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**(a) Professional Preparation**

B.E., M.Tech, Ph.D.

B.E National Institute of Technology (NIT) Tiruchirappalli, INDIA	Metallurgical Engineering and Materials Science (first class with distinction)	1992-1996
M.Tech Indian Institute of Technology (IIT) Bombay, Maharashtra, INDIA	Metallurgical Engineering and Materials Science (First class)	1998-2000
PhD Indian Institute of Science (IISc), Bangalore, Karnataka, INDIA	Materials Engineering	2006-2012

**(b) Professional Experience**

BEML, KGF, Karnataka	1996-2000	Assistant Engineer
ARCI, Hyderabad, Telangana.	2000-2005	Scientist-B
ARCI, Hyderabad, Telangana.	2005-2009	Scientist-C
ARCI, Hyderabad, Telangana.	2000-2014	Scientist-D
ARCI, Chennai, Tamilnadu	2014-2019	Scientist-E
ARCI, Chennai, Tamilnadu	2019 – till date	Scientist-F

**(c) Projects**

Projects	Year		Cost	Delivered
Ultra-high toughness cobalt steel by powder metallurgy route.	2000-2004	GM USA	15,31,000	A new kind of ultra-high toughness steel was developed and evaluated for its properties and performance.
Nanostructured ferrous PM products	2005-2011	In-house	-	High-performance bulk nanostructured FeCu alloy developed. Nanostructured cemented carbide cutting tools Nanostructured high-speed steel by hot gas extrusion Large scale ZnO nanopowders by flame spray, induction plasma.

Bulk hard magnets for EV motor applications	2011-2013	In-house	-	Development of bulk SmFeN, NdFeB magnets.
Development of high-efficiency thermoelectric generator (TEG) using nanostructured PbSbTe and NaCoO <sub>2</sub> for power generation from automobile exhaust waste heat.	2013-2018	PI	50,26,000	Developed materials with the figure of merit ZT >1 and processing methods to manufacture devices from these alloys. Built a 200 W automotive exhaust TEG using Bi <sub>2</sub> Te <sub>3</sub> modules. 1 PhD thesis produced.
Fabrication of thermoelectric module using Bi <sub>1-x</sub> Sb <sub>x</sub> Se (n-type) and Bi <sub>0.5-x</sub> M <sub>x</sub> Sb <sub>1.5</sub> Te <sub>3</sub> (p-type)	2021-22 (Phase 1)	PI	3,50,000	TATA STEEL sponsored project Feasibility study to make TE modules.
Fabrication of thermoelectric module using Bi <sub>1-x</sub> Sb <sub>x</sub> Se (n-type) and Bi <sub>0.5-x</sub> M <sub>x</sub> Sb <sub>1.5</sub> Te <sub>3</sub> (p-type)	2022-23 (Phase 2)	PI	19,00,000	TATA STEEL Sponsored project Assembling TE modules and demonstrating their performance up to 150°C hot side temperature.
Performance of phase change material-based heat sink embedded with open cell metal foam through powder metallurgy route for thermal energy storage.	2023-2026	PI	18,30,000	SERB-TARE Scheme The objective is to develop a highly thermally conductive and high thermal energy storage composite for thermal energy storage and management.

**(d) Patent**

1. K.Hembram, D. Sivaprahasam, and T. N. Rao, "Improved Method for Producing ZnO nanorods", Indian Patent file no. 2759/DEL/2010.
2. D.Sivaprahasam, B.Jayachandren, B.Prashant, R.Gopalan, "A method of preparing the thermoelectric module for power generation from automotive exhaust and the thermoelectric module thereof" Indian Patent filed (File No 201911045857/2019).

**(e) Publications**Book Chapter

1. V.C.Sajeev, D.Sivaprahasam, A.Sivakumar, R.Sundaresan, 2002 "The Origin of High Green Strength in Warm Compaction" Proceedings of International Conference on Automotive PM Components, Edited by Prof.Dr.T.R.R.Mohan and Prof.Dr.P.Ramakrishnan. Oxford and IBH publications, pp 143-158.

