. Chalana and V.P. Mahadevan Pillai
 National Seminar on Functional Materials For Future, September 27-28, 2018, Post Graduate Department of Physics, Assumption College, Changanacherry
- Participated in the 20th National Conference on Atomic and Molecular Physics (NCAMP-XX) organized by Indian Society of Atomic and Molecular Physics (ISAMP) at Indian Institute of Space Science and Technology (IIST), Valiamala, Thiruvananthapuram from 9th-12th December 2014
- Has participated in the four day National Multi-Disciplinary Annual Research Conference organized by the Internal Quality Assurance Cell & Various Schools of the University of Kerala from 15th-18th November 2015 International Conference on Photonic Applications and Nanomaterials (ISPAN-2015), October 28-30, 2015
- **Nanotechnology for energy harvesting**
 EMC sponsored seminar on materials for energy efficiency and conservation (MEEC 2019) at TKMM College, Nangirkulangara on 12 &13, March-2019
- **Modification of emission properties in ZnS films by Mn incorporation**
 National Conference on Advances in Nanomaterials& Nanotechnology (6, 7 August 2019), organized by the Department of Physics, Mar Thoma College, Thiruvalla
- **Synthesis and characterization of Dy doped zinc sulfide thin films for light emitting applications**
 National Seminar on Spectroscopic Techniques: Present Scenario (NSST 2020), organized by Post graduate Department of Physics, TKMM College, Nangiarkulangara, Alappuzha, on 31st January 2020
- **Study on the structural and optical properties of silver nitrate doped bismuth ferrite nanoparticles**
 National Conference on Optics and Photonics (NCOP-2K22) organized by PG Department of Physics, TKMM College, Nangiarkulangara, Alappuzha, on 14 & 15 November 2022

- **Study on the structural and optical properties of zinc oxide doped bismuth ferrite nanoparticles**

National Conference on Optics and Photonics (NCOP-2K22) organized by PG Department of Physics, TKMM College, Nangiarkulangara, Alappuzha, on 14 & 15 November 2022

ORIENTATION/REFRESHER/SHORT TERM COURSES ATTENDED

- Participated in the one-month Induction training programme for teachers organized by MHRD & PMMMNMTT from 23rd September to 22nd October, 2019 at Central University of Kerala
- Attended FDP on Quality Science Education in India in the 21st Century jointly organized by GAD TLC, SGTB Khalsa College, University of Delhi (MHRD) under PMMMNMTT of Ministry of Education & Christ College, Irinjalakkuda, from 03/11/2020 to 09/11/2020.
- Attended FDP on “Innovative Teaching and Learning Methods” organized by Post Graduate Department of commerce and Research Centre, St. Xaviers College for Women, Aluva on 20th and 21st, May 2020
- Completed refresher course on ‘Recent Advances in Physics’ organized by UGC-STRIDE, Mahatma Gandhi University, Kottayam in association with Marthoma College for Women, Perumbavoor from 10th July to 24th July, 2021

WEBINARS ATTENDED

- Participated in the virtual symposium on “International Day of Light-IDL-2020” organized by IEEE Photonics society and SPIE Student Chapters, Department of Physics, IIT Guwahati on May 16, 2020
- Participated in the “International Webinar on Photonics-2020” organized by the Department of Physics, Christ Nagar College, Maranalloor, Trivandrun on 3rd June 2020.
- Attended Webinar on “Magnetic materials for energy and storage devices” Dhaanish Ahmed Institute of Technology , Coimbatore on 11th July 2020.
- Participated in the 3 Day International Webinar on “Advances in Functional Materials-IWAFM” organized by Department of Physics, Mar Ivanios College, Thiruvananthapuram, India from 26th June to 28 th June 2020.
- Attended a Webinar on “Quantum Magnetism in Honeycomb Lattices” organized by Department of Physics, Mar Thoma College for women, Perumbavoor on 16th June 2020.
- Participated in the “International Multidisciplinary Webinar-CONVERGENCE-2020” on the topic “Nano-micro electromechanical resonators based on nanowires, nanotubes and grapheme” organized by the IQAC and Department of Physics, SES College, Sreekandapuram, Kannur on 9th June 2020
- Participated in the “International Webinar-DOCTRINA-7” organized by IQAC and Department of Physics, Sir, Syed College, Taliparambu, Kannur on the topic “Equations as a tool to develop an integrated education” on 29th May 2020.
- Attended the International Webinar on “A Glimpse on Electromagnetism” organized by Department of Physics, Sree Sankara college, Kilimanoor on 3rd July 2020.
- Participated in the National Webinar on the topic “Classroom Management tools” organized by Department of Commerce, SCMS School of Technology and Management , Muttom, Aluva on 23rd July 2020.
- Participated in the Al-Haj P K Kunju Sahib Memorial Webinar Series 2020-2021 on “Sources of Funding for Research Activities” organized by, IQAC, Milad-E-Sherief Memorial College, Kayamkulam on 13th August 2020.
- Participated in the 3 Day International Webinar on “Material Science” organized by the Department

of Physics, St. John's College, in association with IQAC and sponsored by DBT Star college Scheme, from 23rd September to 25th September, 2020.

- Participated in the Webinar entitled “Search for the fundamental constituents of matter” jointly organized by the Department of Physics and Internal Quality Assurance Cell, TKM College of Arts and Science on 25th September 2020.
- Participated in the Raman Optronics Webinar Series 2020-Virtual International Conference organized by Department of Optoelectronics, University of Kerala as part of the silver Jubilee Celebration of the department on 15th October 2020.
- Participated in the Webinar on “Research Ethics” organized by Departments of Zoology, Chemistry & IQAC, TKMMC on 5th February 2021.
- Participated in the Webinar on “Advanced Ceramics for Functional Applications” organized by Department of Physics, TKMMC on the eve of National Science Day on 27th February, 2021.