# Curriculum Vitae

**Dr. Ganesh Shridhar Hegde**
**Ph.D., M.Sc.**
**Assistant Professor**
**PG Coordinator**
Dept of Physics
Post Graduate Centre
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ganesh.hegde@learner.manipal.edu

**Personal information**

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|---|---|
| Date of Birth | : 10-01-1995 |
| Nationality | : Indian |
| Gender | : Male |
| Marital status | : Single |
| Languages known | : English, Kannada (Mother tongue), Hindi, Marathi |
| Present address | : Post Rajajinagar, Banglore 560010 |
| Permanent address | : Post Gudeangadi, Kumta, hireoni cross, Uttara Kannada, 581351 |

**Academic profile**

**1) Ph. D.**
**Awarded on 15th Sept 2022**
Department of Physics
**MIT, MAHE, Manipal**
**Research Supervisor:** Dr. Ashwatha Narayana Prabhu
Assistant professor (Selection grade)
Dept Physics
MIT, MAHE, Manipal

**2)M.Sc. in Physics (Astrophysics)**
Dept of Physics
Fergusson college affiliated to Savitribai Pule Pune University
Completed in 2018 with CGPA:8.22

**3)B.Sc. (Physics, Chemistry, Maths)**
Dr. A. V. Baliga college of arts and science, Kumta
Completed in 2016 with 78% (Distiction)

**4) 10+2 (Physics, Chemistry, Maths, Biology)**
Dr.A. V. Baliga PU College of arts and science, Kumta
Completed in 2013 with 67.5%

**5) SSLC**
CVSK High school, Kumta
Completed in 2011 with 95.36%

**Research Experience:**
My work is focused on **comparative study of thermoelectric properties of single crystals and polycrystalline systems of Low temperature thermoelectric Bismuth metal chalcogenides.**

**Single Crystals**: I have synthesized **high quality single crystal samples of metal bismuth chalchogenides** using the **melt growth technique and** analysed their structural, morphological, and thermoelectric properties in the temperature range 10-350 K.

**Polycrystalline materials**: Polycrystalline samples of **metal bismuth chalchogenides** have been prepared **using solid-state reaction** and studied their structural, morphological, and thermoelectric properties in the temperature range 10-350 K.

**I have worked in Materials Synthesis Lab at UGC-DAE, Mumbai under Dr. P D Babu for PPMS thermoelectric characterizations, Mossbauer Lab at UGC-DAE, Indore under Dr. V R Raghavendra Reddy for HR-XRD Studies and at Materials Research Centre, IISc Bengaluru under Dr. Arun M Umarji for vacuum sealing of thermoelectric materials.**

Till now I have published **11 research articles as first author** and **I have attended and presented my research works in 3 International, 4 National and 1 state level conferences.**

**I have got 130 citations, 8 h Index and 6 i10 index till the year 2023**

## Education Details *(starting from the highest degree)*

| Qualification | Year of Passing | Board / University | Percentage/CGPA Scored |
|---|---|---|---|
| Ph.D. | 2022(Aug) | **Manipal Academy of Higher Education** | **Defended successfully** |
| M.Sc (Physics) | 2018 | **Fergusson college Pune University** | 8.2 CGPA |
| B.Sc (Physics, Chemistry, Maths) | 2016 | **Dr. A. Baliga college of arts and science** | 78 |

## Research Publications: *(Scopus, Web of Science, H-Index)*

**List of Publications in Journals**

| Sl. No. | Title of the Paper | Authors | Journal Name | Volume | Page No. | Year of Publication | Impact Factor |
|---|---|---|---|---|---|---|---|

