

Curriculum Vitae

Name **Satyam Suwas**

Designation Professor and Chair

Date of Birth 30th September, 1969

Institution Department of Materials Engineering
Indian Institute of Science, Bangalore-560 012
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Education

- 1999, Ph. D., Indian Institute of Technology (IIT), Kanpur, India.
- 1994, M. Tech., Indian Institute of Technology (IIT), Kanpur, India.
- 1991, M. Sc., Banaras Hindu University (BHU), Varanasi, India.

Current research interests

- Processing - texture relationship
- Light alloys (Titanium, magnesium, aluminium alloys, lighter steels)
- Deformation and thermo-mechanical processing
- Microstructure-mechanical property correlation
- Nano-structured materials
- High temperature structural materials

Professional experience

- 2020 onwards: Chair, Department of Materials Engineering, Indian Institute of Science, Bangalore, India.
- April-October 2018: Guest Professor as Frederich Wilhem Bessel Research Awardee from Humboldt foundation, Germany at Institut für Strukturphysik, Technische Universität, Dresden, Germany.
- September 2015: Professor, Department of Materials Engineering, Indian Institute of Science, Bangalore, India.
- Associate Faculty, Interdisciplinary Centre for Energy Research.
- Associate Faculty, Centre for Product Design and Manufacturing.
- May-July 2015: Humboldt Re-visiting fellow, at Institut für Strukturphysik, Technische Universität, Dresden, Germany.
- July 2014 (1 month): Invited Professor, University of Lorraine, France.

- May-July 2013: Invited Professor, University of Lorraine, France.
- April-June 2011: Humboldt Re-visiting fellow, at Institut für Metallkunde und Metallphysik, RWTH, Aachen, Germany.
- September 2010-September 2015: Associate Professor, Department of Materials Engineering, Indian Institute of Science, Bangalore, India.
- June -August 2008: IUSSTF fellow, Carnegie Mellon University, Pittsburgh, USA.
- May 2008 (1 month): Maître de conférences ‘invité’ (*Invited Assistant Professor*) at Université Paul Verlaine de Metz, France.
- April - June 2007: Maître de conférences ‘invité’ (*Invited Assistant Professor*) at Université Paul Verlaine de Metz, France.
- May - July 2006: Maître de conférences ‘invité’ (*Invited Assistant Professor*) at Université Paul Verlaine de Metz, France.
- June 2005 - August 2010: Assistant Professor, Department of Metallurgy (now Materials Engineering), Indian Institute of Science, Bangalore, India
- April 2004 – May 2005: Alexander von Humboldt fellow, at Institut für Metallkunde und Metallphysik, RWTH, Aachen, Germany.
- September 2003–March 2004: Maître de conférences ‘invité’ (*Invited Assistant Professor*) at Université de Metz, France.
- September 2002–September 2003: Post-doctoral fellow, Ministry of Research, France at Laboratoire de Physique et Mécanique des Matériaux, Université de Metz, France.
- June 1999–September 2002: Scientist at Defence Metallurgical Research Laboratory, Hyderabad, India.

Honours

- IIM GD Birla Gold Medal(2020).
- Elected Fellow (2017), National Academy of Sciences, India.
- Frederick Wilhelm Bessel Research Award (2017) from Alexander von Humboldt foundation, Germany.
- ASM-IIM Visiting Lecturer Award (2017) from American Institute of Metals & Indian Institute of Metals.
- JSPS-DST Visiting Lecturership (2015) from Japanese Society for Promotion of Sciences & Department of Science and Technology, Govt of India.
- Eminent Engineering personality for the year (2014), from Institution of Engineers, India.
- Metallurgist of the year (2012) from Ministry of Steel, Govt. of India.

- IUSSTF fellow (2008) from Indo-US Science and Technology Forum.
- Humboldt Fellow (2004-2005) from Alexander von Humboldt foundation, Germany.
- Young Engineer of the Year (2003) from Indian National Academy of Engineering (INAE).
- President Dr. Shanker Dayal Sharma Medal (1999) for from IIT Kanpur, India.

Professional activities

- Elected Member, International Committee for Texture of Materials (ICOTOM)
- Elected Member, International Committee for Strength of Materials (ICSMA)
- Member, International Committee, THERMEC
- Life Member, Indian Institute of Metals (*currently* Chairman, Indian Institute of Metals, Bangalore Chapter)
- Life Member, Materials Research Society of India
- Life Member, Electron Microscopy Society of India
- Life Member, Magnetism Society of India
- Life Member, Texture Society of India
- Member, The Minerals, Metals and Materials Society, USA
- Member, American Society of Metals, USA

Other professional services

- ***Member, Editorial Board, Materials Science and Engineering A***, Elsevier
- ***Member, Editorial Board, Materials and Design***, Elsevier
- ***Member, Editorial Board, Materials Characterization***, Elsevier
- ***Member, Editorial Board, Scientific Reports***, A Nature Publication
- ***Key Reader*** for *Metallurgical and Materials Transactions A* (2005-2017)
- Reviewer for *Acta Materialia, Scripta Materialia, Materials Science and Engineering A, Journal of Alloys and Compounds, Intermetallics, Scientific Reports, Materials and Design, Journal of Materials Science, Modelling and Simulations in Materials Science and Engineering, Journal of Materials Engineering and Performance, Journal of Engineering Materials and Technology, Materials Characterization, Philosophical Magazine, Philosophical Magazine Letters, Materials Letters, Materials Science and Technology, Texture Stress and Microstructure, Bulletin of Materials Science, Current Science, Transactions of the Indian Institute of Metals.*

Academic duties

Teaching

- Teach the following *post-graduate and undergraduate courses* at Indian Institute of Science
 - Science of Materials Processing (PG)
 - Texture and Grain Boundary Engineering (PG)
 - Introduction to Materials Manufacturing (UG)
- Developed a web- based course “Introduction to Crystallographic Texture and Related Phenomenon” for National Program on Technology Enhanced Learning (NPTEL) – by Govt. of India. (<http://nptel.ac.in/courses/113108054/>)

Research

- ***Supervision of research students***
 - Graduated
 - 23 Doctoral students (14 single + 9 joint supervision)
 - 2 M.Sc. (Engineering)/ M. Tech. (Research) student (joint supervision)
 - 35 M.E./M.Tech. students
 - Thesis Ongoing
 - 17 Doctoral students (5 single and 12 joint supervision)
 - 4 M.Tech. students (2single and 2 joint supervision)
- ***Publications***

Books authored / edited

- **Crystallographic Texture of Materials,**
Authors: *Satyam Suwas and R.K. Ray, 2014, Springer, UK, ISBN: 978-1-4471-6313-8.*
- **Microstructure and Texture in Steels & Other Materials,**
A. Haldar, Satyam Suwas, D. Bhattacharjee, (Eds.), 2009, Springer, UK.,ISBN: 978-1-84882-453-9.
- **Textures of Materials-ICOTOM 16,** Vols. 702–703,
A. Tewari, Satyam Suwas, D. Srivastava, I. Samajdar, A. Haldar, (Eds.), 2012, Trans Tech, Switzerland.

