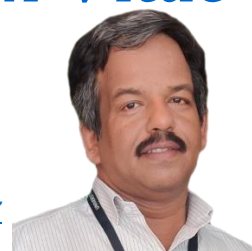


DR. S. SANKARARAMAN

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EXPERIENCE

(i) Teaching Experience : 27.5 years (Since 16-09-1995)

- From **01/06/2016** – Department of Optoelectronics, University of Kerala
- **16/9/1995- 31/05/2016** at Newman College, Thodupuzha and Nirmala College, Muvattupuzha

(ii) Administrative Experience

- Head, Department of Optoelectronics, University of Kerala from **17/04/2020** onwards.
- Head, Department of Nanoscience and Nanotechnology, University of Kerala from **16/08/2016 – 16/04/2020**
- Director, School of Technology, University of Kerala - **29/08/2019 – 17/04/2020**

(iii) Research Experience : 27 years (Since 1995)

ACADEMIC QUALIFICATIONS

a) DOCTOR OF PHILOSOPHY (2000)

Title of Thesis: *Investigations on the Thermal Diffusivity of Some Selected Materials using Laser Induced Photoacoustic Techniques*

International School of Photonics, Cochin University of Sci. & Tech., Cochin

Date of Award of the degree: 19.2.2000

Guide : Prof. V. P. N. Nampoori

b) MASTER OF PHILOSOPHY (1994-1995)

76%, I Class; Spl. Photonics & Electronics,

Title of Thesis: *Photoacoustic Study of Selected Samples*

Guide : Prof. V. P. N. Nampoori, Cochin University of Sci. & Tech., Cochin

c) MASTER OF SCIENCE [M.Sc- Physics (Spl.-Electronics)] (1991-1993)

77%; I Class & Distinction: **II Rank**, University of Kerala, Trivandrum.

d) ADDITIONAL ACADEMIC QUALIFICATIONS

- i) *Graduate Aptitude Test in Engineering (G.A.T.E)* 1994
Score 95% , All India Rank; 63
- ii) Council of Scientific and Industrial Research- National Eligibility Test & Junior Research Fellowship (*C.S.I.R – J.R.F - N.E.T*) In 01/06/1994
- iii) Successfully completed OSA (Optical Society of America) Reviewer Certification course on 21/12/2019

RESEARCH ACTIVITIES

Areas of interest:

||Laser applications|| Photothermal spectroscopy| ESPI| LIBS| Nonlinear optics|
||Nanoscience|| Carbide| Nanobiophotonics| Soot| Composites|
||Signal Processing|| Fractals| Time series analysis| Graph theory|

(a) Guideship Since 2007 in -

- i. Optoelectronics, Faculty of Applied Sciences and Technology, University of Kerala -
Ac.E1/A2/26802/2017; dt. 26/06/2017
- ii. Nanoscience and Nanotechnology, Faculty of Applied Sciences and Technology, University of Kerala - Ac.E1/A2/015972/2018; dt. 30/05/2018
- iii. Futures Studies, Faculty of Applied Sciences and Technology, University of Kerala -
Ac.E1/5362/2021; dt. 11/10/2021
- iv. Physics, Mahatma Gandhi University, Kottayam No. Ac AVI/4573/R.G./05 dated 04/06/2007

(b) Guidance:

1. Ph D –Thesis awarded – 6 + Ongoing - 7

- i) Swapna M S - Nanobiophotonic Applications and Thermal-Induced Dynamics of Soot: Theoretical, Spectral, and Laser-Assisted Thermal Lens Studies

- ii) Vimal Raj - Instrumentation, Application and Time Series Analysis of Laser-Induced Thermal Lens System
- iii) Saritha Devi H V - Low Temperature Green Synthesis of Boron Carbide Nanosystems for Optoelectronic Applications
- iv) Soumya S -Development of Nondestructive Evaluation Methods for Morphological and Thermal Characterization of Nanostructured Thin Films
- v) Riya Sebastian - Laser Assisted Non-Destructive Evaluation of the Factors Affecting Thermal Diffusivity and Optical Nonlinearity of Selected Samples
- vi) Sudheer V R - Investigations on Optical Fiber Based Surface Plasmon Resonance Biosensors and Communication Systems

