

Name of Faculty Dr. S. SHANMUKHARAO SAMATHAM
 Designation Assistant Professor
 Nature of Job/Appointment Regular
 Date of Joining 11-10-2021
 E-mail shanmukharao_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. (Mathematics, Physics & Chemistry)	First
Others	M. Phil.	First

Work Experience

Teaching	2 Years 9 Months
Research	9 Years 2 Months (includes teaching experience)
Industry	-
Others	-

Area of Specialization Magnetic novel materials for quantum phase transitions, Strongly Correlated Electron Systems, First order magnetic systems.

Professional Memberships -
 Responsibilities held at Institution Level -
 Responsibilities held at Department Level -
 Research Guidance -

- Awards Received
1. Korea Research Fellowship (KRF) 2019
 2. Global Excellence Stature Fellowship at University of Johannesburg 2017.
 3. Institute Postdoctoral Fellowship (IPDF) of IIT Bombay 2015.
 4. Best Oral Presentation Award in Research Scholar's Workshop on Physics of Materials at UGC-DAE CSR, Indore in 2013.
 5. Qualifier to participate in Technical University Munich's Research Opportunity Week (TUM-ROW) during November 11-15, 2013.
 6. CSIR-Senior Research Fellow (CSIR-SRF) in 2013.
 7. GATE (Graduate Aptitude Test in Engineering) 2009.
 8. JEST (Joint Entrance Screening Test JEST) 2009.

Courses Handled at Under Graduate /Post Graduate Level.

No. of Papers Published National Journals – 04 International Journals – 44
 National Conference – 14 International Conference – 05

- Projects Carried out
1. Exploring magnetic, magnetocaloric and magnetoresistive properties of $Ti(Fe_{1-x}Co_x)_2$ ($0 \leq x \leq 1$) Science and Engineering Research Board (File No. TAR/2018/000454), Grant: 18.3 lakh
 2. Designing Heusler compounds for magnetic refrigeration and spintronics application funded by UGC-DAE Consortium for Scientific Research, Indore (CRS Scheme, CSR-IC-256/2017-18/133, Grant. Rs. 45,000/-)

Patents -
 Technology Transfer -
 Invited Speaker -

No. of Books/Chapter Published with details Large adiabatic temperature change in magnetoelastic transition in nanocrystalline of heusler $Ni_{50}Mn_{32}Sn_{18}$ alloys
 A. Prasanna, S. Ram, V. Ganesan and S. S. Rao
 Functional Materials McMillan Publishers Ltd. New Delhi ISBN 978-935-059046-1, p. 195 (2011)

Details of Short-Term Training Programs/Faculty Development Programs/Seminars/ Workshops. Other Trainings (Attended and/or Organized).

1. International Virtual Conference on Materials Research (IVCMR-2) by Eswari Engineering College, Chennai during August 26-27, 2021
2. One Week online Short Term Training Program Emerging Tools and Technologies in Materials Science and Engineering, organized by Department of Applied Physics, Jabalpur Engineering College, Jabalpur (M. P.), during September 21-25, 2020.
3. Online SPICE-SPIN+X Seminar on Spintronics Nanodevice - How small can we make it and what else can we use it for on September 23, 2020, conducted by Spin Phenomena Interdisciplinary Center, JGU, Mainz.
4. One day National Webinar on Frontiers of Scanning Probe Microscopy organized by Department of Applied Physics, Jabalpur Engineering College, Jabalpur (M. P.) under TEQIP-III, on September 19, 2020.
5. International Webinar series on Modern Approach on Magnetism and Material Science in Engineering from September 15-18, 2020 conducted by the Department of Physics in association with IEEE RAS Chapter, MIT Mysore.
6. Online International Symposium on New Research Horizons in Nano and Radiation Materials from September 10-11, 2020 organized by Department of Physics, Dada Patil Mahavidyalaya Karjat, (M. H.), India.
7. Online SPICE-SPIN+X Seminar on Spintronic devices for artificial neural networks on September 02, 2020 conducted by Spin Phenomena Interdisciplinary Center, JGU, Mainz.
8. One Week Online Short Term Training Program on Recent Progress in Material Science and Engineering (STTP-RPMSE) during August 24-28, 2020 organized by Department of Applied Physics, Jabalpur Engineering College, Jabalpur (M. P.), India.
9. One Week Online Faculty Development Program on Engineering Physics and Materials Science, organized by Department of Physics, CBIT, Hyderabad from August 03-07, 2020.
10. Virtual One Week Faculty Development Programme on Advanced Nanomaterials & Their Engineering Applications (AdvNano-2020) from August 3-8, 2020 organized by Department of Mechanical Engineering, GMR Institute of Technology, Rajam, India.
11. Virtual Workshop on Magnetic Skyrmions conducted by IEEE Magnetic Society, Italy Chapter on July 7, 2020.
12. International Virtual Conference on Advanced Nanomaterials Applications (VCAN 2020) organized by Center for Nanotechnology, VIT, Vellore from June 17-19, 2020.