Book Chapter

- **Satyam Suwas, N.P. Gurao,** “Development of Microstructures and Textures by Cross Rolling”. In ***Comprehensive Materials Processing***; Button, S.T., Ed.; Elsevier Ltd., 2014; Vol. 3, pp. 81–106. ISBN: 9780080965321

Publications in Refereed Journals and Conference Proceeding:

A. In Journals

1. D Baruah, KV Vaishakh, SA Sreedhar, SK Gupta, **S Suwas**, R Narasimhan, (2023), Notch sensitivity of combined mode I–II fracture behaviour of a rolled magnesium alloy, *Philosophical Magazine Letters* 103 (1), 2173989.
2. TR Dandekar, A Kumar, RK Khatirkar, D Kumar, **S Suwas**, (2023), Effect of microstructure and texture on the evolution of mechanical properties in a cold rolled and annealed UNS S32101 lean duplex stainless steel sheet, *Materials Chemistry and Physics* 299, 127485.
3. HS Maurya, RJ Vikram, K Kosiba, K Juhani, F Sergejev, **S Suwas**, KG Prashanth, (2023), Additive manufacturing of CMCs with bimodal microstructure, *Journal of Alloys and Compounds* 938, 168416.
4. RJ Vikram, SA Gokulnath, KG Prashanth, **S Suwas**, (2023), Effect of scanning strategy on microstructure and texture evolution in a selective laser melted Al-33Cu eutectic alloy, *Journal of Alloys and Compounds* 936, 168098.
5. AG Illarionov, SI Stepanov, IA Naschetnikova, AA Popov, P Soundappan, KH Thulasi Raman, **S Suwas**, (2023), A Review—Additive Manufacturing of Intermetallic Alloys Based on Orthorhombic Titanium Aluminide Ti₂AlNb, *Materials* 16 (3), 991.
6. KU Yazar, A Bhattacharjee, **S Suwas**, (2023), Effect of Thermomechanical Processing on the Dwell Fatigue Behaviour of Near Alpha Titanium Alloy IMI 834, *JOM* 75 (1), 218-231.
7. S Sankaran, R Madhavan, **S Suwas**, RK Ray, KA Padmanabhan, (2022), Microstructural evolution and stability during strain-controlled fatigue in a multiphase microalloyed steel, *Materials Science and Engineering: A* 861, 144382.
8. S Dixit, D Kumar, BB Dash, **S Suwas**, A Bhattacharjee, S Sankaran, (2022), Effect of solutionizing temperature and cooling rate on phase morphology, recrystallization and texture evolution in a heat treated Ti-6Al-4V alloy having different types of microstructure, *Journal of Alloys and Compounds* 927, 166897.
9. S Roy, A Sharma, A Chaudhuri, Y Huang, TG Langdon, **S Suwas**, (2022), Microstructure evolution and mechanical response of a boron-modified Ti–6Al–4V alloy during high-pressure torsion processing, *Materials Science and Engineering: A* 860, 144124.
10. SA Sreedhar, D Baruah, G Shankar, **S Suwas**, R Narasimhan, (2022), Temperature dependence of mode I fracture behaviour of a textured magnesium alloy, *International Journal of Fracture* 238 (2), 89-114.
11. D Panda, R Kushwaha, RK Sabat, **S Suwas**, SK Sahoo, (2022), Microstructure and texture evolution during grain growth of AM30 magnesium alloy, *Philosophical Magazine* 102 (21), 2207-2233.

12. R Soni, S Jhavar, S Tyeb, SK Gupta, **S Suwas**, K Chatterjee, (2022), Wire Arc Additive Manufacturing of Zinc as a Degradable Metallic Biomaterial, *Journal of Functional Biomaterials* 13 (4), 212.
13. R Kalsar, S Sanamar, N Schell, HG Brokmeier, R Saha, P Ghosh, **S Suwas**, (2022), In-situ study of tensile deformation behaviour of medium Mn TWIP/TRIP steel using synchrotron radiation, *Materials Science and Engineering: A* 857, 144013.
14. D Panda, S Tripathy, RK Sabat, **S Suwas**, SK Sahoo, (2022), An Investigation on the Correlation Between Microstructure, Texture, and Mechanical Properties of Mg and its Alloys, *Journal of Materials Engineering and Performance* 31 (11), 9183-9199.
15. A Arya, **S Suwas**, AH Chokshi, (2022), Strengthening in tension and weakening in torsion in drawn nickel microwires, *Materials Science and Engineering: A* 856, 143955.
16. G Bojjawar, **S Suwas**, AH Chokshi, (2022), Influence of Co content on the simultaneous enhancement of strength and ductility in severely drawn textured Ni-Co microwires, *Philosophical Magazine Letters* 102 (10), 335-347.
17. RJ Vikram, SK Verma, K Dash, D Fabijanic, BS Murty, **S Suwas**, (2022), Mechanism Controlling Elevated Temperature Deformation in Additively Manufactured Eutectic High-Entropy Alloy, *Metallurgical and Materials Transactions A* 53 (10), 3681-3695.
18. A Roy, SK Gupta, **S Suwas**, K Chatterjee, (2022), The Significance of Crystallographic Texture in Dry Etching of Titanium to Engineer Bioinspired Nanostructured Bactericidal Surfaces, *JOM* 74 (9), 3367-3378.
19. S Pramanik, **S Suwas**, (2022), Microstructure and Crystallographic Texture Evolution during Isothermal Annealing of Cold-Rolled Fe-6.8 Al Low-Density Steel, *Journal of Materials Engineering and Performance* 31 (9), 7449-7460.
20. G Shankar, VK Singh, A Chepuri, B Vengatesan, **S Suwas**, (2022), Influence of Pre-strain on the Cementite Spheroidization of 22MnB5 Steel and Its Effect on Mechanical Properties, *Journal of Materials Engineering and Performance* 31 (9), 7484-7500.
21. D Panda, RK Sabat, **S Suwas**, SK Sahoo, (2022), Role of temperature and precipitates on the evolution of microstructure and texture during grain growth of Mg-3Al-0.2 Ce alloy, *Philosophical Magazine* 102 (12), 1091-1120.
22. VK Manivasagam, M Sankar, CB Garcia, J Vishnu, K Chatterjee, **S Suwas**, G Manivasagam, TJ Webster, (2022), Surface-modified WE43 magnesium alloys for reduced degradation and superior biocompatibility, *In vitro models* 1 (3), 273-288.
23. B Aashranth, G Shankar, D Samantaray, **S Suwas**, (2022), The role of hot deformation texture on dynamic transformation of austenite to ferrite in a 9% Cr alloy steel, *JOM* 74 (6), 2377-2385.