2. M. Phil Thesis – 12

3. M Tech Thesis- 29

(c) Research Publications:

- i) No. of research publications in peer reviewed Journals: **136**
[h index – 17, i10 index – 36, RG Score – 34.32]
- ii) No. of single author journal papers : **18**
- iii) No. of papers enlisted in W.H.O. webpage : **12**
- iv) No. of seminar/conference papers : **115**
- v) No. of books published : **9**
- vi) No. of book chapters published : **14**
- vii) General articles : **11**
- viii) Invited lectures : **127**

(d) Patents Filed : 3

- (i) Application No. 201941029216 and Filing Date 19.07.2019.
- (ii) Application No. 202041008870 and Filing Date 02.03.2020.
- (iii) Application No. 202041011209 and Filing Date 16.03.2020.

(e) Research Collaboration:

- University of Nova Gorica, Slovenia, 2022
- Nicolas Copernicus University, Torun, Poland, 2022

- Signed an MoU for COVID Data transfer with Cambridge University, 2020
- Kotel'nikov Institute of Radioengineering and Electronics Russian Academy of Sciences, Adr, IRE RAS, Mokhovaya 11-7, Moscow, Russia, 2020
- International Centre for Theoretical Physics (ICTP), Italy, 2020
- Lead City University, Nigeria, 2020
- SFO Technologies Pvt Ltd. (NeST), Cochin, 2021
- DFM Softech Solutions (Design Alpha) Pvt Ltd. Cochin, 2021

(f) No. external Ph D Thesis evaluated – 8

(g) Reviewer of International journals

1. Journal of Materials Engineering and Performance, Springer
2. Modern Physics Letters A, World Scientific, Singapore
3. Frontiers of Optoelectronics, Springer
4. Journal of Food Processing and Preservation, Wiley
5. Transactions of the Indian Ceramic Society, Taylor and Francis
6. American Journal of Mathematical and Management Sciences, Wiley
7. Optical and quantum Electronics, Springer
8. Sains Malaysia, Universiti Sains Malaysia
9. Journal of Optical Society of America B, Optical Society of America
10. IEEE Access, IEEE
11. Journal of Optical communication, Elsevier
12. Spectroscopy Letters, Taylor and Francis
13. Journal of Molecular Liquids, Elsevier
14. Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, Taylor and Francis
15. International Journal of Heat and Mass Transfer, Elsevier
16. Ultrasonics, Elsevier
17. Chinese Optics Letters, Institute of Publishing
18. Journal of Materials Science: Materials in Electronics, Springer
19. Nanomaterials and Energy, ICE Publishing
20. Lasers in Manufacturing and Materials Processing, Springer
21. Thin Solid Films, Elsevier
22. Computers in Biology and Medicine, Elsevier

23. Computer Methods and Programs in Biomedicine, Elsevier
24. International Journal of Thermophysics, Springer
25. Applied Physics A, Springer
26. Asian Journal of Physics, Indian Spectroscopy Society
27. Optical Engineering, SPIE
28. Applied Ocean Research, Elsevier
29. Applied Physics B, Springer
30. Ceramics International, Elsevier
31. Chemical Physics, Elsevier
32. Diamond and Related Materials, Elsevier
33. Optics Express, OSA
34. Journal of Optics, Springer
35. Inorganic and nanometal chemistry, Taylor and Francis
36. Advanced Optical Materials, Wiley
37. Journal of Electronic Materials, Springer

AWARDS / RECOGNITION

- Narinder Singh Kapany - RESEARCH EXCELLENCE AWARD 2022 in Optoelectronics, International Multidisciplinary Research Foundation, Institute of Higher Education and Research, Andhra Pradesh, India 26-01-2022
- ACADEMIC EXCELLENCE AWARD 2020 - University of Kerala, Sciences and Applied Sciences
- Award for Highest number of publications in 2019, University of Kerala
- IOP top cited award - one of the most cited articles from India, published across the entire IOP Publishing journal portfolio within the past three years (2018 to 2020). It also features in the top 1% of most cited papers in the Materials subject category- 2021
- Certificate of Appreciation from University of Kerala, 2018.
- All India Association for Christian Higher Education (AIACHE) Innovative Teacher Award – 2009.
- Chairman, Raman International Optronic Society (RIOS)
- Best paper Awards - 18
- Sivaramakrishna Iyer memorial Gold Medal for M.Sc from University of Kerala
- Subramonya Iyer memorial Gold Medal for M.Sc from University of Kerala.

