

## FULL LIST OF PUBLICATIONS

### **A. First author papers**

1. 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), 10.1021/acsanm.0c03219, (IF: 5.19).
2. Development of prototype of electronic speckle interferometry based spirometer, **M S Swapna**, Arun Kumar, Sunil Kumar, S Sreejyothi, Vimal Raj, and S Sankararaman, **Optics and Lasers in Engineering**, 136, 106318 (2021) 10.1016/j.optlaseng.2020.106318, (IF: 4.836).
3. 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), 10.1140/epjp/s13360-021-01185-6, (IF: 3.91).
4. Complex network-based cough signal analysis for digital auscultation: a machine learning approach, **M S Swapna**, A Renjini, Vimal Raj, K Satheesh Kumar, S Sankararaman, **Physica D: Nonlinear Phenomena**, 133184, (2022), 10.1016/j.physd.2022.133184 (IF: 2.3)
5. Low power CW laser-assisted synthesis of plasmonic aluminium nanoparticles using low duty cycle optical chopper, **M S Swapna**, S Sankararaman, **Canadian Journal of Physics** 100(3) (2021), 10.1139/cjp-2021-0042 (IF: 1.24)
6. 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: 0.757)
7. Nonlinear signal processing, spectral, and fractal based stridor auscultation: A machine learning approach, **M S Swapna**, Vimal Raj, A Renjini, S Sreejyothi, and S Sankararaman, **Kuwait Journal of Science**, 49(2) (2021), 10.48129/kjs.11363 (IF: 0.948).
8. Nonlinear time series and principal component analyses: Potential diagnostic tools for COVID-19 auscultation, **M S Swapna**, Vimal Raj, A Renjini, S Sreejyothi, and S Sankararaman, **Chaos, Solitons & Fractals**, 140, 110246, (2020) 10.1016/j.chaos.2020.110246, (IF: 5.944).
9. Soot effected sample entropy minimization in nanofluid for thermal system design: A thermal lens study, **M S Swapna**, Vimal Raj, K Satheesh Kumar, and S Sankararaman, **Journal of Molecular Liquids**, 318, 114038 (2020) 10.1016/j.molliq.2020.114038, (IF: 6.1).

