



P Suresh Babu

International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI)
Balapur (P.O), Hyderabad-500005, Telangana, INDIA
Phone: +91 40 24452412 **E-mail:** pitchuka@arci.res.in

Working as a Research Scientist at Centre for Engineered Coatings (CEC) in International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad founded by Department of Science and Technology, Government of India. Graduated from NIT- Warangal (REC W) in Metallurgical Engineering. Obtained M.Tech and Ph.D. from the Department of Materials and Metallurgical Engineering, IIT-Kanpur. Research areas are development of wear and corrosion resistant coatings by thermal spray techniques, microstructure-property-performance correlations of thermally sprayed coatings, technology development activities, evaluation of hardness and elastic modulus of bulk as well as coatings using nano-indentation technique at different length scales, creep behavior studies of ODS alloys.

Received Indo-US fellowship in the year 2012, worked at Florida International University (FIU), Miami, Florida, USA for one year on Al amorphous/nano-crystalline alloy coatings. Authored books chapters and research articles published in various renowned peer reviewed books/journals in material science stream. Presented research results at several technical workshops/conferences. Life member of several professional societies, recognized reviewer to various international journals. Supervised a number of B.Tech and M.Tech theses.

BOOK CHAPTERS:

1. **P Suresh Babu**, D. Srinivasa Rao, L. Rama Krishna, Arvind Agarwal, G. Sundararajan, *Thermal Spray Coatings for Protecting Al alloys*, In book: Encyclopedia of Aluminum and Its Alloys, Publisher: Taylor & Francis, Editors: George E. Totten, Olaf Kessler, Murat Tiryakioglu, ISBN-9781466510807, November 16, 2018.
2. L. Rama Krishna, **P Suresh Babu**, Manish Tak, D. Srinivasa Rao, G. Padmanabham and G. Sundararajan, *Processing of Ceramic and Cermet Coatings for Aerospace and Strategic Applications, in Handbook of Advanced Ceramics and Composites Applications*, Ed: Yashwant R Mahajan and Roy Johnson, Springer Nature, 2020.

PUBLICATIONS:

- Harish Kumar Adigilli, Kolan Madhav Reddy, Yixuan Hu, Rajamallu Karre, P.V.V. Srinivas, K. Guruvidyathri, Anirudha Karati, V.S. Hariharan, **P Suresh Babu**, A.K. Pandey, Joydip Joardar “The First report on formation of Al-W-Cu grain boundary phase and its influence on mechanical behavior of 2D-WS₂ reinforced Al-4Cu alloy matrix composites” *J Alloys & Comp.*, 883 (2021) 160792