Details of Journal Publications/
Conferences (**National and International**)

International Journals

1. Magnetism and transport behaviour of $\text{Ni}_{42}\text{Co}_8\text{Mn}_{38}\text{Sb}_{12}$: Magnetization, electrical resistivity and Hall effect measurements Akhilesh Kumar Patel, S. Shanmukharao Samatham and K. G. Suresh Materials Research Bulletin, 146, 111577, (2021) IF: 4.641
2. High-TC ferromagnetic inverse Heusler alloys: A comparative study of Fe_2RhSi and Fe_2RhGe Y. Venkateswara, S. Shanmukharao Samatham, Akhilesh Kumar Patel, P. D. Babu, Manoj Raama Varma, K. G. Suresh, and Aftab Alam Phys. Rev. B 104, 094402 (2021) IF: 3.836
3. Non-collinear antiferromagnetism to compensated ferrimagnetism in $\text{Ti}(\text{Fe}_{1-x}\text{Co}_x)_2$ ($x = 0, 0.5$ and 1) alloys: Experiment and Theory S. Shanmukharao Samatham, Akhilesh Kumar Patel, A. V. Lukoyanov, K. G. Suresh and R. Nirmala Physical Chemistry Chemical Physics 23, 5607 (2021) IF: 3.676
4. Unique structure induced magnetic and electrochemical activity in nanostructured transition metal tellurates $\text{Co}_{1-x}\text{Ni}_x\text{TeO}_4$ ($x = 0, 0.5$ and 1.0) Akhilesh Kumar Patel, Manas Ranjan Panda, Ekta Rani, Harishchandra Singh, S. Shanmukharao Samatham, Abharana Nagendra, Sambhu Nath Jha, Dibyendu Bhattacharyya, Krishnawarrier G. Suresh, and Sagar Mitra ACS Applied Energy Materials 3, 9436, (2020) IF: 6.024
5. Critical behavior, universality class and magneto-transport properties of Ni_2MnIn Akhilesh Kumar Patel, S. Shanmukharao Samatham and K. G. Suresh Mater. Res. Bull. 128, 110900 (2020) IF: 4.019
6. Disorder-induced critical exponents near a ferromagnetic quantum critical point in $\text{Mn}_{1-x}\text{Cr}_x\text{Si}$ Ashish Kumar Mishra, S. Shanmukharao Samatham, Martin R. Lees, and V. Ganesan Phys. Rev. B 101, 144436 (2020) IF: 3.836
7. Coexistence of spin semimetal and Weyl semimetal behavior in FeRhCrGe Y. Venkateswara, S. Shanmukharao Samatham, P. D. Babu, K. G. Suresh and Aftab Alam Phys. Rev. B 100, 180404(R) (2019) IF: 3.836
8. Magnetism of 3d and 4d metal doped $\text{Mn}_{0.7}\text{T}_{0.3}\text{NiGe}$ ($T = \text{Fe, Co, Ru}$ and Rh): magnetization and ab-initio calculations S. Shanmukharao Samatham, Akhilesh Kumar Patel, A. V. Lukoyanov, E. D. Baglasov and K. G. Suresh J. Phys.: Condens. Matter 31, 495804 (2019) IF: 2.711
9. Magnetism and electronic structure of $\text{Gd}_5\text{Ge}_2\text{Sb}$: Experiment and Theory S. Shanmukharao Samatham, Akhilesh Kumar Patel, Alexey V. Lukoyanov and K. G. Suresh J. Alloys Comp. 806, 575 (2019) IF: 4.175
10. Revelation of spin glass behaviour of Ru doped MnNiGe : Experiment and Theory S. Shanmukharao Samatham, Akhilesh Kumar Patel, A. V. Lukoyanov and K. G. Suresh J. Phys.: Condens. Matter 31, 125803 (2019) IF: 2.711
11. Effect of Ru substitution on structural, magnetic and transport behaviour of $\text{Ni}_{50}\text{Mn}_{38}\text{Sb}_{12}$ Akhilesh Kumar Patel, S. Shanmukharao Samatham, A. K. Yadav, S. N. Jha, D. Bhattacharyya and K. G. Suresh J. Alloys Comp. 783, 977 (2019) IF: 4.175