24. S Acharya, V Gopal, SK Gupta, S Nilawar, G Manivasagam, **S Suwas**, K Chatterjee, (2022), Srijan Acharya-Vasanth Gopal-Saurabh Kumar Gupta, *ACS APPLIED MATERIALS & INTERFACES*.
25. S Acharya, V Gopal, SK Gupta, S Nilawar, G Manivasagam, **S Suwas**, K Chatterjee, (2022), Anisotropy of Additively Manufactured Co–28Cr–6Mo Influences Mechanical Properties and Biomedical Performance, *ACS Applied Materials & Interfaces* 14 (19), 21906-21915.
26. B Bishoyi, R Vinjamuri, RK Sabat, SK Patro, **S Suwas**, SK Sahoo, (2022), Cold Drawing of Commercially Pure Titanium and Its Effect on Microstructure and Texture Evolution, *Metallurgical and Materials Transactions A* 53 (5), 1845-1858.
27. TR Dandekar, RK Khatirkar, A Kumar, N Bibhanshu, **S Suwas**, (2022), Unidirectional cold rolling of Fe-21Cr-5Mn-1.5 Ni alloy–Microstructure, texture and magnetic properties, *Journal of Magnetism and Magnetic Materials* 549, 169040.
28. KU Yazar, S Mishra, L Kumar, S Bahl, TK Kumar, **S Suwas**, (2022), Texture induced planar anisotropy of dwell fatigue response in titanium: Insights from experiments and crystal plasticity simulations, *International Journal of Plasticity* 152, 103140.
29. K Edalati, A Bachmaier, VA Beloshenko, Y Beygelzimer, VD Blank, W J Botta, K Bryła, J Čížek, S Divinski, N A Enikeev, Y Estrin, G Faraji, R B Figueiredo, M Fuji, T Furuta, T Grosdidier, J Gubicza, A Hohenwarter, Z Horita, J Huot, Y Ikoma, M Janeček, M Kawasaki, P Král, S Kuramoto, T G Langdon, D R Leiva, V I Levitas, A Mazilkin, M Mito, H Miyamoto, T Nishizaki, R Pippan, V V Popov, E N Popova, G Purcek, O Renk, Á Révész, X Sauvage, V Sklenicka, W Skrotzki, BB Straumal, **S Suwas**, L S Toth, N Tsuji, RZ Valiev, G Wilde, M J Zehetbauer, X Zhu, (2022), Nanomaterials by severe plastic deformation: review of historical developments and recent advances, *Materials Research Letters* 10 (4), 163-256.
30. **S Suwas**, Nitish Bibhanshu, Natasha Prasad, Niraj Nayan, G. S. Avadhani, R. K. Ray, (2022), Mechanical response of as-cast equiatomic high entropy alloy CuFeCoNiMn, *Intermetallics* 143, 107461.
31. N Nadammal, M Rajput, SK Gupta, E Ivanov, AS Reddy, **S Suwas**, K Chatterjee, (2022), Laser Powder Bed Fusion Additive Manufacturing of a Low-Modulus Ti–35Nb–7Zr–5Ta Alloy for Orthopedic Applications, *ACS omega* 7 (10), 8506-8517.
32. VMS Muthaiah, S Indrakumar, **S Suwas**, K Chatterjee, (2022), Surface engineering of additively manufactured titanium alloys for enhanced clinical performance of biomedical implants: A review of recent developments, *Bioprinting* 25, e00180.
33. NV Pramodh, KK Verma, S Kumar, **S Suwas**, (2022), Asymmetric and Reverse Rolling of AM30 Mg Alloy to Improve Its Tensile Properties, *Magnesium Technology* 2022, 217-225.
34. A Panigrahi, TS Acharya, P Sengupta, D Kumar, L Sarangi, N Kumar, D Debasish, **S Suwas**, S Basu, M Debata, (2022), Microstructure and mechanical properties of novel tungsten heavy alloys prepared using FeNiCoCrCu HEA as binder, *Materials Science and Engineering: A* 832, 142451.

35. K Chatterjee, **S Suwas**, TA Abinandanan, (2022), Guest Editorial: Materials for a Sustainable Future, *Journal of the Indian Institute of Science* 102 (1), 3-4.
36. R Sabban, K Dash, **S Suwas**, BS Murty, (2022), Strength–Ductility Synergy in High Entropy Alloys by Tuning the Thermo-Mechanical Process Parameters: A Comprehensive Review, *Journal of the Indian Institute of Science* 102 (1), 91-116.
37. **S Suwas**, KV Rajulapati, (2021), Special Issue on Additive Manufacturing, *Transactions of the Indian National Academy of Engineering* 6, 877-877.
38. A Arya, **S Suwas**, C Gerard, L Signor, L Thilly, AH Chokshi, (2021), Strength and microstructure evolution in nickel during large strain wire drawing, *Acta Materialia* 221, 117396.
39. N Bibhanshu, R Rajanna, A Bhattacharjee, **S Suwas**, (2021), Phase transformations in third generation gamma titanium aluminides: Ti-45Al-(5, 10) Nb-0.2 B-0.2 C, *Metallurgical and Materials Transactions A* 52, 5300-5313.
40. RJ Vikram, L Kollo, KG Prashanth, **S Suwas**, (2021), Investigating the Structure, Microstructure, and Texture in Selective Laser-Melted Sterling Silver 925, *Metallurgical and Materials Transactions A* 52, 5329-5341.
41. VM Suntharavel Muthaiah, M Rajput, A Tripathi, **S Suwas**, K Chatterjee, (2021), Electrophoretic Deposition of Nanocrystalline Calcium Phosphate Coating for Augmenting Bioactivity of Additively Manufactured Ti-6Al-4V, *ACS Materials Au* 2 (2), 132-142.
42. S Ghosh, S Tippireddy, G Shankar, A Karati, G Rogl, P Rogl, E Bauer, SRK Malladi, BS Murty, **S Suwas**, R C Mallik, (2021), InSb nanoparticles dispersion in Yb-filled Co₄Sb₁₂ improves the thermoelectric performance, *Journal of Alloys and Compounds* 880, 160532.
43. TR Dandekar, RK Khatirkar, A Gupta, N Bibhanshu, A Bhadauria, **S Suwas**, (2021), Strain rate sensitivity behaviour of Fe–21Cr-1.5 Ni–5Mn alloy and its constitutive modelling, *Materials Chemistry and Physics* 271, 124948.
44. N Singh, S Acharya, KG Prashanth, K Chatterjee, **S Suwas**, (2021), Ti₆Al₇Nb-based TiB-reinforced composites by selective laser melting, *Journal of Materials Research* 36 (18), 3691-3700.
45. S Schmidt, GD Sathiaraj, SS Kumar, B Sulkowski, **S Suwas**, J Jaschinski, A Pukenas, Bin Gu, W Skrotzki, (2021), Effect of rolling and annealing temperature on the mechanical properties of CrMnFeCoNi high-entropy alloy, *Materials Chemistry and Physics* 270, 124830.
46. H Jaber, G Benabdelkhalek, A Kalinenko, L Kumar, T Lebedkina, MA Lebyodkin, Matthieu Mazière, **S Suwas**, (2021), Effect of the surface mechanical attrition treatment on multiscale complexity of the Portevin-Le Chatelier effect in an AlMg alloy, *EUROMAT 2021–European Congress and Exhibition on advanced materials and processes*.
47. R Kalsar, R Madhavan, **S Suwas**, (2021), Texture evolution in platinum: the role of non-octahedral slip, *Philosophical Magazine Letters* 101 (9), 360-369.

48. RJ Vikram, K Gupta, **S Suwas**, (2021), Design of a new cobalt base nano-lamellar eutectic high entropy alloy, *Scripta Materialia* 202, 113993.
49. KK Verma, S Kumar, **S Suwas**, (2021), Evolution of microstructure and texture during hot rolling and subsequent annealing of the TZ73 magnesium alloy and its influence on tensile properties, *Materials Science and Engineering: A* 821, 141480.
50. B Aashranth, G Shankar, MA Davinci, D Samantaray, U Borah, **S Suwas**, (2021), The effect of crystallographic orientation and interfaces on thermo-mechanical softening of a martensitic steel, *Journal of Materials Research* 36, 2742-2753.
51. S Ghosh, N Bibhanshu, **S Suwas**, K Chatterjee, (2021), Surface mechanical attrition treatment of additively manufactured 316L stainless steel yields gradient nanostructure with superior strength and ductility, *Materials Science and Engineering: A* 820, 141540.
52. D Kumar, G Shankar, KG Prashanth, **S Suwas**, (2021), Texture dependent strain hardening in additively manufactured stainless steel 316L, *Materials Science and Engineering: A* 820, 141483.
53. B Bishoyi, RK Sabat, **S Suwas**, SK Sahoo, (2021), Effect of shear deformation on microstructure and texture evolution in commercially pure titanium, *Philosophical Magazine* 101 (13), 1526-1548.
54. SK Gupta, N Shahidsha, S Bahl, D Kedaria, S Singamneni, P KDV Yarlagadda, **S Suwas**, K Chatterjee, (2021), Enhanced biomechanical performance of additively manufactured Ti-6Al-4V bone plates, *Journal of the Mechanical Behavior of Biomedical Materials* 119, 104552.
55. KU Yazar, M Shamitha, **S Suwas**, (2021), Texture-dependent dwell fatigue response of titanium, *Philosophical Magazine* 101 (12), 1443-1470.
56. M Behera, M Rajput, S Acharya, N Nadammal, **S Suwas**, K Chatterjee, (2021), Zinc and cerium synergistically enhance the mechanical properties, corrosion resistance, and osteogenic activity of magnesium as resorbable biomaterials, *Biomedical Materials* 16 (4), 044109.
57. N Bibhanshu, **S Suwas**, (2021), Globularisation of α_2 phase in ($\alpha_2 + \gamma$) two-phase lamellar titanium aluminide by thermal cycling, *Materials Letters* 292, 129617.
58. S Acharya, R Soni, **S Suwas**, K Chatterjee, (2021), Additive manufacturing of Co-Cr alloys for biomedical applications: A concise review, *Journal of Materials Research*, 1-15.
59. S Ghosh, G Shankar, A Karati, G Rogl, P Rogl, E Bauer, BS Murty, **S Suwas**, R C Mallik, (2021), Thermoelectric properties enhancement of Ba_{0.2}Co₄Sb₁₂ through dispersion of GaSb inclusions, *Physica B: Condensed Matter* 606, 412440.
60. D Kumar, G Shankar, **S Suwas**, (2021), Microstructural anisotropy in Electron Beam Melted 316L stainless steels, *IOP Conference Series: Materials Science and Engineering* 1121 (1), 012049.