- Letter of appreciation from CDAC, 2018.

MEMBERSHIP IN ACADEMIC BODIES

- (i) Director School of technology, University of Kerala
- (ii) Chairman, Board of Studies in Nanoscience and Nanotechnology, University of Kerala
- (iii) Chairman, Board of Studies in Electronics, University of Kerala
- (iv) Chairman, UG Board of Studies in Physics, M. A. College, Kothamangalam.
- (v) Member, Research Council, University of Kerala
- (vi) Member Board of studies in Optoelectronics, University of Kerala
- (vii) Member, Academic Council, University of Kerala
- (viii) Member PG Board of Studies in Physics, M. A. College, Kothamangalam
- (ix) Expert in MOOC-Swayam Platform, Developing high quality MOOCs in non-technology PG subjects, 19/01/2018.
- (x) Expert in Solar Energy Campus Project 2019
- (xi) Member, UG and PG Board of Studies in Physics, Amrita Viswa Vidhyapeedam

MEMBERSHIP IN PROFESSIONAL BODIES

- Life Member, Indian Laser Association
- Indian Association of Physics Teachers (IAPT), Kerala Regional Committee member.
- Member of Academy of Physics Teachers, Kerala.
- Raman International Optronics Society (RIOS)
- Life Member of Swadeshi Science.
- Energy Conservation Society, Kerala
- International Multidisciplinary Research Foundation, Andhra Pradesh, India

EXTENSION ACTIVITIES

- LED Bulb assembling- Dept. of optoelectronics, University of Kerala, 12/10/2022 inaugurated by Minister Anil
- LED Bulb assembling – Trained students, Kudumbasree ladies and villagers in Idukki
- Energy Conservation activities – Conducted Awareness programmes as Chairman, Energy conservation society, Idukki chapter

- Mass Education programme – Enjoy Physics - through Vickers Channel, Govt. of Kerala since 2012
- Science Popularisation activities to public through Centre for Scientific Studies, Thodupuzha

SEMINARS/INTERNSHIPS ORGANIZED

- Raman Optronics Webinar Series (ROWS 2021): Virtual International Conference., Raman International Optronic Society. 07/11/2022 – 07/12/2022
- Raman Optronics Webinar Series (ROWS 2021): Virtual International Conference, Dept. of optoelectronics, University of Kerala, Trivandrum., 07/11/2021 – 07/12/2021
- Raman Optronics Webinar Series (ROWS 2020): Virtual International Conference, Dept. of optoelectronics, University of Kerala, Trivandrum. 29/09/2020- 18/12/2020
- Coordinator of Inspire Science Camp (DST), Nov.2011, Nirmala College, Muvattupuzha.
- Coordinator of Inspire Science Camp (DST), Jan.2011, Nirmala College, Muvattupuzha.
- Coordinator of Eminent Teachers Lecture series, Started on 30/9/2011 Nirmala College, Muvattupuzha.
- H1N1 fever awareness programme on 22/6/2010.
- Workshop on Physics Teaching and learning process on 27/09/2010.
- Two day job training programme on “Cloth Printing for women” on February 3rd and 10th 2008
- Coordinator of the College Science Exhibition 2005, Newman College, Thodupuzha.
- Coordinator of the Electronic Workshop conducted by SCERT, in Newman College, Thodupuzha 2003

FUNDED PROJECTS

1. Optical emission diagnostics of laser induced plasma generation in nanoparticles – Innovative project, 2021 State plan fund, University of Kerala, Rs. 50 lakhs.
2. Pulsed Photoacoustic study in Nanobionics - Specific project, 2021 State plan fund, University of Kerala, Rs. 1.13 crores.