2. D.Sivaprahasam., Automotive waste heat recovery by thermoelectric generator (TEG) – “Bringing Thermoelectricity into Reality” Edited by Patricia Aranguren, 2018. IntechOpenScience.

### **Conference Papers**

1. D.Sivaprahasam, G.Sivakumar, R.Vijay, R.Sundaresan, 2001 “Mechanical Alloyed Fe-SiC Powder for Detonation Spray Coating”, Proceedings of International Conference on Trends in Mechanical Alloying; Science, Technology and Applications, Edited by P.Soni and T.V.Rajan.2001, p 84-95.
2. VC Sajeev,D.Sivaprahasam, A.Sivakumar, R.Sundaresan, Origin of high green strength in warm compaction, PM2002, Conf. Proceedings.
3. R.Sundaresan, D.Sivaprahasam, Aspects of fabrication of nanocrystalline WC-Co by Spark plasma Sintering, Transaction of Indian Institute of Metals, Vol.58 (5) 2005.

### **Journal Paper**

4. D.Sivaprahasam, S.B.Chandrasekar, R.Sundaresan, 2007, “Microstructure and mechanical properties of nanocrystalline WC-12Co consolidated by spark plasma sintering” Int. J Ref. Met. & Hard Mater. 25, 144-152.
5. N V Rama Rao, P Saravanan, R Gopalan, M Manivel Raja, D V Sreedhara Rao, D Sivaprahasam, R Ranganathan and V Chandrasekaran, 2008 “Microstructure, magnetic and Mossbauer studies on spark-plasma sintered Sm-Co-Fe/Fe(Co) nanocomposite magnets”, J. Phys. D: Appl. Phys. 41,065001(7pp).
6. P.Saravanan, R.Gopalan, D.Sivaprahasam, V.Chandrasekaran, 2009, “Effect of sintering temperature on the structure and magnetic properties of SmCo<sub>5</sub>/Fe nanocomposite prepared by SPS” Intermetallics, 17, 517-522.
7. B.Sunil, D.Sivaprahasam, R.Subasri, 2010, " Microwave sintering of nanocrystalline WC-12Co: Challenges and Perspectives" Int. J Ref. Met. & Hard Mater. 28, 180-186.
8. Jatinkumar Rana, D.Sivaprahasam, K.Seetharamaraju, V.Subramaniya Sarma, 2009, "Microstructure and mechanical properties of nanocrystalline highstrength Al-Mg-Si (AA6061) alloy by high energy ball milling and spark plasma sintering". Mat. Sci. & Engg. A 527, 292-296.
9. D.Sivaprahasam, A.M.Sriramamurthy, M.Vijayakumar, G.Sundararajan, K.Chattopadhyay, 2010, “Synthesis of FeCu nanopowder by levitational gas condensation process” Met. & Mater. Trans. B, 41, 841-856.
10. P.Saravanan, K.S.Rao, D.Sivaprahasam, V.Chandrasekaran, “Consolidation of FePd nanoparticles by spark plasma sintering” Intermetallics, 18 (2010)2262-2265.

