

Name of Faculty Dr. Santhosh Kumar A
 Designation Asst. Professor
 Nature of Job/Appointment Contract
 Date of Joining 01 - 07 - 2019
 E-mail asanthoshkumar_physics@cbit.ac.in



Education Qualifications

	Name of the Degree	Class
Ph. D	Doctor of Philosophy (Physics)	Awarded
PG	M. Sc. (Physics)	First
UG	B. Sc. (Comp)	First

Work Experience

Teaching	08 Years
Research	10 Years (5 Years Post Doc)
Industry	2 Years
Others	--

Area of Specialization

Materials Science, Opto-Electronic Nanostructures, Sensors, EMI Shielding

Professional Memberships

Member, International Association of Engineers - IAENG
 Number: 296618

Responsibilities held at Institution Level

1. Research Co-ordinator

Responsibilities held at Department Level

1. AQAR-Departmental Coordinator
2. Member, Course Expert Group.
3. Class- Incharge
4. Student Mentor

Research Guidance

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Awards Received

1. SERB-NPDF fellowship
2. DRDO-DIAT Postdoctoral Research Associate fellowship
3. DRDO-DIAT Senior Research fellowship
4. Research Collaboration fellowship, University of Malaya, Kuala Lumpur, Malaysia
5. NITK - GATE -Fellowship

Courses Handled at Under Graduate / Post Graduate Level.

1. Electromagnetic theory and Quantum mechanics
2. Optics and Semiconductor Physics
3. Physics

No. of Papers Published

National Journals –	--	International Journals –	21
National Conference –	--	International Conference –	16

Projects Carried out

1. Noble plasmonic AuPd anchored ZnO/SnO₂ nanoarray heterostructures for an efficient Light Emitting Devices and Sunlight Photocatalytic decomposition of energetic materials funded by DST (SERB/PDF/004095)
 PI: Dr. Santhosh Kumar A; Mentor: Dr. A. C. Abhyankar
 Fund: Rs. 19, 20000/- (**Completed**)
2. Exploring spin caloritronic materials for waste heat management, magnetic refrigeration and EMI shielding applications DST (CRG/2022/0007993);
 P.I. Dr. S. Shanmukarao ; Co-PI: Dr. Santhosh Kumar A
 Fund: Rs. 45,00000/- (**On-going**)

3.Exploring doped-MnNiGe ribbons for magnetocaloric, magnetoresistance and EMI shielding applications (UGC-CSR)
PI: Dr. Santhosh Kumar A ; Co-Pi: Dr. S. Shanmukharao
Fund: Rs. 1,35, 000/- **(On-going)**

4.Development of ZnO nanoarray based photodetectors for enhanced opto-electronic performance
PI : Dr. Santhosh Kumar A (Applied In House project funding) Rs. 1,36, 294/- **(On-going)**

5. Exploring Magnetocaloric effect, universal scaling and critical magnetic behavior of 4d doped MnSi.
Co-PI: Dr. Santhosh Kumar A ; Fund: Rs. 152421/-; Duration: 1 Year **(On-going)**