- S.Kumar, Bolla Reddy Bodapati, Gidla Vinay, K Vamshi Kumar, Naveen Manhar Chavan, **P Suresh Babu**, A. Jyothirmayi, Estimation of inter-splat bonding and its effect on functional properties of cold sprayed coatings, *Surf. Coat. Technol.*, 420 (2021) 127318
- D. Vijaya Lakshmi, **P. Suresh Babu**, L. Rama Krishna, R. Vijay, D. Srinivasa Rao, G. Padmanabham, “Corrosion and erosion behavior of iron aluminide (FeAl(Cr)) coating deposited by detonation spray technique”, *Adv. Powder Technol.*, 32 (2021) 2192-2201.
- Sravan Kumar Thimmappa, Brahma Raju Golla, **P Suresh Babu**, Bhanu Prasad VV, “Nanoindentation and high temperature oxidation behavior of ZrB₂-20SiC-(0-10 wt.%)Ta UHTCs”, *Ceram. Int.*, 47 (2021) 22184-22190.
- **P Suresh Babu**, Y. Madhavi, L. Rama Krishna, G. Sivakumar, D. Srinivasa Rao, G. Padmanabham, Thermal Spray Coatings for Erosion-Corrosion Resistant Applications, *Trans.IIM*, 73 (2020) 2141-2159.
- A. Sai Jagadeeswar, S. Kumar, B.Venkataraman, **P Suresh Babu**, A. Jyothirmayi, “Effect of thermal energy on the deposition behaviour, wear and corrosion resistance of cold sprayed Ni-WC cermet coatings”, *Surf. Coat. Technol.* 399 (2020) 126138.
- Rajesh Jarugula, **P Suresh Babu**, S. Ganesh Sundara Raman, G. Sundararajan, “Creep deformation behavior of nano oxide dispersion strengthened Fe-18Cr ferritic steel”, *Materialia*, 12 (2020) 100788.
- Mohammad Ali Shaik, Brahma Raju Golla, **P Suresh Babu**, Processing and characterization of extremely hard and strong Cu-(0-15wt pct)Al alloys, *Met. Mater. Trans. A*, 51 (2020) 708-724.
- **P Suresh Babu**, L. Venkatesh, D. Srinivasa Rao, N. Ravi, Fracture behaviour of nc-TiAlN/a-Si₃N₄ nanocomposite coatings under cyclic nano impact testing. *Surf. Eng.*, 36 (2020) 671-679.
- L Rama Krishna, Y Madhavi, **P Suresh Babu**, D Srinivasa Rao, G Padmanabham, Strategies for corrosion protection of non-ferrous metals and alloys through surface engineering, *Materials Today: Proceedings* 15, 145-154 (2019) (18-19)
- P Uday Chandra Rao, **P Suresh Babu**, D Srinivasa Rao, S.V. Gopala Krishna, K. Venkateswara Rao, Effect of Tribo-layer on the Sliding Wear Behavior of Detonation Sprayed Alumina-Titania Coatings. In: Reddy A., Marla D., Simic M., Favorskaya M., Satapathy S. (eds) *Intelligent Manufacturing and Energy Sustainability. Smart Innovation, Systems and Technologies*, Vol 169. (2020) 289-298, Springer, Singapore
- **P Suresh Babu**, Y. Madhavi, L. Rama Krishna, D. Srinivasa Rao, G. Padmanabham, “Thermally-sprayed WC-based cermet coatings for corrosion resistance applications”, *JOM*, 70 (2018) 2636-2649.
- **P Suresh Babu**, P. Chanikya Rao, A. Jyothirmayi, P. Sudharshan Phani, L. Rama Krishna, D. Srinivasa Rao, “Evaluation of microstructure, property and performance

of detonation sprayed WC-(W,Cr)₂C-Ni coatings”, Surf. Coat. Technol. 335 (2018) 345-354.

- **P Suresh Babu**, D. Sen, A. Jyothirmayi, L. Rama Krishana, D. Srinivasa Rao, ‘Influence of microstructure on the wear and corrosion behavior of detonation sprayed Cr₂O₃-Al₂O₃ and plasma sprayed Cr₂O₃ coatings”, Ceram. Int. 44 (2018) 2351-2357.
- L. Venkatesh, **P Suresh Babu**, G. Siva Kumar, Ravi C. Gundakaram, S.V. Joshi, I. Samajdar, “Microstructural response of various chromium carbide based coatings to erosion and nano impact testing”, Wear, 386-387 (2017) 72-79
- **P Suresh Babu**, D Srinivasa Rao L Rama Krishna, G. Sundararajan, Weibull analysis of hardness distribution in detonation sprayed nano-structured WC-12Co coatings, Surface and Coatings Technology, 319 (2017) 394-402.
- L. Venkatesh, **P Suresh Babu**, Ravi C. Gundakaram, Roger D. Doherty, S.V. Joshi, I. Samajdar, Morphology Dependent Hardness of Cr₇C₃-Ni rich alloy Composite versus Orientation Independent Hardness of Cr₇C₃ Primary Phase in a Laser Clad Microstructure, Metall. Mater. Transc. A, 48 (2017) 1534-1539.
- **P Suresh Babu**, Rajesh Jha, Michael Guzman, G Sundararajan, Arvind Agarwal, Indentation creep behavior of cold sprayed Aluminum amorphous/nano-crystalline coatings, Mater. Sci & Eng. A 658 (2016) 415-421.
- S.B. Chandrasekhar, N.P. Wasekar, M. Ramakrishna, **P Suresh Babu**, TN Rao, B.P. Kashyap, Dynamic strain ageing in fine grained Cu-1wt%Al₂O₃ composite processed by two step ball milling and spark plasma sintering, J Alloys & Compds, 656 (2016) 423-430.
- Pandu Ramavath, Papiya Biswas, **P Suresh Babu**, P Laxminarayana, Roy Johnson, Compaction Curves: A tool for qualitative evaluation of quasi-static compaction behavior of ceramic powders”, *J Australian Cerm. Society*, 51(2015) 130-136
- **P Suresh Babu**, Benjamin Boesl, Cheng Zhang, Debrupa Lahiri, Andy Nieto, G Sundararajan, Arvind Agarwal, Dry sliding wear behavior of cold sprayed aluminum amorphous/ nanocrystalline alloy coatings, Sur. Coat. Technol. 238 (2014) 118-125
- S B Chandrashekar, S Sudhakar Sharma, M Ramakrishna, **P Suresh Babu**, Tata Narasinga Rao, B P Kashyap, Microstructure and properties of hot extruded Cu-1wt%Al₂O₃ nano-composites synthesized by various techniques, Mater. Sci. Eng. A, 591 (2014) 46-53
- **P Suresh Babu**, Debrupa Lahiri, G. Sundararajan, Arvind Agarwal, Scratch Induced Deformation Behavior of Cold Sprayed Aluminum Amorphous/Nanocrystalline Coatings at Multiple Load Scales, J. Therm. Spray. Technol., 23 (2014) 502-513.
- Pandu Ramavath, Ramanathan Papitha, M. Ramesh, **P Suresh Babu**, Roy Johnson Effect of primary particle size on spray formation, morphology and internal structure