11. V.Udayabanu, K.R.Ravi, K.Murugan, D.Sivaprahasam, B.S.Murthy, 2011, "Development of Ni-Al<sub>2</sub>O<sub>3</sub> in-situ nanocomposite by reactive milling and spark plasma sintering" Metall. & Mater. Trans. A, 42, 2085-93.
12. K. Hembram, D. Sivaprahasam and T. N. Rao, 2011, Combustion Synthesis of Doped Nanocrystalline ZnO Powders for varistors Applications, J Euro. Ceram. Soc. 31, 1905-1913.
13. K. Hembram, D. Sivaprahasam Kristen and T. N. Rao, 2013, Synthesis of large scale Nanocrystalline ZnO nanorods flame spray pyrolysis, Journal of nanoparticles research, 15 (2), 1461.
14. P Saravanan, R.Gopalan, D.Sivaprahasam, V.Chandrasekaran, 2013, "Effect of sintering temperature on the structure and magnetic properties of SmCo<sub>5</sub>/Fe nanocomposite magnets prepared by spark plasma sintering", Intermetallics, 42, 198-204.
15. P. Saravanan, Jh Hsu, Jen Hwa, D.Sivaprahasam, SV. Kamat, "Structure and magnetic properties of gamma-Fe<sub>2</sub>O<sub>3</sub> nanostructured compacts processed by spark plasma sintering". J of Mag and Mag. Materials, 346, 175-177.
16. A.Srinivas, M. Manivel Raja, D.Sivaprahasam, "Ceramics based enhanced ferroelectricity and magnetoelectricity in 0.75BaTiO<sub>3</sub>-0.25BaFe<sub>12</sub>O<sub>19</sub> by spark plasma sintering", Processing and Application of Ceramics, 7 [1], (2013).
17. M.Battabyal, B.Priyadarshini, D.Sivaprahasam, R. Gopalan, "Effect of Cu<sub>2</sub>O nanoparticle dispersion on thermoelectric properties of n-type skutterudites", J of Phys. D: Appl.Phys. 48, (2015) 455309.
18. S.Harish, D.Sivaprahasam, M.Battabyal, R.Gopalan, "Phase stability and thermoelectric properties of Cu<sub>10.5</sub>Zn<sub>1.5</sub>Sb<sub>4</sub>S<sub>13</sub> tetrahedrites" J of Alloys and Compound" 667, (2016) 323-328.
19. B.Priyadarshni, M.Battabyal, D.Sivaprahasam, R.Gopalan, "On the formation of phases and their influence on the thermal stability and thermoelectric properties of nanostructured zinc antimonide", J of Phys. D: Appl.Phys. 50, (2017) 015602.
20. D.Asuthosh Kumar, D.Sivaprahasam, Ajay D Thakur, "Improvement of thermoelectric properties of lanthanum cobaltate by Sr and Me co-substitution. J of Alloys and Compounds, 735, (2018)1787-1791.
21. D.Asuthosh Kumar, Karuna Kumari, B.Jayachandren, D.Sivaprahasam, Ajay D Thakur, "Thermoelectric properties of (1-x) LaCoO<sub>3</sub> x La<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> composite, J of Alloys and Compound, 749, (2018) 1092-1097.
22. D.Asuthosh Kumar, Karuna Kumari, B.Jayachandren, D.Sivaprahasam, "Thermoelectric Properties of (1-x)LaCoO<sub>3</sub>.xLa<sub>0.95</sub>Sr<sub>0.05</sub>CoO<sub>3</sub> composite" Accepted in Materials Research Express, 6 (2018) 055502.
23. D.Sivaprahasam, A.M.Sriramamurthy, S.Bysakh, G.Sundararajan, K.Chattopadhyay, "Role of Cu on sintering of FeCu nanoparticles" Metallurgical and Materials Transactions A, 49 (2018) 1410-1424.