61. D Kumar, **S Suwas**, (2021), New Insight into the development of deformation texture in face-centered cubic material, *IOP Conference Series: Materials Science and Engineering* 1121 (1), 012011.
62. A Gupta, RK Khatirkar, A Kumar, KS Thool, N Bhibhanshu, **S Suwas**, (2021), Texture development during cold rolling of a β -Ti alloy: experiments and simulations, *Metallurgical and Materials Transactions A* 52 (3), 1031-1043.
63. M Suresh, R Kalsar, AM More, A Bisht, N Nayan, **S Suwas**, (2021), Evolution of microstructure and texture in the third generation Al–Li alloy AA2195 during warm hybrid processing, *Journal of Alloys and Compounds* 855, 156750.
64. S Bahl, **S Suwas**, K Chatterjee, (2021), Comprehensive review on alloy design, processing, and performance of β Titanium alloys as biomedical materials, *International materials reviews* 66 (2), 114-139.
65. N Bibhanshu, G Shankar, **S Suwas**, (2021), Hot deformation and softening response in boronmodified two-phase titanium aluminide Ti–48Al–2V–0.2 B, *Journal of Materials Research* 36, 311-321.
66. S Mishra, M Suresh, AM More, A Bisht, N Nayan, **S Suwas**, (2021), Texture control to reduce yield strength anisotropy in the third generation aluminum-copper-lithium alloy: experiments and modeling, *Materials Science and Engineering: A* 799, 140047.
67. **S Suwas**, RJ Vikram, (2021), Texture Evolution in Metallic Materials During Additive Manufacturing: A Review, *Transactions of the Indian National Academy of Engineering*, 1-13.
68. D Kumar, S Jhavar, A Arya, KG Prashanth, **S Suwas**, (2021), Mechanisms controlling fracture toughness of additively manufactured stainless steel 316L, *International Journal of Fracture*, 1-18.
69. G Bojjawar, **S Suwas**, AH Chokshi, (2021), Simultaneous Enhancement of Strength and Ductility in Severely Drawn Textured Ni-Co Microwires, Available at *SSRN* 3891422.
70. S Acharya, **S Suwas**, K Chatterjee, (2021), Review of recent developments in surface nanocrystallization of metallic biomaterials, *Nanoscale* 13 (4), 2286-230.
71. A Kar, S Malopheyev, S Mironov, R Kaibyshev, **S Suwas**, SV Kailas, (2021), A new method to elucidate fracture mechanism and microstructure evolution in titanium during dissimilar friction stir welding of aluminum and titanium, *Materials Characterization* 171, 110791.
72. S Ravindran, G Shankar, **S Suwas**, R Narasimhan, (2021), Fracture mechanism and toughness of a rolled magnesium alloy under dynamic loading, *Acta Materialia* 202, 350-365.
73. S Mishra, KU Yazar, A Kar, R Lingam, NV Reddy, O Prakash, **S Suwas**, (2021), Texture and microstructure evolution during single-point incremental forming of commercially pure titanium, *Metallurgical and Materials Transactions A* 52, 151-166.

74. G Shankar, S Raguraman, LA Barrales-Mora, **S Suwas**, (2020), Development of Recrystallization Texture in Commercially Pure Titanium: Experiments and Simulation, *JOM* 72, 4559-4573.
75. R Kalsar, D Yadav, A Sharma, HG Brokmeier, J May, HW Höppel, W Skrotzki, **S Suwas**, (2020), Effect of Mg content on microstructure, texture and strength of severely equal channel angular pressed aluminium-magnesium alloys, *Materials Science and Engineering: A* 797, 140088.
76. S Ghosh, G Shankar, A Karati, K Werbach, G Rogl, P Rogl, E Bauer, BS Murty, **S Suwas**, R C Mallik, (2020), Enhanced Thermoelectric Performance in the $Ba_{0.3}Co_4Sb_{12}/InSb$ Nanocomposite Originating from the Minimum Possible Lattice Thermal Conductivity, *ACS Applied Materials & Interfaces* 12 (43), 48729-48740.
77. KU Yazar, S Mishra, A Karmakar, A Bhattacharjee, **S Suwas**, (2020), On the temperature sensitivity of dwell fatigue of a near alpha titanium alloy: role of strain hardening and strain rate sensitivity *Metallurgical and Materials Transactions A* 51, 5036-5042.
78. G Shankar, R Madhavan, R Kumar, B Sahoo, RK Ray, **S Suwas**, (2020), Micro-mechanism of evolution of microstructure and texture in Ni-Fe alloys, *Materialia* 13, 100811.
79. K Dash, KU Yazar, K Chattopadhyay, **S Suwas**, (2020), Graded microstructure and texture in ultrafine grained multi-layered immiscible bimetallic system, *Materialia* 13, 100830.
80. R Kalsar, R Madhavan, RK Ray, **S Suwas**, (2020), Texture transition in Al-Mg alloys: effect of magnesium, *Philosophical Magazine* 100 (16), 2143-2164.
81. N Bibhanshu, A Bhattacharjee, **S Suwas**, (2020), Hot deformation response of titanium aluminides Ti-45Al-(5, 10) Nb-0.2 B-0.2 C with pre-conditioned microstructures, *Journal of Alloys and Compounds* 832, 154584.
82. S Acharya, S Mishra, KU Yazar, K Chatterjee, **S Suwas**, (2020), Evolution of Deformation Texture in Low Modulus β Ti-34Nb-2Ta-(0, 3)Zr-0.5O Alloys, *Metallurgical and Materials Transactions A* 51 (8), 4045-4058.
83. S Mishra, KU Yazar, AM More, L Kumar, R Lingam, NV Reddy, O Prakash, **S Suwas**, (2020), Elucidating the deformation modes in incremental sheet forming process: Insights from crystallographic texture, microstructure and mechanical properties, *Materials Science and Engineering: A* 790, 139311.
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- 420.G.S. Avadhani, S. Tapase, **S. Suwas** (2013), Hot deformation processing and texture in magnesium alloy WE43, *IFAC Proceedings Volumes (IFAC-PapersOnline)*, 15 (PART 1), pp. 208-213.
- 421.S. Roy, **S. Suwas**, S. Tamirisakandala, R. Srinivasan, D.B. Miracle (2012), Microstructure and texture evolution during β processing of hypoeutectic boron modified Ti-6Al-4V alloy, *Ti 2011 - Proceedings of the 12th World Conference on Titanium*, 1, pp. 689-693.
- 422.P.K. Ajeet Babu, A.S. Nilawar, P. Vishvakarma, S. Biswas, **S. Suwas**, G. Manivasagam (2012), Corrosion behavior of ultra fine grain pure magnesium for automotive applications, *SAE Technical Papers*. DOI: 10.4271/2012-28-. 0016.
- 423.S. Roy, **S. Suwas**, S. Tamirisakandala, R.Srinivasan, D.B. Miracle (2009), Processing Response of Boron Modified Ti-6Al-4V Alloy In (alpha plus beta) Working Regime”, published in **TMS 2009: 138th Annual Meeting & Exhibition - Supplemental Proceedings**, Vol 3, pp. 63-70.