LIST OF JOURNAL PUBLICATIONS

2023

1. Nanoarchitecture of Eumeninae nest: The compositional mystery unwrapped, **S Sankararaman, Zeitschrift für Naturforschung A - A Journal of Physical Sciences**, (2023) (IF: 1.712) Q3
2. Analysis Of Musical Notes Of Flute: A Recurrence-Based Phase Space Approach, **S Sankararaman, Chinese Journal of Physics**, (2023) doi: 10.1016/j.cjph.2023.02.004 (IF: 3.957) Q2
3. Divulging the potential of sodium carbide thin film for semiconductor applications, **M S Swapna and S Sankararaman, Physica Status Solidi B: Basic Solid State Physics**, (2023), doi: 10.1002/pssb.202300049 (IF: 1.78). Q3
4. Comprehensive Analysis of Copper Plasma: A Laser-Induced Breakdown Spectroscopic Approach, A Ajith, M S Swapna, H Cabrera, and **S Sankararaman, Photonics**, 10(2), 199, (2023), doi: 10.3390/photonics10020199 (IF: 2.536) Q2
5. Reflecting the Quality Degradation of Engine Oil by the Thermal Diffusivity: Radiative and Nonradiative Analyses, V Gokul, M S Swapna, D Korte, and **S Sankararaman, Materials**, 16, 773, (2023). doi:0.3390/ma16020773 (IF: 3.623) Q2
6. Unveiling the potential of complex network in coronavirus proliferation study, **S Sankararaman, International Journal of Biomedical Engineering and Technology**, (2022) Q4
7. Scientific validation of Vedic knowledge on 'Rajatam' and the convection-current assisted synthesis of silver nanoparticles, M S Swapna, and **S Sankararaman, Indian Journal of Traditional Knowledge**, (2022) (IF: 1.091) Q2

2022

8. Unveiling the role of the beam shape in photothermal beam deflection measurements: A 1D and 2D complex geometrical optics model approach, M S Swapna, D Korte, and **S Sankararaman**, 9, 991, **Photonics (2022)**, doi:10.3390/photonics9120991 (IF: 2.536) Q2
9. Solid Volume Fraction Retained Tailoring of Thermal Diffusivity of Multi-Walled Carbon Nanotube Nanofluid: A Photothermal Investigation, M S Swapna, D Korte, and **S Sankararaman, Physica Status Solidi A: Applications and Materials Science** (2022) doi: 10.1002/pssa.202200797 (IF: 2.170) Q2
10. Multi-element Saha Boltzmann Plot (MESBP) coupled calibration-free laser-induced breakdown spectroscopy (CF-LIBS): An efficient approach for quantitative elemental analysis, Lekha Mary John, R. C. Issac, **S Sankararaman**, and K. K. Anoop, **Journal of Analytical Atomic Spectrometry** 37, 2451-2460 (2022) (IF: 4.351), doi:10.1039/D2JA00218C Q1
11. Markov chain: A novel tool for electronic ripple analysis, V Vijesh, M S Swapna, K Satheesh Kumar, and **S Sankararaman Indian Journal of Science and Technology**, 15(39), 1971-1977 (2022); doi: 10.17485/IJST/v15i39.1518 (IF: 0) 0
12. Recurrence network and recurrence plot: A novel data analytic approach to molecular dynamics in thermal lensing, **S Sankararaman, Journal of Molecular Liquids** 366, 120353 (2022) (IF: 6.615), doi: 10.1016/j.molliq.2022.120353 Q1