24. R.Mariappan, M.Arun Prasad, G.Dharmalingam, D.Sivaprahasam, "Microstructure and Mechanical properties of Hot-pressed 21-4N Oxide –Dispersion Strengthened Austenitic Stainless Steels" *Metallography, Microstruture and Analysis*. 7 (5) (2018) 578-586.
25. B.Jayachandren, Titas Dasgupta, R.Gopalan, D.Sivaprahasam, "Elevated temperature behavior of CuPb<sub>18</sub>SbTe<sub>20</sub>/n-Ag/Cu joints for thermoelectric devices" *J of Electronic Materials*, 48 (2), (2019) 1276-1285.
26. D.Sivaprahasam, Thermal conductivity of nanostructured Fe<sub>0.04</sub>CoSb<sub>3</sub> Skutterudite, *Materials Letter* 252 (2019) 231-234.
27. S.Harish, D.Sivaprahasam, R.Gopalan, G.Sundararajan, Design and development of new test rig for testing of automotive thermoelectric generator' *AIP Advances*, 9 (2019) 065004.
28. K. M. Saradesh, Indrajit Patil, D. Sivaprahasam, Bhalchandra Kakade, G. S. Vinodkumar, "Study on the electrochemical behaviour of 22k gold (Au-5.8wt.%Cu-2.5wt.%Ag) and Ti containing 22k gold (Au-5.8wt.%Cu-2.0wt.%Ag-0.5wt.%Ti)" *Gold Bulletin*, 52, (2019) 175-183.
29. D.Sivaprahasam, S.B.Chandrasekhar, K.Murugan, K.V.P. Prabhakar, "Microstructure and mechanical properties of M62 high speed steel powder consolidated by high temperature gas extrusion". *Materials Research Innovation*, 24 (2020) 52-57.
30. Vallabha Rao Rikka, Sumit Ranjan Sahu, Ashok Roy, Sambhu Nath Jana, Duraisamy Sivaprahasam, Raju Prakash, Raghavan Gopalan\*, Govindan Sundararajan, "Tailoring micro resistance spot welding parameters for joining nickel tab to inner aluminium casing in a cylindrical lithium ion cell and its influence on the electrochemical performance" *J of Manufacturing Processes*, 49 (2020) 463-471.
31. R Mariappan, Arun Prasad Murali, G Dharmalingam, D Siva Prakasham, "Influence on mechanical properties of hot pressed, solution treated and age hardened 21-4N ODS alloy developed through pre-alloyed powders", *International Journal of Materials Engineering Innovation*, 11 (2) (2020) 127-144.
32. B. Prasanth, B. Jayachandren, Neha Hebalkar, R. Gopalan, S.B. Chandrasekhar, D. Sivaprahasam, Improved thermal stability of thermoelectric Mg<sub>2</sub>Si<sub>0.4</sub>Sn<sub>0.6</sub>, *Materials Letters* 276 (2020) 128204.
33. Ashutosh Kumar, Karuna Kumari, D Sivaprahasam, Ajay D Thakur, Thermoelectric properties in spark plasma sintered La<sub>0.7</sub>Sr<sub>0.3</sub>Mn<sub>0.5</sub>Co<sub>0.5</sub>O<sub>3</sub>, *AIP Conference Proceedings Volume 2220 Issue 1*, Pages – 120001.
34. Ashutosh Kumar, D. Sivaprahasam, Ajay D. Thakur, Colossal Seebeck Coefficient in Aurivillius Phase-Perovskite Oxide Composite, *Journal of Alloys and Compounds* 853 (2021) 157001.
35. B. Jayachandran, B. Prasanth, R. Gopalan, T. Dasgupta, D. Sivaprahasam, thermally stable, low resistance Mg<sub>2</sub>Si<sub>0.4</sub>Sn<sub>0.6</sub>/Cu thermoelectric contacts using SS 304 interlayer by one step sintering., *Materials Research Bulletin* 136 (2021) 111147.