424. **S. Suwas**, S. Biswas and A. Bhowmick (2009), Ultra-fine Grain Materials by Severe Plastic Deformation: Application to Steels (*invited paper*) in *“Texture and Microstructure of Steels and Some Other Materials”* eds. A. Haldar, S. Suwas and D. Bhattacharjee, Springer-Verlag, London.
425. S. Biswas, Satyaveer Singh D. and **S. Suwas** (2009), “Grain growth in pure Magnesium”, in *“Texture and Microstructure of Steels and Some Other Materials”* eds. A. Haldar, S. Suwas and D. Bhattacharjee, Springer-Verlag, London.
426. Segolene de Waziers, S. Roy, **S. Suwas**, S. Tamirisakandala, R. Srinivasan and D.B. Miracle (2009), “Solidification Microstructure and Texture in Grain-refined Titanium alloys” in *“Texture and Microstructure of Steels and Some Other Materials”* eds. A. Haldar, S. Suwas and D. Bhattacharjee, Springer-Verlag, London.
427. Satyaveer Singh D., A. Bhowmik, S. Biswas, **S. Suwas** and K. Chattopadhyay (2009), “Evolution of crystallographic texture during Equal Channel Angular Extrusion (ECAE) of ($\alpha+\beta$) brass” in *“Texture and Microstructure of Steels and Some Other Materials”* eds. A. Haldar, Satyam Suwas and D. Bhattacharjee, Springer-Verlag, London.
428. H.S. Vijaya, Nilesh Gurao, Y. Srinivasa Reddy, **S. Suwas** and S. Mohan (2008): “Structure and Crystallographic Texture evolution in NiTi films and their effect on mechanical properties” in *Proceedings of the International Conference on Smart Materials Structures and Systems*.
429. W. Skrotzki, B. Klöden, C.-G. Oertel, N. Scheerbaum, H.-G. Brokmeier, **S. Suwas**, and L.S. Tóth (2005): “Texture Gradient in FCC Metals Deformed by Equal Channel Angular Pressing as a Function of Stacking Fault Energy” in: *Ultra-fine Grained Materials IV* (ISBN: 978-0-87339-628-8), Y.T. Zhu, T.G. Langdon, Z. Horita, M. Zehetbauer, S.L. Semiatin and T.C. Lowe (editors) pp. 283-288.
430. **Satyam Suwas**, T.K. Nandy, V.V. Bhanu Prasad, S.V. Kamat and D. Banerjee (2001): “Development of an orthorhombic aluminide based laminated composite”, *Structural Intermetallics*, Eds. K.J. Hemkar and D.M. Dimiduk, TMS, Warrendale PA, pp. 693-668.
431. **Satyam Suwas** and R.K. Ray (2000): “Textural and microstructural evolution in the α_1 and α_2 phases derived by ageing of the β phase in a Ti-24Al-11Nb alloy”, *Proceedings of International Conference on Processing and Manufacturing of Advanced Materials (THERMEC'2000)*, TMS, Elsevier Science.
432. **Satyam Suwas**, R.K. Ray, A.K. Singh and S. Bhargava (1999): “Evolution of Basal Textures on Hot Rolling of a Two Phase Titanium Aluminide Alloy”, in *“Textures in Materials Research”*, Eds. R.K. Ray and A.K. Singh, Oxford & IBH publishing Co. Pvt. Ltd., New Delhi, pp. 415-437.
433. **Satyam Suwas** and R.K. Ray (1999): “Effect of Processing Variables on Texture Formation in a Two Phase Ti₃Al-base Alloy, in *Proceedings of the Twelfth*

International Conference on Texture of Materials (ICOTOM-12), Ed. J.A. Szpunar, NRC Research Press, Ottawa, pp. 641-646.

434. **Satyam Suwas** and R.K. Ray (1999): "Thermal Stability of Basal Texture in a Ti₃Al-Base Alloy" in *Proceedings of the Twelfth International Conference on Texture of Materials (ICOTOM-12)*, Ed. J.A. Szpunar, NRC Research Press, Ottawa, pp. 916-921.
435. S. Bhargava, **Satyam Suwas** and M. Sujata (1997): "Particulate structures of aluminides and their formation by the reaction synthesis", *Proc. International Conference on Recent Advances in Metallurgical Processes*, Eds. D.H. Sastry, E.S. Dwarakadasa, G.N.K. Iyengar and S. Subramanian, New Age International Publishers, New Delhi, pp.665-670.

Patents filed

- (1) "Copper containing austenitic stainless steel and its fabrication method" (Patent No.: 10-1281101) **granted on 26th June 2013** (with Eric Fleury, Dong-Ik Kim, Subhasis Sinha and Sungmin Hong). Date of filing 24th December 2010 (Application No. 10-2010-0134684).
- (2) "A method to process Interstitial Free Steels by Multi-axial forging (MAF)" **granted on 13th March, 2013** (with D. Bhattacharjee, R.K. Ray, Somjeet Biswas, Ayan Bhowmik and Satyaveer Singh D.) TATA Steel and Indian Institute of Science, Bangalore, India, Pub. No.: 1831/KOL/08 dated 27.10.08, International Application No.: PCT/IN2009/000607. Chinese Appl. No.200980100972.5
- (3) "Method to produce bulk sub-micron Magnesium" **granted on: 23rd April, 2018** Indian Patent No. **295975**; (with Somjeet Biswas and Satyaveer Singh D.), Indian Institute of Science Bangalore, India. Application No. 1457/CHE/2008, Indian patent.
- (4) "Production of ultrafine grains in Interstitial Free Steels by equal channel angular extrusion (ECAE)", (with D. Bhattacharjee, R.K. Ray and Ayan Bhowmik), TATA Steel and Indian Institute of Science, Bangalore, India, Pub. No.: WO/2010/049950 International Application No.: PCT/IN2009/000608. Indian application No. 1840/KOL/2008 dtd. 27.10.08
- (5) "Aluminium based alloys for high temperature applications and method of producing such alloys" (with Surendra Kumar M, Sukla Mondol, Subodh Kumar and K. Chattopadhyay), Indian Institute of Science, Bangalore, India. Ref. No. IP25382/GN, Indian Patent.

Plenary/Invited Lectures delivered in International/National Conferences, and lectures delivered in Academic institutions, and Research Laboratories