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|---|---|---|---|---|---|---|---|
| **1** | Enhancement of thermoelectric performance of In doped $Bi_2Te_{2.7}Se_{0.3}$ compounds | **Hegde, Ganesh** Shridhar, A. N. Prabhu, Ashok Rao, and P. D. Babu | Physica B: Condensed Matter | **584** | **412087** | 2020 | **2.436** |
| **2** | Reduction in thermal conductivity and electrical resistivity of indium and tellurium co-doped bismuth selenide thermoelectric system | **Hegde, G. S.,** Prabhu, A. N., Huang, R. Y., & Kuo, Y. K. | Journal of Materials and Materials in Electronics | **31** | **19525** | 2020 | **2.47** |
| **3** | Potential thermoelectric materials of indium and tellurium co-doped bismuth selenide single crystals grown by melt growth technique | **Hegde, G. S**., Prabhu, A. N., Gao, Y. H., Kuo, Y. K., & Reddy, V. R | Journal of Alloys and Compounds | **866** | **158814** | 2021 | **5.316** |
| **4** | Enhancement in thermoelectric figure of merit of bismuth telluride system | **Hegde,Ganesh** Shridhar, A. N. Prabhu, Ashok Rao, and M. K. Chattopadhyay**.** | Materials Science and Semiconductor Processing | **127** | **105645** | 2021 | **3.97** |
| **5** | Improved electrical conductivity and power factor in Sn and Se co-doped melt- grown $Bi_2Te_3$ single crystal | **Hegde, Ganesh** Shridhar, A. N. Prabhu, and M. K. Chattopadhyay. | Journal of Materials Science and Materials in Electronics | **20** | **24871** | 2021 | **2.47** |
| **6** | Reduction in electrical resistivity of bismuth selenide single crystal via Sn and Te co-doping | **Hegde, Ganesh** Shridhar, A. N. Prabhu, R. Y. Huang, and Y. K. Kuo | Materials Chemistry and Physics | **278** | **125675** | 2022 | **4.094** |
| **7** | A Review on Doped/Composite Bismuth Chalcogenide Compounds for Thermoelectric Device Applications: Various Synthesis Techniques and Challenges | **Hegde, Ganesh Shridhar,** and A. N. Prabhu. | Journal of Electronic Materials | **51** | **2014** | 2022 | **1.98** |
| **8** | Structural and optical characterization of novel nitro substituted D-π-A-π-A type chalcone single crystal showing second-order and third-order nonlinear optical properties.. | Parol, V., Upadhyaya, V., **Hegde, G. S.,** Lokanath**,** N. K., & Prabhu, A. N. | Physica B: Condensed Matter | **580** | **4598** | 2019 | **2.9** |
| **9** | Thermoelectric properties of co-doped (Bi0. 98In0. 02) 2Te2. 7Se0. 3/reduced graphene oxide composites prepared by solid-state reaction | **Hegde, Ganesh Shridhar,** Vinay Parol, Ashok Rao, A. N. Prabhu, Joshua JB Levinsky, and Graeme R. Blake. | Materials research Bulletine | **145** | **111517** | 2022 | **4.64** |

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|---|---|---|---|---|---|---|---|
| **10** | Investigation of near room and high temperature thermoelectric properties of (Bi0.98In0.02)-2Se2.7Te0.3/Bi2Se3 composite system | **Ganesh Hegde ,** Ashok Rao, A. N. Prabhu, Gurukrishna K, Deepika S | Journal of Materials Science and Materials in Electronics | Accepted | Accepted | Accepted | Accepted |
| **11** | Thermoelectric composite of $(Bi_{0.98}In_{0.02})_2Te_{2.7}Se_{0.3}/Bi_2Se_3$ with enhanced thermopower and reduced electrical resistivity (*Post PhD research article)* | **Ganesh Shridhar Hegde[a], A. N.** Prabhu[b*], Suchitra Putran[b], Ashok Rao[c], Gurukrishna K[c], Deepika Shanubhogue U[c] | Journal of electronic materials | Accepted | Accepted | Accepted | Accepted |
| **12** | Influence of indium and selenium co-doping on structural and thermoelectric properties of $Bi_2Te_3$ alloys | **Ganesh Shridhar Hegdea,** A. N. Prabhub*, M. K. Chattopadhyayc | Journal of materials science: Materials in electronics | Accepted | Accepted | Accepted | Accepted |
| **13** | Enhancing the thermoelectric power factor by lowering the electrical resistivity of $Bi_2Se_3$/NaI composites prepared by solid-state reaction **(First corresponding paper with Master students)** | **Ganesh Shridhar Hegde** A. N. Prabhu, Ashok Rao, Deepika Shanubhogue U, Suchitra Putran | Journal of electronic materials | Accepted | Accepted | Accepted | Accepted |
| **14** | Thermoelectric analysis of $(Bi_{0.98}In_{0.02})_2Te_{2.7}Se_{0.3}$/ Polyaniline and $(Bi_{0.98}In_{0.02})_2Se_{2.7}Te_{0.3}$/Polyaniline composites | **Ganesh Shridhar Hegde** A. N. Prabhu, | materials science: Materials in electronics | Accepted | Accepted | Accepted | Accepted |