12. Magnetization, resistivity, specific heat and ab-initio calculations of Gd_5Sb_3 S. Shanmukharao Samatham, Akhilesh Kumar Patel, A. V. Lukoyanov and K. G. Suresh J. Phys.: Condens. Matter 30, 295802 (2018) IF: 2.711
13. Critical exponents and universal magnetic behavior of noncentrosymmetric $Fe_{0.6}Co_{0.4}Si$ S. Shanmukharao Samatham and K. G. Suresh J. Phys.: Condens. Matter 30, 215802 (2018) IF: 2.711
14. Quantum phase transition and non-Fermi liquid behaviour in $Fe_{1-x}Co_xSi$ ($x > 0.7$) S. Shanmukharao Samatham, K. G. Suresh and V. Ganesan J. Phys.: Condens. Matter 30, 145602 (2018) IF: 2.711
15. Competing magnetic and spin gap-less semiconducting behaviour in fully compensated ferrimagnet $CrVTiAl$: Theory and Experiment Y. Venkateswara, Sachin Gupta, S. Shanmukharao Samatham, Manoj Raama Varma, K. G. Suresh, Aftab Alam Phys. Rev. B 97, 054407 (2018) IF: 3.836
16. Spin fluctuations in Cr doped MnSi Ashish Mishra, Krishnan M, Durgesh Singh, S. Shanmukharao Samatham, M Gangrade, R. Venkatesh and V Ganesan J. Magn. Magn. Mater. 448, 130 (2018) IF: 3.046
17. Critical behavior, universal magnetocaloric and magnetoresistance scaling of MnSi S. Shanmukharao Samatham and V. Ganesan Phys. Rev. B 95, 115118 (2017) IF: 3.836
18. Quantum size effect on the heat capacity of nickel nanolattice J. Singh, Tarachand, S. S. Samatham, D. Venkateshwarlu, Netram Kaurav, V. Ganesan, and G. S. Okram Appl. Phys. Lett. 111, 201904 (2017) IF: 3.521
19. Spin flop quasi- first order phase transition and putative tricritical point in Gd_3Co S. Shanmukharao Samatham, Soumendu Barua and K. G. Suresh J. Magn. Magn. Mater. 444, 439 (2017) IF: 3.046
20. Anomalous magneto-transport properties of Bi doped $La_{0.67}Sr_{0.33}MnO_3$ S. Angappane, Nagaiah Kambhala, S. Shanmukharao Samatham, R. Venkatesh, V. Ganesan Phys. Status Solidi B 255, 1700194 (2017) IF: 1.674
21. Weak arrest-like and field driven first order magnetic phase transitions of itinerant Fe_3Ga_4 revealed by Magnetization and magnetoresistance isotherms S. Shanmukharao Samatham and K. G. Suresh J. Magn. Magn. Mater 422, 174 (2017) IF: 3.046
22. Low temperature transport anomaly in Cr substituted $(La_{0.67}Sr_{0.33})MnO_3$ manganites Tejas M. Tank, Vilas Shelke, Sarmistha Das, D. S. Rana, C. M. Thaker, S. S. Samatham, V. Ganesan and S.P. Sanyal J. Magn. Magn. Mater. 432, 581 (2017) IF: 3.046