1. **“Understanding micro-mechanisms of deformation through texture evolution in ultrafine grain and nanocrystalline materials”**, ASM-IIM Medal lecture at University of Utah, Salt Lake City, USA, 15th November 2017.
2. **“Texture, microtexture and mechanical properties of some Mn steels”** Invited lecture at ICOTOM 18 (*18th International Conference on Texture of Materials*), St. George, Utah, USA, 6th November 2017.
3. **“An EBSD based study of deformation mechanisms in high to medium Mn steels”** Invited Lecture, EMSI, Kalpakkam, on 17-19 July 2017.
4. **“Evolution of micro-texture, texture and mechanical properties of aluminium added Mn steel”**, Invited Lecture, Advanced High Strength Steel Conference, Jamshedpur 22-23 February 2017.
5. **“Texture evolution in FCC materials: Aluminium alloys to TWIP steels”** Invited Lecture at ISRS, Chennai on December 22, 2016.
6. **“Microstructural design in Engineering materials: Emerging trends”** Invited Lecture at NMD-ATM, IIT Kanpur on Nov. 12-14, 2016.
7. **“Evolution of microstructure and texture during high pressure torsion of nanocrystalline Ni- ing high pressure torsion of nanocrystalline Ni-Co alloys”** Invited Lecture at EMI Conference, Metz, France on October 26, 2016.
8. **“Charaterization of deformed and annealed microstructures by Orientation Imaging microscopy”**, delivered at XXXVII Annual Meeting of Electron Microscope Society of India (EMSI) and the International conference on Electron Microscopy held in Varanasi during June 2-4, 2016. (***Plenary lecture***)
9. **“Texture control in light alloys for Automotive and Aerospace Applications”**, delivered at National Institute of Technology, Tiruchirapalli on 11th April, 2015.
10. **“Understanding deformation mechanisms through texture development in face centered cubic (FCC) metals and alloys”**, delivered at Kobe University, Kobe, Japan on 30th March 2015.
11. **“Through-process texture development in a boron modified titanium alloy”**, delivered at National institute for Materials Science, Tsukuba, Japan on 26th March, 2015.
12. **“Understanding deformation mechanisms through the evolution of texture during severe plastic deformation”**, delivered at Toyohashi University of Technology, Toyohashi, Japan on 24th March, 2015.
13. **“Role of stacking fault energy on texture evolution revisited”** to be delivered at *ICOTOM 17 (17th International Conference on Texture of Materials)*, organized in Dresden, Germany during August 22-28, 2014. (***Plenary lecture***)

14. **“Evolution of texture and microstructure during severe plastic deformation of magnesium alloys magnesium alloy”**, to be delivered *nanoSPD6 (Nanostructured materials by severe plastic deformation)* held in Metz, France during 28th June-1st July, 2014.
15. **“Ultra-fine Grain Materials by Severe Plastic Deformation”**, delivered at 27th National Convention of Metallurgical & Materials Engineers of the Institution of Engineers, India organised in Bangalore, India during 6-7 February 2014.
16. **“Role stacking fault energy and grain size on the evolution of deformation texture in close packed materials”**, delivered at Oak Ridge National Laboratory, USA on 9th December 2013.
17. **“Deformation texture and microstructure evolution in nickel and nickel-cobalt alloys”**, delivered at *THERMEC 2013* in Professor Günter Gottstein Honorary Symposium organised at Las Vegas, USA during 2-6 December, 2013.
18. **“Stacking fault energy, grain size and the evolution of deformation texture”**, delivered at NMD-ATM of Indian Institute of Metals held in Varanasi, India during 12-15th November, 2013.
19. **“Severe plastic deformation of magnesium alloys”**, at Technical University of Chemnitz, Germany on 12th June 2013.
20. **“Texture evolution in micro- and nano-crystalline Nickel and Nickel-Cobalt alloys”**, delivered at Technische Universität, Dresden, Germany on 8th June 2013.
21. **“Evolution of microstructure and texture during severe plastic deformation and annealing of magnesium alloys”** delivered in *5th International Conference on Recrystallization and Grain Growth*, Sydney, Australia during 5- 10 May 2013.
22. **“Multi-axial forging: A viable approach for processing of Magnesium alloys”** delivered at MagNET workshop organized by at University of Waterloo, Canada during April 11-12, 2013.
23. **Evolution of crystallographic textures in materials processing and its implications** delivered at Indian Science Congress ISC-2012 held at Bhubaneswar during January 3-7, 2012.
24. **“Electron back scatter diffraction study of severely deformed metals”** delivered at Golden Jubilee International Conference of Electron Microscopy Society of India held at Hyderabad during 6-8 July, 2011.
25. **“Understanding deformation behaviour at nano- and macro- length scales through texture development”**, at Universite Paul Verlaine de Metz on 9th May 2011.
26. **“Evolution of microstructure and texture during severe plastic deformation”** delivered at University of Munster on 7th June, 2011.
27. **“Evolution of texture during processing of some light weight materials”** delivered at Indo-US symposium on Materials for Energy, held in Saskatoon, Canada during January 20-23, 2011.

28. **“Mechanism of texture formation during deformation and annealing”** presented at **STEM-2010**, held in IGCAR Kalpakkam, during 25-26 November, 2010.
29. **“Texture and micro-texture evolution in nano-crystalline and sub-microcrystalline materials”**, presented at *Microstructure-2009*, held in Mumbai during November 2009.
30. **“EBSD analyses of grain boundaries in thermo-mechanically processed materials”**, presented at **“KIST-IISc joint symposium”** held in Seoul, KOREA on 24th February, 2009.
31. **“Texture and microstructural evolution during severe plastic deformation: Application to IF steels”** presented at **“International Conference on Texture and Microstructure of Steels”** held in Jamshedpur, INDIA during 5-7th Feb., 2008.
32. **“Evolution of texture during Equal Channel Angular Extrusion (ECAE) of FCC and HCP metals”**, delivered at *INDO-US workshop on “Recent Advances in Microstructure-Texture-Property Relations in Close Packed Metals”*, held in Vishakhapatnam, INDIA during Dec. 28-30, 2005.
33. **“Development of microstructure during severe plastic deformation”** lecture delivered at NIT, Tiruchirapally on 15th June 2009.
34. **“Crystallographic texture in Metals and alloys and its influence on material properties”** lecture delivered in DST-SERC school at IIT, Bombay, March 2009.
35. **“Crystallographic texture: recent trends”** lecture delivered NIT, Tiruchirapally on 14th March 2009.
36. **“Ultra fine grains by Equal Channel Angular Extrusion”** presented at Carnegie Mellon University, Pittsburgh, USA on 27th August, 2008.
37. **“Equal Channel Angular Extrusion of close packed metals”** lecture delivered at Korea Institute of Science and Technology, Seoul, Korea on 5th July 2007.
38. **“Introduction to Materials Science”** lecture delivered at VIT, Vellore during October 2006.
39. **“Crystallographic texture in Metals and alloys and its influence on material properties”** lecture delivered in DST-SERC school at IIT, Bombay, March 2006.
40. **“Crystallographic texture in Metals and alloys and its influence on material properties”** lecture delivered in DST-SERC school at IIT, Bombay, January 2006.
41. **“Evolution of texture during Equal Channel Angular Extrusion (ECAE) of FCC and HCP metals”**, presented at *INDO-US workshop on “Recent Advances in Microstructure-Texture-Property Relations in Close Packed Metals”*, held in Vishakhapatnam, INDIA during Dec. 28-30, 2005.

- *Details of the Ph.D. thesis supervised*

	Name	Thesis title	Year	Current position
1	Dr. Nilesh P. Gurao	Some critical issues pertaining to Deformation Texture evolution in close-packed metals and alloys	2010	Professor, IIT Kanpur
2	Dr. Somjeet Biswas	Evolution of Texture and Microstructure during processing of pure Mg and Mg alloy AM30	2010	Associate Professor, IIT Kharagpur
3	Dr. P. Ramesh Narayanan (Co-supervisor: Prof. S. Ranganathan, Dr.P.P. Sinha)	Study of Crystallographic Texture and Residual Stresses in aluminium alloys for space applications <i>(The thesis won Prof. Brahm Prakash best thesis award from Indian Institute of Metals, Trivandrum Chapter)</i>	2011	Scientist, Indian Space Research Organization (ISRO)
4	Dr. Shibayan Roy	Role of Boron on the Microstructure and Texture Evolution in Ti-6Al-4V-0.1B alloy <i>(The thesis won Prof. K.P. Abraham Medal for best Ph.D. thesis in the field of Materials; also won best thesis award from Indian National Academy of Engineering (INAE)</i>	2011	Assistant Professor, IIT Kharagpur
4	Dr. K.S. Suresh	Evolution of texture and microstructure in NiTi based shape memory alloys and its impact on shape memory behaviour	2012	Assistant Professor, IIT Roorkee
6	Dr. Madhavan Radhakrishnan	Role of stacking fault energy on texture evolution in micro- and nano-crystalline Ni-Co alloys	2013	Research Scientist, UNT.
7	Dr. Rama Krushna Sabat	Evolution of microstructure and texture during severe plastic deformation of a Magnesium-Cerium alloy	2014	Assistant Professor, IIT Bhubaneswar
8	Dr. Naresh N. (Co-supervisor: Prof. S.V. Kailas)	Development of Microstructure, Texture and Residual Stresses during Friction Stir Processing of Aluminium Alloys	2015	Adolf-Martens-Fellowship , Bundesanstalt für Materialforschung und –prüfung, GERMANY
9	Dr. Amit Sharma (Co-	Evolution of crystallographic texture and microstructure in	2016	Scientist at EMPA Laboratories, Thun