36. S.Harish, D.Sivaprahasam, B.Jayachandran, R.Gopalan, G.Sundararajan, Performance of bismuth telluride modules under thermal cycling in an automotive exhaust thermoelectric generator, *Energy Conversion and Management*, 232 (2021) 113900.
37. D.Sivaprahasam, T.Sujitha, U.Gowtham, B.Jayachandran, R.Gopalan, Microstructure and heat transfer characteristics of active brazed ceramic-metal joints, Accepted in *Ceram. International*, 47 (2021) 16133-161.
38. Aamey Anupam, Andrew S.M. Ang, K Guruvidyathri, Musharaf Abbas, D. Sivaprahasam, Paul Munroe, C.C. Berndt, B.S. Murty, Ravi Sankar Kottada, Evaluating the influence of microstructural attributes: Fraction, composition, size and spatial distribution of phases on the oxidation behaviour of high-entropy alloys, *Corrosion Science* 184 (2021) 109381.
39. Ashuthosh Kumar, D.Sivaprahasam, Ajay D Takur, Improved thermoelectric properties in  $(1-x)\text{LaCoO}_3/(x)\text{La}_{0.7}\text{Sr}_{0.3}\text{CoO}_3$  composite, *Materials Chemistry and Physics*. 269 (2021) 124750.
40. Shaleni Venkatesan<sup>1</sup>, E. Meher Abhinav<sup>2</sup>, S. Kavita<sup>3</sup>, N. Pavan Kumar<sup>4</sup>, M. Manivel Raja<sup>5</sup>, D. Sivaprahasam<sup>3</sup> and Suresh Perumal, Enhanced Refrigeration Capacity of Rare-Earth-Free Ni-Co-Mn-In-Si Heusler Alloys for Magnetic Refrigerants, *ECS Journal of Solid State Science and Technology*, Volume 10, Number 9, (2021) 091009.
41. E. Pavitra, G. Dharmalingham, D. Sivaprahasam, E. Murali, "Characterization and structural transformation of yttria dispersed austenitic steel through vacuum hot pressing." *Materials Science and Technology*, 7 (13) (2021) 1139-1151. **(IF 8.067)**
42. A. Kanchi, Koteswararao V Rajulapati, B Srinivasa Rao, D Sivaprahasam, R. C. Gundakaram, "Influence of Thermo-mechanical Processing on Microstructure and Mechanical Properties of MoNbTaW Refractory High-Entropy Alloy" *Journal of Materials Engineering and Performance*, (2022) 1-9. **(IF 1.819)**
43. D. Sahane, S. Singh, D Sivaprahasam, S S. Kumar, S. T. Aruna, A Karthigeyan, "Investigation on High Entropy Alloys as Interconnect Material for Intermediate Temperature Solid Oxide Fuel Cells," *Journal of Alloys and Compounds*, 935 (2022) 168000 **(IF 5.316)**
44. Babu Jayachandran, Titas Dasgupta, Duraisamy Sivaprahasam, Highly Stable Metal— $\text{Na}_{0.02}\text{Pb}_{0.98}\text{Te}$  Contacts for Medium Temperature Thermoelectric Devices, *ACS Applied Materials & Interfaces*, 15 (18) (2023) 22231-22240. **(IF 10.383)**.
45. Ashutosh Kumar, Preeti Bhumla, Duraisamy Sivaprahasam, Saswata Bhattacharya, Nita Dragoe, Effect of crystal field engineering and Fermi level optimization on thermoelectric properties of  $\text{Ge}_{1.01}\text{Te}$ : Experimental investigation and theoretical insight, *Physical Review Materials*, 7 (2023) 045402. **(IF 3.98)**.
46. M.Sundareswari, M.Manjula, D.Prabhu, D.Sivaprahasam, Mechanical Properties of  $\text{Ir}_3\text{V}_1\text{-xTi}_x$  Intermetallic System, *Materials Letter*, 358, (2024) 135867.

47. Structure, electronic and thermoelectric properties of novel cubic Ir<sub>3</sub>V<sub>1-x</sub>Ti<sub>x</sub> refractory materials, Computational Condensed Mater., (2024) e00892.