13. Unwrapping Aortic valve dysfunction through complex network analysis: A biophysics approach, V Vijesh, M S Swapna, K Satheesh Kumar, and **S Sankararaman**, **Journal of Applied Physics**, 132 (2022); doi: 10.1063/5.0102120 (IF: 2.877) Q2
14. Phase portrait and fractal analyses in Nanobiophotonics: Carbon nanoparticle aided intra-pigment energy transfer in leaves, **S Sankararaman**, **Physica Scripta** 97, 065005 (2022) doi: 10.1088/1402-4896/ac700e (IF: 3.081) Q2
15. Fractal and time-series analyses based rhonchi and bronchial auscultation: A machine learning approach, A Renjini, M S Swapna, Vimal Raj, S Sreejyothi, **S Sankararaman**, **Indian Journal of Science and Technology**, 15 (21) 1041-1051, (2022) doi: 10.17485/IJST/v15i21.627 (IF:0) 0
16. How the graph features decipher the soot assisted pigmental energy transport in leaves?: A laser-assisted thermal lens study in Nanobiophotonics, **S Sankararaman**, **Chinese Physics B** 31, 088201 (2022) doi: 10.1088/1674-1056/ac6740 (IF: 1.652) Q3
17. Bioacoustic signal analysis through complex network features, Vimal Raj, M S Swapna, and **S Sankararaman**, **Computers in Biology and Medicine**, 145, 105491 (2022) doi: 10.1016/j.compbimed.2022.105491 (IF: 6.698) Q1
18. Fractal and inertia moment analyses for thin film quality monitoring, S Soumya, Vimal Raj, M S Swapna, S Sreejyothi, S Suresh, and **S Sankararaman**, **Optical Engineering** , 61(4), 044106, (2022) doi: 10.1117/1.OE.61.4.044106 (IF: 1.352), Q2
19. Building complex network from laser beam: introducing a novel parameter for beam quality analysis, **S Sankararaman**, **The European Physical Journal Plus**, 137, 385(2021), doi: 10.1140/epjp/s13360-022-02575-0 (IF: 3.758) Q2
20. Speckle interferometric probing of intrafilm thermal-induced particle dynamics in RF sputtered MoO₃ films, S Soumya, S Sreejyothi, Vimal Raj, M S Swapna, and **S Sankararaman**, **Pramana – Journal of Physics**, 96, 131, (2022), doi: 10.1007/s12043-022-02372-5 (IF: 2.699) Q2
21. Complex network-based pertussis and croup cough signal analysis for digital auscultation: a machine learning approach, A Renjini, M S Swapna, Vimal Raj, K Satheesh Kumar, **S Sankararaman**, **Physica D: Nonlinear Phenomena**, 133184, (2022), doi: 10.1016/j.physd.2022.133184 (IF: 3.751) Q1
22. RF sputtered boron carbide thin film for UVB and UVC shielding: A greener approach, H V Saritha Devi, Geethu Krishna, M S Swapna, and **S Sankararaman**, **Journal of Materials Science: Materials in Electronics**, 33(9), 1-11 (2022), doi: 10.1007/s10854-022-07850-5 (IF: 2.779) Q2
23. Reflections of thin film surface roughness on graphs of specklegram: A novel approach, **S Sankararaman**, **Physica Scripta**, 97(2), 025003, doi: 10.1088/1402-4896/ac4b70 (2022), (IF: 3.081) Q2
24. Unwrapping the compositional mystery of Eumeninae nest: A laser-induced breakdown spectroscopic study, **S Sankararaman**, **Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy**, 268, 120713 (2022), doi: 10.1016/j.saa.2021.120713 (IF: 4.831) Q2

25. Power spectral fractal dimension and wavelet features for mammogram analysis: A machine learning approach, A Renjini, M S Swapna, Vimal Raj, Babatunde S Emmanuel, and **S Sankararaman**, **Pattern Recognition and Image Analysis**, 32, 419–428 (2022), doi: 10.1134/S105466182202016X (IF: 0). Q3
26. Low power CW laser-assisted synthesis of plasmonic aluminium nanoparticles using low duty cycle optical chopper, M S Swapna and **S Sankararaman** **Canadian Journal of Physics**, 100(3) (2022) 10.1139/cjp-2021-0042 (IF: 1.358). Q3
27. Nonlinear signal processing, spectral, and fractal based stridor auscultation: A machine learning approach, Vimal Raj, A Renjini, S Sreejyothi, M S Swapna, and **S Sankararaman**, **Kuwait Journal of Science**, 49(2) (2022), doi: 10.48129/kjs.11363 (IF: 0.806). Q2
28. Acclimatisation through thermal diffusivity tuning of coconut oil – A mode mismatched dual-beam thermal lens study, Vimal Raj, M S Swapna and **S Sankararaman**, **Journal of Ayurveda and Integrative Medicine**, 13(2), 100502 (2022), doi: 10.1016/j.jaim.2021.07.018 (IF: 0). Q2
29. Unveiling the potential of phase portrait based recurrence network: A revelation through lung sound analysis, **S Sankararaman**, **Journal of Complex networks**, 10(1), cnab046 (2021), doi: 10.1093/comnet/cnab046 (IF: 1.492). Q2