of alumina granules and elucidation of flowability and compaction behaviors *J Processing and Applications Ceramics* 8 (2014) 93-99

- **P Suresh Babu**, Bikramjit Basu, G Sundararajan, “A comparison of mechanical and tribological behavior of nano-structured and conventional WC-12Co detonation sprayed coatings”, *J. Therm. Spray. Technol.*, 22 (2013) 478-490.
- **P Suresh Babu**, Bikramjit Basu, G. Sundararajan, “The Influence of Erodent Hardness on the Erosion Behaviour of Detonation Sprayed WC-12Co Coatings”, *Wear*, 270 (2011) 903-913.
- **P Suresh Babu**, Bikramjit Basu, G. Sundararajan, “Abrasive wear behavior of detonation sprayed WC-12Co coatings: Influence of decarburization and abrasive characteristics”, *Wear*, 268 (2010) 1387-1399.
- Nitin P Wasekar , N Ravi , **P Suresh Babu** , L Rama Krishna , G Sundararajan “High Cycle Fatigue Behavior of Micro Arc Oxidation Coatings Deposited on a 6061-T6 Al alloy”, *Metallurgical and Materials Transactions A*, 41 (2010) 255-265.
- G. Sundararajan, **P Suresh Babu**, “Detonation sprayed WC-Co coatings: Unique aspects of their structure and mechanical behavior”, *Trans. IIM*, 62 (2009) 95-103.
- **P Suresh Babu**, Bikramjit Basu, G. Sundararajan, “Processing–structure–property correlation and decarburization phenomenon in detonation sprayed WC–12Co coatings”, *ACTA Materialia*, 56 (2008) 5012-5026.
- **P Suresh Babu**, D.S. Rao, G.V.N. Rao, G. Sundararajan, “Effect of Feedstock Size and its Distribution on the Properties of Detonation Sprayed Coatings”, *J. Thermal. Spray Technol.*, Vol. 16 (2007) 281-290.
- **P Suresh Babu**, S.P. Gupta, “Kinetics of discontinuous precipitation of liquid phase in a Cu-7.4 At.% Sn alloy, *Canadian Metallurgical Quarterly*, 42 (2003) 471-482.
- S.P. Gupta, S.K. Goutam, **P Suresh Babu**, “Discontinuous precipitation of liquid in Cu-base alloys-nucleation and growth mechanisms” *Zeitschrift fur Metallkunde*, 94 (2003) 442-448.