**(f) National, International Conference presentation**

1. D.Sivaprahasam, G.Sivakumar, R.Vijay, R.Sundaresan, "Mechanical Alloyed Fe-SiC Powder for Detonation Spray Coating", presented in International Conference on Trend in Mechanical Alloying; Science, Technology and Applications, Jaipur, 2001.
2. V.C.Sajeev, D.Sivaprahasam, A.Sivakumar, R.Sundaresan, "The origin of High Green Strength in Warm Compaction" presented in International Conference on PM Automotive Components, Delhi, 2002.
3. D.Sivaprahasam, T.V.L.Narashima Rao, R.Sundaresan, "Synthesis of beta-AlLi by Mechanical Alloying for Thermal Batteries Application" presented at PMAI conference Goa. Jan 30-31 2003
4. D.Sivaprahasam, S.Sudhakar Sharma, R.Sunderesan, "Effect of Powder Size Distribution on Pore Characteristics and Permeability in Loose Sintered Copper Powder", presented at PMAI Conference Goa. Jan 30-31 2003.
5. S.B.Chandrasekhar, D.Sivaprahasam, R.Sundaresan, "Synthesis and Consolidation of Nanocrystalline TiC-MO<sub>2</sub>C-Ni-Mo Composites through Reactive Mechanical Alloying", presented at 30 th annual meeting of PMAI Kolkata. Jan 21-22, 2004.
6. D.Sivaprahasam, S.B.Chandrasekhar, R.Sundaresan, "A Comparison of Structure and Properties of Ultrafine WC-12Co fabricated by Spark Plasma Sintered and Liquid Phase Sintered WC-12CO" presented at 31 st annual technical meeting of PMAI, Mumbai.Feb 3-6, 2005
7. D.Sivaprahasam, D.Chakravarthy, R.Sundaresan, "Consolidation of nano copper powder by spark plasma sintering and conventional pressureless sintering" presented at 33 rd annual technical meeting of PMAI, Noida, Feb 09-11, 2007
8. D.Sivaprahasam, B.R.Sunil, R.Subasri, T.N.Rao, "Influence of sintering method on microstructure and mechanical properties of nanocrystalline WC-12Co" poster presentation in ICONSAT 2008 conference, Chennai, INDIA, February 27-28, 2008.
9. D.Sivaprahasam, A.M.Sriramamurthy, M.Vijayakumar, G.Sundararajan, K.Chattopadhyay, "Synthesis of FeCu nanopowder by levitational gas condensation process" Euromet 2009, Glasgow, U.K. Sept. 07-10, 2009.
10. D.Sivaprahasam, A.M.Sriramamurthy, G.Sundararajan, K.Chattopadhyay, "Effect of surface segregation on sintering behavior of Fe-X (X-Cu and Co) nano alloys" ICONSAT, Hyderabad, Jan. 20-23, 2012.

11. D.Sivaprahasam, Jayachandren, Titas Dasguptha and R.Gopalan, "Effect of Ni based diffusion barrier layer between doped PbTe and Cu electrode on the interfacial stability and high temperature Thermoelectric properties" ICT 2017, USA
12. Delivered Invited talk on "Challenges in Thermoelectric Module Fabrication for Mid-Temperature Application" PSG Institute of Advanced Studies, Coimbatore, Dec-2018.
- 13 Delivered Invited Talk in SRM Institute of Engineering, "Thermoelectric generator for automotive application" Chennai, Sept. 2020.
- 14 Delivered invited talk in IITM, Kanchipuram, Chennai, January 2021.
- 15 Delivered Invited Talk at TATA STEEL Seminar on Energy Savings.
- 16 Delivered invited talk in "Perspective in Materials research" Platinum Jubilee Conference held at IISc, Bangalore, 2123 Dec 2022.
- 17 Delivered an Invited Talk on "Strategies to make device from particulate thermoelectric materials" in IWAN 2023, ACT, Anna University, Chennai on 04/03/2023.
- 18 Delivered an Invited Talk on "Thermoelectric device by powder metallurgy route", PMAI Conference, 2023, Mumbai.
19. Delivered an Invited Talk on "Fabrication and characterization of rigid thermoelectric modules composed of  $\text{Na}_x\text{Pb}_{1-x}\text{Te} - \text{Mg}_2\text{Si}_{1-x}\text{Sn}_x$ ,  $\text{Bi}_x\text{Sb}_{1-x}\text{Se}-(\text{Bi}_{1-x-y}\text{Sb}_y\text{M}_y)\text{Te}_3$  compounds" IG-WTEA, IISER, Thiruvananthapuram, held between 26-28, February-2024.

