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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	1998-2000
PhD Indian Institute of Science (IISc), Bangalore, Karnataka, INDIA	Materials Engineering	2006-2012

(b) Professional Experience

BEML, KGF, Karnataka	1996-1998	Assistant Engineer
ARCI, Hyderabad, Telangana.	2000-till date	Scientist

(c) Projects

Projects	Year	Delivered
Ultra high toughness Maraging steel by powder metallurgy route. Sponsored by GM USA	2000-2004	A new kind of ultra-high toughness steel developed and evaluated for its properties and performance. Metal Injection Molding of SS powders.
Nanostructured ferrous PM products	2005-2011	High performance bulk nanostructured FeCu alloy developed. Nanostructured cemented carbide cutting tools Nanostructured high speed steel by hot gas extrusion

		Large scale nanopowders by flame spray, induction plasma.
Bulk hard magnets for EV motor applications	2011-2013	Development of bulk SmFeN, NdFeB magnets.
Thermoelectric materials, device and system for medium temperature waste heat conversion. Dispersion strengthened steel	2013-till date	Developed materials with figure of merit ZT >1 and processing methods to manufacture device from these alloys.

(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.Jayachandran, 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 (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.

Journal 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
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 SmCo5/Fe nanocomposite prepared by SPS” Intermetallics, 17, 517-522.
7. B.Sunil, D.Sivaprahsam, 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, "Microstruture 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_2O_3 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 SmCo5/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_2O_3 nanostrucutred compacts processed by spark plasma sintering”. J of Mag and Mag. Materials, 346, 175-177.
16. A.Srinivas, M. Manivel Raja, D.Sivaprahasam, 2013, “Ceramics based enhanced ferroelectricity and magnetoelectricity in $0.75BaTiO_3$-$0.25BaFe_{12}O_{19}$ by spark plasma sintering”, Processing and Application of Ceramics, 7 [1].
17. M.Battabyal, B.Priyadarshini, D.Sivaprahasam, R. Gopalan, 2015. “Effect of Cu_2O nanoparticle dispersion on thermoelectricproperties of n-type skutteudites”, J of Phys. D: Appl.Phys. 48, 455309. (2015)
18. S.Harish, D.Sivaprahasam, M.Battabyal, R.Gopalan, 2016, “Phase stability and thermoelectric properties of $Cu_{10.5}Zn_{1.5}Sb_4S_{13}$ tetrahedrites” J of Alloys and Compound” 667, (2016) Pp. 323-328. 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, 015602. (2017)
19. 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, 1787-1791 (2018)
20. D.Asuthosh Kumar, Karuna Kumari, B.Jayachandren, D.Sivaprahasam, Ajay D Thakur, “ Thermoelectric properties of (1-x) LaCoO3 x La0.7Sr0.3MnO3 composite, J of Alloys and Compound, 749, 1092-1097 (2018)
21. D.Asuthosh Kumar, Karuna Kumari, B.Jayachandren, D.Sivaprahasam,“Thermoelectric Properties of (1-x)LaCoO3.xLa0.95Sr0.05CoO3 composite" Accepted in Materials Research Express (2018).
22. D.Sivaprahasam, A.M.Sriramamurthy, S.Bysakh, G.Sundararajan, K.Chattopadhyay, “Role of Cu on sintering of FeCu nanoparticles” Metallurgical and Materials Transactions A, (2018)
23. 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.
24. B.Jayachandren, Titas Dasgupta, R.Gopalan, D.Sivaprahasam, “Elevated temperature behavior of $CuPb_{18}SbTe_{20}$/n-Ag/Cu joints for thermoelectric devices” J of Electronic Materials, 48 (2), 1276-1285 (2019)
25. D.Sivaprahasam, Thermal conductivity of nanostructured $Fe_{0.04}CoSb_3$ Skutterudite, Materials Letter 252 (2019) 231-234.
26. Harish Subramaniyam, D.Sivaprahasam, R.Gopalan, G.Sundararajan, Design and development of new test rig for testing of automotive thermoelectric generator’ AIP Advances 9 (2019) 065004.
27. 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.
28. 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

29. 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.
30. 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
31. B. Prasanth, B. Jayachandren, Neha Hebalkar, R. Gopalan, S.B. Chandrasekhar, D. Sivaprahasam, Improved thermal stability of thermoelectric Mg2Si0.4Sn0.6, Materials Letters 276 (2020) 128204.
32. Ashutosh Kumar, Karuna Kumari, D Sivaprahasam, Ajay D Thakur, Thermoelectric properties in spark plasma sintered $La_{0.7}Sr_{0.3}Mn_{0.5}Co_{0.5}O_3$, AIP Conference Proceedings Volume 2220 Issue 1, Pages – 120001.
33. Ashutosh Kumar, D. Sivaprahasam, Ajay D. Thakur, Colossal Seebeck Coefficient in Aurivillius Phase-Perovskite Oxide Composite, Journal of Alloys and Compounds 853 (2021) 157001
34. B. Jayachandran, B. Prasanth, R. Gopalan, T. Dasgupta, D. Sivaprahasam, thermally stable, low resistance Mg2Si0.4Sn0.6/Cu thermoelectric contacts using SS 304 interlayer by one step sintering., Materials Research Bulletin 136 (2021) 111147.
35. 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, (2021)

(f) 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-MO2C-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 plasam sintering and conventinal 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 mechnical 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, ICT 2017, USA

12. Delivered Invited talk on “Challenges in Thermelectric Module Fabrication for Mid-Temperature Application” PSG Institute of Advanced Studies, Coimbatore, Dec-2018.

13 Delivered Invited Talk in SRM Institute of Engineering, Chennai, Sept. 2020.

14 Delivered invited talk in IIITM, Kanchipuram, Chennai, January 2021.

(g) Academic Contribution

PhD – 2 (Ongoing)
MTech – 8 Completed
BTech – 15 completed

(h) Awards

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

Affiliation to Professional Society

1. Life member of Indian Institute of Metals, INDIA
2. Life member of Powder Metallurgical Association of INDIA (PMAI)
3. Life member of International Thermoelectric Society (ICT)