Patents	-1
Technology Transfer	---
Invited Speaker	---

No. of Books/Chapter Published with details	Assistant Editor: Full Paper Proceedings of the Conference ICMP&C-2020; 978-81-946476-9-0, 2020, 210.
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Details of Short-Term Training Programs/Faculty Development Programs/Seminars/Workshops. Other Trainings (Attended and/or Organized) .	<ol style="list-style-type: none"> 1. Understanding Research Methods, University of London (Coursera) - 4weeks 2. How Things Work: An Introduction to Physics, University of Virginia (Coursera)- 8 weeks 3. Learning Physics Through Simple Experiments, IIT Kanpur From 02-04-2020 to 10-06-2020 4. One Week Faculty development program on Recent Advances in Biomedical Applications and Communication Networks, GMRI, Rajam, During 13 -18 July 2020 5. Five days Faculty Development Program on Renewable Energy Systems, IGEN PIT, During 8th June 2020 to 12th June 2020. 6. One week online Faculty Development Program on Materials: Recent Trends & Engineering Applications, GRIET, Hyderabad, During 2nd June 2020 to 07th June 2020. 7. One-Week Online Faculty Development Programme (FDP) on "Outcome Based Education & NBA Accreditation", CBIT, Hyderabad During 28/5/2020 to 1/6/2020 8. One-week Online Faculty Development Program on "The Use of Virtual Physics Labs - Creating Next Generation Teachers", May 20-24, 2020. 9. E-workshop on Mossbauer spectroscopy and X-ray diffraction techniques-2020, Organised by Department of Physics, University P.G. college, Palamuru University, Telangana, on 23-07-2020 10. International webinar on Emerging Trends in Materials Science-2020, Department of Physics, maharaja Bhoj Govt PG college, M.P, during 5-7 July 2020 11. One day seminar on "Recent Trends in Materials and Its Applications in Engineering" organized by Dept. of Physics, CBIT, Hyderabad at CBIT on 20.11.2019. 12. One day Seminar on "Physics and its applications in Engineering" organized by Dept. of Physics, CBIT, Gandipet, Hyderabad at CBIT on 13.03.2019. 13. National workshop on Small and Wide Angle X-Ray Scattering (SWAXS), DIAT, Pune During 12-13 Dec 2018. 14. Successfully completed "Physics of silicon solar cells" an online non-credit course authorized by École Polytechnique and offered through Coursera on 20-08-2021 15. FDP-ICT Tools for Effective teaching and learning IQAC, Kamala Nehru Mahavidyalaya, Nagapur, 8-10, june 2021 16. ATAL FDP on "Novel Materials" from 23/08/2021 to 27/08/2021 at SRM Institute of Management and Technology.
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17. AICTE QIP sponsored STC/ FDP on Intelligent Photonics at NITTTR, Chandigarh from 4-9 October, 2021.
18. Online International Faculty Development Program on Data Analyst, 19-06-2023 to 23-06-2023. Apssdc
19. Online National One week FDP on "ICT Tools for effective teaching learning, Kamala Nehru Mahavidyala, Nagpur
18. One week online FDP on "Quality Education through OBE 22-01-2024 to - 27-01- 2024, CBIT
19. Magnetism of Fe doped MnNiGe: bulk magnetization study" 6th Research Day 2024 held during 13-14 December 2024 at Chaitanya Bharathi Institute of Technology, Hyderabad, India.

Details of Journal Publications/
Conferences (National and
International) from 2017

- i) Santhosh Kumar A, Manoj Ovhal, B.V. Bhaskara Rao, S.N. Kale and A.C. Abhyankar "Sputter deposited Intermetallic Ni 3 Al nanocrystalline thin films: An efficient microwave shielding application", ICMAGMA-2017, 1-3 Feb 2017, DMRL, Hyderabad.
- ii) Santhosh Kumar A, Rama Krishna Reddy B.S., Naresh Chinta, A. C. Abhyankar " Enhanced Photoluminescence and Photosensing properties of Al doped ZnO nanoarrays" 18-20, December 2017, IIIT (RGUJKT)-Basar.
- iii) Santhosh Kumar A, Y Srinivasa Reddy, Raja Gopal K, Ashutosh C Abhyankar, Growth of Hydrophobic Al doped ZnO nanoarrays and their Raman Scattering, Photoluminescence and Photo detection properties, "International Conference on Purification and Recycling of Electronic Materials (ICPREM-2020)" organized by C-MET Hyderabad during 8-10 March 2020.
- iv) Santhosh Kumar A, Natraj G, Y. S. Reddy, B. Linga Reddy "Recent Advances in the Fabrication of ZnO Based Nanostructures for Opto-Electronic Devices, ICMP&C- 2020, CBIT, Hyderabad.
- v) Santhosh Kumar A, S. Sahare, K yadav, A C Abhyankar " Hydrophilic ZnO nanorod array-reduced graphene oxide hybrid nanocomposites for photoelectrochemical applications" International Conference on Nonoscience and Nanotechnology (ICONN 2021), SRM IST, Chennai Feb 1-3, 2021, Page No: 581
- vi) International Conference on "Recent Advances in Chemical, Physical and Biological Sciences" Nabira Mahavidyalaya, Katol and Association of Chemistry Teacher, Mumbai on 29th and 30th June 2021
- vii) International Conference on Multifunctional Advanced Materials (VICMAM-2021) on 9th and 10th August 2021
- viii) Santhosh Kumar A, S. Shanmukharao Sammatham, B V Bhaskar Rao, S N kale "Influence of Sputtering pressure on structural, morphological and microwave properties of Ni₃Al thin films" CBIT, Hyderabad (2023).