10. Downscaling of Sample Entropy of Nanofluids by Carbon Allotropes: A Thermal Lens Study, **M S Swapna**, Vimal Raj, K Satheesh Kumar, and S Sankararaman, **Chaos: An Interdisciplinary Journal of Nonlinear Science**, 30, 073116 (2020), 10.1063/5.0009756, (IF: 3.642).
11. Time series and fractal analyses of wheezing: A novel approach, **M S Swapna**, A Renjini, Vimal Raj, S Sreejyothi, and S Sankararaman, **Physical and Engineering Sciences in Medicine**, 43, 1339–1347 (2020) 10.1007/s13246-020-00937-5, (IF: 1.161).
12. 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**, 819-835, (2021) 10.1080/14786435.2021.1872810, (IF: 1.864).
13. Ultralow duty cycle chopper instigated low power continuous wave laser assisted synthesis of silver nanoparticles: A novel approach, **M S Swapna**, A S Ashik, R A Krishnanunni, V P N Nampoori, S Sankararaman, **Journal of Laser Applications**, 32, 042017 (2020), 10.2351/7.0000215, (IF: 1.937).
14. 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**, (2021), 10.1007/s13538-020-00844-w, (IF: 1.326).
15. Boron-rich Boron carbide from soot: A low- temperature green synthesis approach, **M S Swapna**, H V Saritha Devi, and S Sankararaman, **Journal of the Korean Ceramic Society**, 57, 651–657 (2020), 10.1007/s43207-020-00066-5 (IF: 1.75).
16. The efflorescent carbon allotropes: Fractality preserved blooming through alkali treatment and exfoliation, **M S Swapna** and S Sankararaman, **Nano Express**, 1(2) 020010 (2020), 10.1088/2632-959X/aba41d.
17. Organometallic sodium carbide for heat transfer applications: A thermal lens study, **M S Swapna** and S Sankararaman, **International Journal of Thermophysics**, 41, 93 (2020), 10.1007/s10765-020-02675-y, (IF: 1.608).
18. Absolute Porosity Analysis in Carbon Allotropic Nanofluids: A Sankar–Swapna Model Approach, **M S Swapna**, S Sreejyothi, and S Sankararaman, **Russian Journal of Physical Chemistry A**, 94 (13) 2810–2817 (2020) 10.1134/S0036024420130270, (IF: 0.719).
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31. Pharmacological application of thermal Lens technique - A thermal diffusivity study, [M S Swapna](#), S Manjusha, Vimal Raj, MishaHari, and S Sankararaman, **Journal of the Optical Society of America B**, **35**(7), 1662 (2018), 10.1364/JOSAB.35.001662, (IF: 2.180).
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38. Particulate Exhaust Analysis from Internal Combustion Engines, [M S Swapna](#), R C Arsha, Dani Dileep, Rageena Joseph, and S Sankararaman, **MOJ Solar and Photoenergy Systems**, 1(3), 00013 (2017), 10.15406/oajp.2017.01.00013.
39. Ultraviolet Protection Action of Carbon Nanoparticles in Leaves, [M S Swapna](#), C Beryl, S S Reshma, Veena Chandran, V S Vishnu, P M Radhamany, and S Sankararaman, **Bionanoscience**, 7, 583 (2017), 10.1007/s12668-017-0454-7, (IF: 0.920).
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44. Investigation of graphene oxide in diesel soot, **M S Swapna** and S Sankararaman, **Journal of Material Science and Nanotechnology**, **5**(1), 103 (2017) 10.15744/2348-9812.5.103.
45. Synthesis and Characterization of Carbon Nano Kajal, **M S Swapna**, Pooja V Menon, Anamika S Anand, S Soumya and S Sankararaman, **Juniper Online Journal of Material Science**, **1**(4), 555566 (2017), 10.19080/JOJMS.2017.01.555566.

## **B. Co-author papers**

46. Bioacoustic signal analysis through complex network features, Vimal Raj, **M S Swapna**, and S Sankararaman, **Computers in Biology and Medicine**, **145**, 105491 (2022) 10.1016/j.combiomed.2022.105491 (IF: 4.589)
47. 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: 1.084),
48. 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** (2022)
49. Speckle interferometric probing of intrafilm thermal-induced particle dynamics in RF sputtered MoO<sub>3</sub> films, S Soumya, S Sreejyothi, Vimal Raj, **M S Swapna**, and S Sankararaman, **Pramana – Journal of Physics**, (2022) (IF: 2.219)
50. 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), 10.1007/s10854-022-07850-5 (IF: 2.478)

51. 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** (2021)
52. 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** (2021) (IF: 2.011)
53. Development of Zinc Oxide-Multi-Walled Carbon Nanotube hybrid nanofluid for energy-efficient heat transfer application: A thermal lens study, V Gokul, **M S Swapna**, Vimal Raj, Svetlana Von Gratowski, and S Sankararaman, **Physics of Fluids** (2021), (IF: 3.512)
54. Unwrapping the phase portrait features of adventitious crackle for auscultation and classification: A machine learning approach, S Sreejyothi, **M S Swapna**, A Renjini, Vimal Raj, and S Sankararaman, **J. of Biological Physics**, 47, 103–115 (2021) 10.1007/s10867-021-09567-8 (IF: 1.365).
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58. 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) 10.1016/j.optlastec.2021.107029, (IF: 3.867).
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61. 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** (2021), 10.1140/epjp/s13360-021-01121-8, (IF: 3.9).
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76. **Low temperature synthesis of multilayered - hollow microspheres of boron carbide film from castor oil for photonic applications**, H V Saritha Devi, **M S Swapna**, G Ambadas and S Sankararaman, **Journal of Applied Physics**, 124, 065303 (2018), 10.1063/1.5040681, (IF: 2.546).
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