**(g) Academic Contribution**

(i) Ph.D – 2 completed

(ii) M.Tech /MSc – 13 Completed

1. Synthesis BSb nanoparticles for thermoelectric application. Ms. Priyadarshini, Madras University (2022). BSb is a thermoelectric material, by first principle calculation, estimated to have high conversion efficiency. It has never been synthesized in powder or bulk form. Through this work first time, the possibility of synthesizing BSb by laser melting was demonstrated.
2. Hybrid Photovoltaic and Thermoelectric System for Improved Power Generation from Solar Energy, Mr. R.E.Pandi, PSG College Of Technology, Anna University, 2020. Through this work, 3-5 % improvement in the efficiency of the PV+TE hybrid system was demonstrated.
3. Power generation from marine engine exhaust using TEG. Submitted by M.Senthil Kumaran Bose, Central University Karaikudi, Tamil Nadu, 2019.



4. Direct hot pressing of TE legs/ NiCrFe powder/ Ni electrode for making TE device. Submitted by Mr.Naveen Kumar, Central University, Karaikudi, Tamil Nadu, 2019.
5. An analytical study of heat exchanger in thermoelectric generator, Submitted by Mr. C.V. Dineshkumar, Gandhigram Rural Institute, Deemed University, Gandhigram - 624302, Tamilnadu, 2018.
6. Microstructure and heat transfer characteristics of Cu-bonded alumina substrate for the thermoelectric device. Submitted by Ms. Sujitha, Anna University, Chennai, 2016.
7. Study of thermoelectric properties of Mg<sub>2</sub>Sn added with TiO<sub>2</sub> nanoparticles, Submitted by Mr.N.Govardhan, Department of Chemical Engineering, JNTU, Anantapur 515001, 2016.
8. Development of diffusion barrier between thermoelectric legs and Ni/Cu interconnects. Submitted by Ms. Vini Narayankutty, Dept. of Ceramics Technology, Anna University, Chennai-600 025, 2015.
9. Numerical simulation study and thermal conductivity measurement in thermoelectric materials by hot disk method, Submitted by Ms. B. Lakshimpriya, Dept. of Ceramics Technology, Anna University, Chennai-600 025, 2015.
10. Development of high performance  $\beta$ -Zn<sub>4</sub>Sb<sub>3</sub> thermoelectric by doping and nanostructuring, Ms. B. Priyadarshini M.Sc. Physics, PSGR Krishnammal College for Women, Coimbatore, 2014.
11. Synthesis and consolidation of  $\beta$ - Zn<sub>4</sub>Sb<sub>3</sub> thermoelectric alloy, Ms. D. Shanmugapriya, PSGR.Krishnammal College for Women, Coimbatore. 2014.
12. Thermoelectric module efficiency measurement by xx method by Mr.Aravind, Department of Materials Science, University of Madras, Chennai, (Completion by May 2024).
13. Optimizing the contact layer thickness over Bi<sub>1-x</sub>Sb<sub>x</sub>Se and Bi<sub>0.5-x</sub>M<sub>x</sub>Sb<sub>1.5</sub>Te<sub>3</sub> pellets to fabricate defect free thermoelectric legs and devices by Ms. Tejhu Sree, Department of Materials Science, University of Madras, Chennai (completing by May 2024)

(iii) B.Tech – 15 completed

**(j) Awards**

1. 1<sup>st</sup> prize in Electron Microscopy Conference (EMSI-2011) held at HYDERABAD for best SEM investigation.

Affiliation to Professional Society

- a. Life member of Indian Institute of Metals, INDIA
- b. Life member of Powder Metallurgical Association of INDIA (PMAI)
- c. Life member of International Thermoelectric Society (ICT)

(k) Personal Details

Date of Birth - 23/01/1975  
Language Known - English, Tamil.