2021

30. A machine learning approach to detect aortic valve dysfunction through phase portrait feature extraction, **S Sankararaman**, **The European Physical Journal Special Topics**, (2021), doi: 10.1140/epjs/s11734-021-00326-3 (IF: 2.891). Q2
31. Power spectral fractalysis: A surrogate method for laser-induced plasma temperature analysis, **S Sankararaman**, **The European Physical Journal Special Topics**, (2021), doi: 10.1140/epjs/s11734-021-00328-1 (IF: 2.891). Q2
32. Can graph reveal optical absorption? – Interrogation through thermal lensing, **S Sankararaman**, **Optik**, 248, 168176 (2021), doi: 10.1016/j.ijleo.2021.168176 (IF: 2.84). Q2
33. Graph based feature extraction and classification of wet and dry cough signals: A machine learning approach, A Renjini, M S Swapna, Vimal Raj, and **S Sankararaman**, **Journal of Complex networks**, 6 (2021), doi: 10.1093/comnet/cnab039 (IF: 1.492). Q2
34. Untangling the graph based features for lung sound auscultation, **S Sankararaman**, **Biomedical Signal Processing and Control**, 71(B), 103215 (2021), doi: 10.1016/j.bspc.2021.103215 (IF: 5.076). Q1
35. Development of Zinc Oxide-Multi-Walled Carbon Nanotube hybrid nanofluid for energy-efficient heat transfer application: A thermal lens study, V Gokul, M. Swapna, Vimal Raj, Svetlana Von Gratowski, and **S Sankararaman**, **Physics of Fluids**, 33, 107108 (2021); doi: 10.1063/5.0067041 (IF: 4.98). Q1
36. How the complex network of specklegram decipher intra-film thermal induced dynamics?, **S Sankararaman**, **Annalen der Physik**, 533(12), 2100358 (1-9) (2021), doi: 10.1002/andp.202100358 (IF: 3.012). Q2

37. Graph-Based Complex Network Features for the Auscultation of Mitral Incompetence, **S Sankararaman**, **Chinese Journal of Physics**, 74, 72-81 (2021), doi:10.1016/j.cjph.2021.09.001 (IF: 3.957). Q2
38. Complex network analysis of thermal lens signal: A Markov model approach, **S Sankararaman**, **Applied Optics**, 60 (22), 6409-6413 (2021), doi: 10.1364/AO.431422 (IF: 1.905). Q2
39. Nanostructured ZnO and ZnO:Pd with MXene overlayer SPR biosensors, V R Sudheer, S R Sarath Kumar, and **S Sankararaman**, **Optical and Quantum Electronics**, 53(6), 340 (2021), doi: 10.1007/s11082-021-03042-3 (IF: 2.794). Q2
40. Evolution of fractal dimension in pulsed laser deposited MoO₃ film with ablation time and annealing temperature, S Soumya, Vimal Raj, M S Swapna and **S Sankararaman**, **Applied Physics A**, 127(521), (2021), doi: 10.1007/s00339-021-04676-6 (IF: 2.983). Q2
41. Unveiling the thermal-induced molecular dynamics in fluids: A graph-based heat flow analysis, **S Sankararaman**, **Physics of fluids**, 33(6), 077101 (2020), doi: 10.1063/5.0056817 (IF: 4.98). Q1
42. Surface Plasmon Resonance Based Fiber Optic Metallic Multilayer Biosensors, ACS Omega, V R Sudheer, S R Sarath Kumar, and **S Sankararaman**, **ACS Omega** 6, 23, 15068–15077 (2021), doi: 10.1021/acsomega.1c01236 (IF: 4.132). Q1
43. Neural net pattern recognition based auscultation of croup cough and pertussis using phase portrait features, A Renjini, M S Swapna, Vimal Raj, S Sreejyothi and **S Sankararaman**, **Chinese Journal of Physics**, 72, 214-222 (2021), doi: 10.1016/j.cjph.2021.05.002 (IF: 3.957). Q2
44. Concentration dependent thermal duality of hafnium carbide nanofluid for heat transfer applications: A mode mismatched thermal lens study, V Gokul, M S Swapna, Vimal Raj, H V Saritha Devi, and **S Sankararaman**, **International Journal of Thermophysics**, 42, 109 (2021), doi: 10.1007/s10765-021-02859-0 (IF: 2.416). Q3
45. Phthalocyanine induced optical nonlinearity in ceria: A Z-scan study, Riya Sebastian and **S Sankararaman**, **Brazilian Journal of Physics**, 51(4), 1-8 (2021), doi: 10.1007/s13538-021-00918-3 (IF: 1.326). Q3
46. Unwrapping the phase portrait features of adventitious crackle for auscultation and classification: a machine learning approach, S Sreejyothi, A Renjini, Vimal Raj, M S Swapna, and **S Sankararaman**, **Journal of Biological Physics**, 1-13, (2021), doi: 10.1007/s10867-021-09567-8 (IF: 1.56) Q3
47. Thermal Lensing of Multi-Walled Carbon Nanotube Solutions as Heat-Transfer Nanofluids, M S Swapna, Vimal Raj, Humberto Cabrera, and **S Sankararaman**, **ACS Applied Nanomaterials**, 4, 3416–3425 (2021), doi: 10.1021/acsanm.0c03219 (IF: 6.14). Q1
48. Unwrapping the laser beam quality through nonlinear time series and fractal analyses: A surrogate approach, Vimal Raj, M S Swapna, and **S Sankararaman**, **Optics and Laser Technology**, 140, 107029 (2021), doi: 10.1016/j.optlastec.2021.107029 (IF: 4.939). Q1
49. Thermal diffusivity of molybdenum oxide nanowire film: a photothermal beam deflection study, S Soumya, Vimal Raj, M S Swapna and **S Sankararaman**, **Optics and** Q1