International Journal:

1. Prabhu Rajagiri, B. Arun, S. Shanmukharao Samatham, Sankararao Yadam, Rajagopal Kurapati, **Santhosh Kumar Adpa**, Bunt Rani Roy, Gowrinaidu Babbadi, K.C. James Raju "Uncovering the magnetism, universality class, magnetocaloric effect and ferromagnetic resonance of quenching-treated Co_{0.3}Zn_{0.7}FeO" Materials Chemistry and Physics, 345, (2025), 131176.
2. Martha Ramesh,, **A. Santhosh Kumar** , P. V. Chandrasekar , Arijit Mondal, Ravuri Venkateswara Rao , Ravoori Nagaraju , K. Chandrakanta, Ganji Saidulu "Influence of Surface Roughness, Electrical, and Structural Properties on the Catalytic Sulfurization of Glutamic Acid for S- Glutamate Production: Enhancement in Rate and Selectivity under the Catalyst of Lycopene". Iranian Journal of Catalysis, 15(2025), 1-10.
3. Boya, Rajasekhar, Yenugonda, Venkateswara, Purushotham, E. Casey, Jacob, **Adpa, Santhosh Kumar** , Chandra Sekhar, M., Nataraju, G., Samatham, S. Shanmukharao, Pathak, Arjun K., Weak first-order phase transition, exchange bias effect, and *T-H* phase diagram of Mn_{0.75}Fe_{0.25}NiGe, Phys. Rev. Materials (Nov 2024), 8, 114411.
4. S. Shanmukharao Samatham, Akhilesh Kumar Patel, **Santhosh Kumar A**, A. K. Sinha, M. N. Singh, S. Shravan Kumar Reddy, "Relating Structural Sensitivities and Helical Magnetic Order of MnSi," IEEE International Magnetic Conference - Short papers (INTERMAG Short papers), Rio de Janeiro, Brazil, (July 2024), pp. 1-2
5. S. Shanmukharao Samatham, Saurabh Singh, S. Shravan Kumar Reddy, **Santhosh Kumar A**, Sankararao Yadam, P. D. Babu, Tsunehiro Takeuchi and K. G. Suresh "Revealing magnetic and physical properties of TbFe_{4.4}Al_{7.6}: Experiment and theory" J. Phys.: Condens. Matter 36, 2024, 205802

6. S. Shanmukharao Samatham, Y Venkateshwara, **A Santhosh Kumar**, B Gowri naidu, K G Suresh, Putative complex ferrimagnetic behaviour crinnnal, AIP Conf Proc, 2995, 020179 (2024).
7. **Santhosh Kumar A**, Bhaskar Rao, A.C. Abhyankar, Suwarna Datar, " Novel cost effective and electromagnetically active intermetallic Ni₃Al thin films for microwave shielding applications "Applied Physics A" 129(5) (2023).
8. Sanjay Sahare, **Santhosh kumar A***, T. Bhawe, A.C. Abhyankar, "Novel cost-effective and electrocatalytically active intermetallic nickel aluminide counter electrode for dye sensitized solar cells" *Nano Ex.* 2020 1 030029
9. Premkumar Murugaiyan , Amitava Mitra, Ashis K Panda, **A Santhosh Kumar**, Rajat K Roy, Suneel Kumar Srivastava, Electromagnetic interference shielding effectiveness of soft magnetic amorphous ribbons, *Physica B: Condensed Matter*, 568, 2019, 13-17
10. Sandesh, **Santhosh Kumar A**, Amruta Jambhale, P. S. Kulkarni, A. C. Abhyankar "Enhanced photocatalytic activity of magnetic BaFe₁₂O₁₉ nano-platelets than TiO₂ with emphasis on reaction kinetics, mechanism and reusability" *ACS: Industrial & Engineering Chemistry Research*, DOI: 10.1021/acs.iecr.8b02859 (2018).
11. Manoj Oval, **Santhosh Kumar A**, Manjeet kumar, A. C. Abhyankar "Photoluminescence quenching and enhanced spin relaxation in Fe doped ZnO Nanoparticles" *Materials chemistry and physics* (2017) 195: 58-66.
12. **Santhosh Kumar A**, Natraj G, Y. S. Reddy, B. Linga Reddy "Recent Advances in the Fabrication of ZnO Based Nanostructures for Opto-Electronic Devices, Proceeding of ICMP&C 2020, 978-81-946476-9-0, 2020, 210.