	supervisor: Prof. S. Mohan)	sputter deposited NiMnGa films and their influence on magnetic properties		Switzerland
10	Dr. Atanu Chaudhury	Hot deformation behaviour of some refractory metals and alloys	2016	Senior Engineer at G.E.Hyderabad
11	Dr. Amlan Kar (Co-supervisor: Prof. S.V. Kailas)	A study of optimization and micro-mechanism in friction stir welding of aluminum to titanium	2017	Asst. Professor at IIT-ISM Dhanbad
12	Dr. Anuj Bisht (Co-supervisor: Prof. G. Jagadeesh)	Response of shock loading on microstructural and texture evolution in close packed metallic materials	2017	Research Assistant Professor, Penn State University.
13	Dr. Sathishkumar S. (Co-supervisor: Prof. G. Mohan Rao)	Sputter deposited ZrC and NbC films - Studies on Microstructure, Texture and Hardness	2018	Post doctoral fellow at IISc
14	Dr. R. Kalsar	Evolution of Microstructure and Texture in Manganese Steels	2018	Scientist at PNNL
15	Dr. S. Bahl (Co-supervisor: Dr. K. Chatterjee)	Nanoscale surface engineering of metallic biomaterials for enhancement of mechanical and biological responses	2018	Scientist at ORNL
16	Dr. N.S. Prasad (Co-supervisor: Prof. R. Narasimhan)	Experimental and numerical studies on Mode-I ductile fracture behavior of Magnesium	2018	Senior Engineer at BISS
17	Dr. Abhishek M. More	Control of texture and microstructure in Aluminium-Lithium alloy AA2195 and its response on mechanical properties	2018	Asst. Prof. at College of Engineering, Pune
18	Dr. Chandrasekhar P. (Co-supervisor: Prof. S. Kumar)	Development of wrought Mg-Li based alloys with improved strength and ductility	2018	Post-doctoral fellow at IISc
19	Dr. Nitish Bibhanshu	Solidification, Phase Transformation and Hot	2019	Researcher, University of

		Deformation of Titanium Aluminide		Tennessee.
20	Dr. Srijan Acharya	Development of a low modulus Ti-Nb-Ta-O alloy for orthopedic applications	2019	Post-doctoral fellow at Technion-Israel Institute of Technology.
21	Dr. Krishna Verma	Development of Wrought TZ73 Magnesium Alloy	2020	Post-Doctoral Research Associate at Ames National Laboratory, USA.
22	Dr. Yazar K U	Dwell Fatigue of Titanium Alloy	2021	Assistant Professor, VIT Vellore.
23	Dr. Gyan Shankar	Evolution of recrystallisation texture in face-centered cubic materials: Role of twin boundaries	2021	Research Associate, Indian institute of science Bangalore.
24	Dr. R. J. Vikram	Structure-Property Correlation in Additively Manufactured High-Temperature Materials: Insights from Nickel-Base Superalloy IN718 & Nickel-Base Eutectic High Entropy Alloy AlCoCrFeNi2.1	2023	Post-Doctoral Research Associate at University of Michigan, USA.
25	Dr. Deepak Kumar	Microstructure-texture-mechanical property correlation in additively manufactured stainless Steel 316L and Cu-Ni-Sn	2023	Post-Doctoral Research Associate at Purdue University, USA

- ***Masters Dissertation supervised***

- ***Master of Science (Engg.) Dissertation***

Ms. Rohini Garg (Co-supervisor: Prof. S. Ranganathan) 2007
(Study of evolution of texture and microstructure during different modes of rolling and annealing of two phase ($\alpha+\beta$) brass)

Mr. Rushikesh Kailas Sabban , MS (2016-2018) (jointly with Dr. Kaushik Chatterjee)
(Tailoring of Mechanical-Biological-Electrochemical response of 3-D printed Titanium alloys for Biomedical application)

- ***Master of Engineering Dissertation***

	Name	Dissertation title	Year
1	Mr Lokesh Paliwal (Co-supervisor: Prof. S. Ranganathan)	Reconstruction of 3D Microstructures using montage based serial sectioning technique in alloy A356 and A356 with 20 wt% SiC	2006
2	Mr J. Krishna Reddy	Processing-texture-property correlation in materials processed by Equal Channel Angular	2007

		Extrusion	
3	Mr Shishir Jain (Co-supervisor: Prof. S. Ranganathan)	Reconstruction of 3D microstructures using serial sectioning techniques: Titanium alloy and Steel	2007
4	Mr Ayan Bhowmik	Severe plastic deformation of Interstitial Free Steel	2008
5	Mr Subhasis Sinha	Grain boundary engineering of modified Super-304H Austenitic Steel	2009
6	Mr Pankaj Kumar	Processing-microstructure-texture correlation in high carbon steels	2010
7	Mr P Arun Dinesh	Accumulative roll bonding of aluminium and magnesium alloys	2010
8	Mr G. Kannan (Co-supervisor: Prof. M.K. Surappa)	Deformation and recrystallization behaviour of Mg/Mg-alloy SiC composites	2010
9	Mr Sajal Hatwal	Study of processing-texture-property relationship in ultrafine grain high carbon steels for wire applications	2011
10	Mr Aviral Madhup	Accumulative roll bonding of aeronautical grade magnesium alloys	2011
11	Mr Nachiketa Ray	Shock wave deformation of aluminium alloys	2012
12	Mr Shekhar Tapase (Co-supervisor: Dr. G.S. Avadhani)	Processing-texture-mechanical property correlation in WE43 alloy	2012
13	Mr Poshit Nag	Understanding texture and functional property relationships in thin films	2013
14	Ms K. Sahithya (Co-supervisor: Dr. G.S. Avadhani)	Processing-property relationship in high temperature magnesium alloy	2013
15	Mr Sudipta Pramanik	Development of low density steels and their processing-texture-property relationship	2014
16	Mr Subrato Panda (Co-supervisor: Dr. G.S. Avadhani)	Texture-property relationship in some titanium alloys	2014
17	Mr Tushar Pund	Processing-microstructure-texture correlation in some low density ferritic and pearlitic steels	2015
18	Ms. Nikki Kamble (Co-supervisor: Dr G.S. Avadhani)	Effect of strain rate and temperature on the processing-microstructure correlation in AM 30 and AM 50 Alloys	2015
19	Mr. Subhas Kumar	Study of texture and microstructure evolution during high temperature and high strain rate deformation of HCP materials	2016
20	Mr. Awadh Kishor Gupta (Co-supervisor: Dr G.S. Avadhani)	Effect of alloying addition on interlammellar spacing in pearlitic grade steel	2016
21	Mr Himanshu Singh	Severe plastic deformation of Al-Cu-Li alloy by	2017