Laser Technology, 139, 106993 (2021), doi: 10.1016/j.optlastec.2021.106993 (IF: 4.939).

50. Boron carbide Nanowires from castor oil for optronic applications: A low-temperature greener approach, H V Saritha Devi, M S Swapna, and **S Sankararaman**, **Journal of Materials Science: Materials in Electronics** 32, 7391-7398 (2021) doi: 10.1007/s10854-021-05449-w (IF: 2.779). Q2
51. Unravelling the potential of phase portrait in the auscultation of mitral valve dysfunction, M S Swapna, S Sreejyothi, A Renjini, Vimal Raj, and **S Sankararaman**, **The European Physical Journal Plus**, 136, 184 (2021), doi: 10.1140/epjp/s13360-021-01185-6 (IF: 3.758). Q2
52. Thermal diffusivity downscaling of molybdenum oxide thin film through annealing temperature-induced nano-lamelle formation: A photothermal beam deflection study, S Soumya, Vimal Raj, M S Swapna and **S Sankararaman**, **The European Physical Journal Plus**, 136, 187 (2021), doi: 10.1140/epjp/s13360-021-01121-8 (IF: 3.758). Q2
53. Weathering induced morphological modification on the thermal diffusivity of natural pyrrhotite: A thermal lens study, M S Swapna, V Gokul, Vimal Raj, R Manu Raj, S N Kumar, and **S Sankararaman**, **Philosophical Magazine & Philosophical Magazine Letters**, 101(7), 819-835 (2021), doi: 10.1080/14786435.2021.1872810 (IF: 1.948). Q2
54. Is SARS CoV-2 a multifractal? – Unveiling the Fractality and fractal structure, M S Swapna, Vimal Raj, S Sreejyothi, and **S Sankararaman**, **Brazilian Journal of Physics**, 51(3), 731-737 (2021), doi: 10.1007/s13538-020-00844-w (IF: 1.364). Q3
55. Hidden periodicity in Stripe 82 with Saraswati supercluster – A fractal analysis, Vimal Raj, M S Swapna, and **S Sankararaman**, **Communications in Theoretical Physics**, 73, 015402 (2021), doi: 10.1088/1572-9494/abc3ab (IF: 2.877). Q2
56. Speckle Interferometric Investigation of Argon Pressure-Induced Surface Roughness Modifications in RF- Sputtered MoO₃ Film, S Soumya, R Arun Kumar, S Sreejyothi, Vimal Raj, M S Swapna and **S Sankararaman**, **Journal of Nondestructive Evaluation**, 40(1), 10 (2021), doi: 10.1007/s10921-020-00741-x (IF: 2.588). Q2

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