## Conferences/Seminars/Workshops/Faculty development programme

| Sl. No. | Name of the Event | National/ International | Date | Name of the Organizer | Credits Earned |
|---|---|---|---|---|---|
| **1** | **One week international webinar on materials characterization and analysis** | **International** | **25-31, 2020** | **Dept of Physics, Indore** | **Participation** |
| **2** | **Online workshop on Rietveld refinement** | **International** | **22-24,2020** | **UGC DAE INDORE, MUMBAI** | **Participation** |
| **3** | **9th national conference on condensed matter physics** | **National** | **16-17, Sept, 2021** | **MAHE, Manipal** | **Poster presentation** |
| **4** | **8th national conference on condensed matter physics** | **National** | **26, Sept, 2020** | **MAHE, Manipal** | **Poster presentation** |
| **5** | **8th national conference on condensed matter physics** | **National** | **16, 17 Sept 2020** | **MAHE, Manipal** | **Poster presentation** |
| **6** | **7th national conference on condensed matter physics** | **National** | **16, 17 Sept 2020** | **MAHE, Manipal** | **Oral presentation** |
| **7** | **Thermoelectric materials and application for energy harvesting and power generation** | **International** | **14th Dec 2021** | **School pf Mechanical Engineering Katra** | **Partcipation** |
| **8** | **Physics in Every day life** | **International** | **9-11, 2021** | **Medi caps Indore** | **Partcipation** |

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| **9** | **International Conference on advanced materials** | **International** | **1,2 July** | **Calicut University** | **Oral presentation** |
| **10** | **International conference on Advanced materials science and application** | **International** | **3-4 Sept 2020** | **M. S. Rammaya institute of technology** | **Best oral presentation award** |
| **11** | **State level kannada vijnana sammelana** | **State** | **16-17 Sept 2021** | **Mangalore University** | **Best research article** |
| **12** | **International winter school on frontiers in materials** | **international** | **6-10 Dec 2021** | **JNCASR** | **Poster presentation** |
| **13** | **Faculty development programme** | **National** | **20th June - 24th June** | **Christ academy, Banglore** | **participant** |
| **14** | **Innovative experiment for physics teachers** | **Regional** | **10-July 2022** | **Maharani laksmi ammani college Banglore** | **First prize** |
| **15** | **Resource person in Faculty development Programme** | **National** | **Oct 11th 2022** | **BMS Institute of science and management** | |
| **16** | **International conference on recent trends in materials science 2023** | **International** | **March 7th 2023** | **Kristu Jayanti College Banglore** | **Third prize** |

**Patents Filed/Approved**

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|---|---|---|---|---|---|
| 1 | ***Improvement of the thermoelectric figure of merit and electrical conductivity in bismuth telluride with tin and tellurium doped system*** | ***Indian*** | ***Patent No: 202341066866*** | ***Manipal Academy of Higher Education*** | ***Filed*** |

**Apart from these,** ***I have a grant of UGC DAE CSR CRS/2022-23/1251 (Project for 3 years) from central govt of rupees 1.5 lac.***

***Editorship has been given to me for the book series under IIP Volume 3 2023***

**I had been an NCC Cadet, cleared C Certificate exam which has taught me discipline, teamwork, critical thinking, and tackle challenges logically. These qualities have helped me in carrying out my research work in an organized manner. I have a teaching experience for 1 year UG and PG course of M.Sc. and B.Sc.**

**By all these, I believe I am an ideal candidate for the present position.**

**Reference**

**(Prof) Dr. Vasudeva Siruguri**
Former Centre Director,
UGC-DAE Consortium for Scientific Research Mumbai Centre
Mumbai, Maharastra
Contact No: 9969303262
Email id: siruguri@csr.res.in

**(Prof) Dr. Ashok Rao**
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**Dr. RAJEEV SHESHA JOSHI**
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**Dr. Ashwatha Narayana Prabhu**
Assistant Professor (Selection grade)
Crystal growth lab in charge
Department of Physics
Manipal Institute of Technology
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Email id: ashwatha.prabhu@manipal.edu

**Declaration:**
**I hereby declare that the details stated above are true and correct to the best of my knowledge.**