Dr. D. Sivaprahasam
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(a) Professional Preparation

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

B.E National Institute of Technology (NIT) Trichirappalli, INDIA	Metallurgical Engineering and Materials Science	1996
M.Tech Indian Institute of Technology (IIT) Bombay, Maharasta, INDIA	Metallurgical Engineering and Materials Science	2000
PhD IndianInstitute of Science (IISc), Bangalore, Karnataka,INDIA	Materials Engineering	2012

(b) Appointments

2013 -Present	**Scientist-E,** ARC International, IITM Research Park, Chennai, INDIA.
2009-2013	**Scientist-D,** ARC International, Balapur, Hyderabad,INDIA
2004-2009	**Scientist-C,** ARC International,Balapur, Hyderabad,INDIA
2000-2004	**Scientist-B,** ARC International, Hyderabad,INDIA
1996-2000	**Engineer,** Bharat Earth Movers Limited, Bangalore, INDIA.

(c) Products

Related to project

1. Large scale nano ZnO powder synthesis by flame spray pyrolysis and bulk nanostructure for thermoelectric and varister applications.
2. Thermoelectric modules using p and n type PbTe sytem usable up to 300°C.

Others of significance

1 Ultrafine WC/Co cutting tool for super alloy machining.
2 Powder metallurgy processed ultra high toughness maraging steel for automobile application (GM USA Sponsered project)

List of patents

1. K.Hembram, D. Sivaprahasam, and T. N. Rao, " Improved Method for Producing ZnO nanorods", Indian Patent file no. 2759/DEL/2010

Publications

Book Chapter

1. Automotive waste heat recovery by thermoelectric generator (TEG) – "Thermoelectrics" InTech-OpenScience.

Related to thermoelectric project

1. 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)
2. 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.
3. 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)

Others of significance

4. 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.
5. 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.
6. 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.
7. 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)
8. 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.
9. 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
10. 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
11. 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
12. P.Saravanan, K.S.Rao, D.Sivaprahasam, V.Chandrasekaran, "Consolidation of FePd nanoparticles by spark plasma sintering" Intermetallics, 18 (2010)2262-2265
13. 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
14. 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
15. 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.
16. 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.
17. 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.
18. 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].
19. 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)

CONFERENCE PRESENTATIONS

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

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