		accumulative roll bonding	
22	Mr Basavaraj B. (Co-supervisor: Dr G.S. Avadhani)	The Effect of Alloying additions and Heat-treatment on the Mechanical Properties of Nano-pearlitic steel and Optimization of Hot Workability by developing a Processing map	2017
23	Mr. Pramod K. Singh	The effect of alloying addition on the Microstructure and Mechanical Properties of Ferritic-Pearlitic Steels and the Study of Hot Deformation Behavior	2018
24	Mr. V. Teja	Mechanical Behavior of Medium Mn-TWIP steels for automotive applications	2018
25	Ms. Natasha Prasad (Co-supervisor: Dr G.S. Avadhani)	Study of deformation and recrystallization behavior in High Entropy Alloy (CoCuFeMnNi)	2018
26	Mr. Kayyam sai pranay teja (jointly with Dr. G. S. Avadhani)	Optimization of Mechanical Properties of Rail Steel by Thermo-Mechanical-Treatment	2019
27	Ms. Shamitha Sri Muduru	Effect of microstructure on dwell-fatigue of titanium alloy	2020
28	Mr. Kukkala Prasanna Kumar Reddy	Spark Plasma Sintering of Orthopaedic Beta-Ti (TNZT)Alloy	2021
29	Mr. Sagar Gupta	Recrystallization simulation using Cellular Automata	2021
30	Mr. Niranjan Tanneer	Effect of crystal orientation on microstructure and texture of shock loaded AM30 magnesium alloy	2022
31	Ms. Kunapuli Susmitha	Wire Arc Additive Manufacturing of Copper Cladding on SS316	2022
32	Ms. A Kiruthika (jointly with Dr. Dheepa Srinivasan, Pratt& Whitney R& D Center, Bangalore)	Microstructural characterization, mechanical and corrosion behaviour of additively manufactured alloys	2022
33	Mr. Rashmi Ranjan Sethi (jointly with prof.Subhodh Kumar)	Effect of asymmetric rolling on magnesium alloy AM 30	2022
34	Ms. Deepika Kumari Sahu	High Temperature Study of High Entropy Alloy(Cantor Alloy)	2022

- ***Sponsored Research projects***

- ***Sponsored Research projects***

As Principal Investigator

<i>SN</i>	<i>Title</i>	<i>Funding agency</i>	<i>Duration</i>
1	Investigation on ultra-fine grained (UFG) steels	Tata Steel	September 2006 –September 2008
2	Processing–texture relationship in B-modified Ti-alloys	US Air force (AOARD)	April 2007-April 2008
3	Processing–texture-property relationship in bulk nano -structured/ ultra-fine grained materials produced by Accumulative Roll Bonding	Department of Science and Technology (DST), India	March 2007-February 2010
4	Development of high temperature austenitic steels with Cu nano-dispersoids	Korea Institute of Science & Technology, Korea	October 2008-September 2010
5	Deposition and characterization of Cu-based interconnects for microelectronics devices	Council of Scientific and Industrial Research, India	March 2009-February 2012
6	Simulation of cold rolling texture for TWIP steel	Tata Steel	June 2009-May 2011
7	Grain refined high carbon steels for wire application	Tata Steel	July 2009-June 2012
8	Deposition and characterization of Cu-based interconnects for microelectronics devices	Council of Scientific and Industrial Research, India	March 2009-February 2012
9	Grain boundary engineering for mechanical properties improvement	Korea Institute of Science & Technology, Korea	March 2009-February 2011
10	Processing-Microstructure-Property relationship to enhance plasticity in Magnesium alloys	General Motors, USA	August 2010-December 2012
11	Evolution of Microstructure and texture during high temperature	Department of Atomic Energy. Board of Research	March 2011-March 2015

	deformation behavior of refractory metals and alloys	in Nuclear Sciences (BRNS), India	
12	Development of beta titanium alloys for orthopedic implants	Department of Science and Technology (DST), Govt. of India	July 2014- June 2017
13	Modeling of advanced materials for simulation of transformative manufacturing process	DST-EPSRC (UK Engg & Physical Sciences Research Council –Dept. of Science and Technology, India	Sept. 2014- August 2017
14	Development of low Mn TWIP steels	Tata Steel	October 2014- September 2017
15	Development of texture in light weight alloys during processing and its impact on property anisotropy	The Boeing Company, USA	January 2015- December 2018
16	Deformation behaviour and control of microstructure and texture in gamma based TiAl intermetallics for Gas Turbine Application	Aeronautics Research & Development Board (GT Map)	January 2016 – January 2020
17	Development of an innovative process to fabricate ultra-fine grained bimetallic thin sheets for microforming application	IMPRINT Ministry of Human Resource Development	February 2017 – May 2018
18	High strength, wear and corrosion resistant steel for high speed rail and elastic clip	IMPRINT Ministry of Human Resource Development	December 2017 – December 2020
19	Microstructural characterization of Mechanically tested 304HCu SS, Alloy 617M and alloy 625	Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam	December 2017 – December 2020
20	Understanding the micro-mechanisms of texture evolution and micro-mechanisms of texture evolution and microstructure formation during dynamic recrystallization of a boron added P91 steel	Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam	December 2017 – December 2019
21	Additive Manufacturing Parameters and High Cycle Fatigue of Ti6242/Ti6246	Pratt & Whitney, USA	February 2020 – January 2023
22	Experimental and numerical engineering of eutectic microstructures in novel high melting	Department of Science and Technology (DST-DFG)	September 2020 – August 2023

	Mo-Si-Ti alloys processed by additive manufacturing: microstructure, texture and ensuing mechanical properties		
23	The development of β -Ti alloys by in situ alloying using additive manufacturing: Processing, microstructure and mechanical properties	Department of Science and Technology – CRG	June 2022 – May 2025
	Structure and properties of additive manufactured intermetallic titanium alloys for heat resistant applications	Department of Science and Technology (DST-RSF)	December 2022- November 2025
24	Centre for Excellence in Smart Hybrid Additive Manufacturing (SHyAM)	Department of Science and Technology (SHyAM)	March 2023 – February 2026
25	Additive Manufacturing of Ti-6Al-242 Disc and comparative studies with wrought disc	DRDO-CoE	May 2023 – April 2026

Co-investigator for:

<i>SN</i>	<i>Title</i>	<i>Funding agency</i>	<i>Duration</i>	<i>PI</i>
1	Equal channel angular pressing of metals and alloys	Defence Research and Development Organisation (DRDO), India	Inducted in October 2005 till March 2007	Prof. K. Chattopadhyay
2	Development of high temperature aluminium alloy	The Boeing Company, USA	June 2006-May 2011	Prof. K. Chattopadhyay
3	Development of magnesium alloys with improved mechanical and corrosion properties	The Boeing Company, USA	November 2009-October 2012	Prof. S. Kumar
4	Friction Stir Welding of dissimilar metals	Defence Research and Development Organisation (DRDO), India	October 2010 – October 2013	Prof. S.V. Kailas
5	Processing, structure, texture and crystal plasticity in two phase titanium alloys	The Boeing Company, USA	Jan 2011- December 2014	Prof. D. Banerjee
6	Investigation of composition and slip transfer in titanium alloys	Pratt & Whitney, USA	April 2014- March 2017	Prof. D. Banerjee

7	Surface and sub-surface characterization of holes drilled/ reamed in 4340M Steel and its relation to mechanical properties	The Boeing Company, USA	January 2015- December 2017	Prof. S.V. Kailas
8	Understanding mechanical size effects in metallic microwire synergy between experiments and simulation	Indo French Centre for the Promotion of Advanced Research (CEFIPRA)	January 2016 – October 2018	Prof. A.H. Chokshi
9	Microstructural evolution strengthening and fracture in microwires	Science and Engineering Research Board (SERB), Department of Science and Technology, India	June 2015 – June 2018	Prof. A.H. Chokshi
10	Lightweight polymer nanocomposites for EMI Shielding	The Boeing Company, USA	December 2015 – December 2018	Prof. S. Bose
11	Titanium microstructural effects on low cycle fatigue	Pratt & Whitney, USA	April 2018- April 2021	Prof. D. Banerjee
12	Development of wrought Mg-Sn based alloy for automotive applications	Science and Engineering Research Board (SERB), Department of Science and Technology, India	March 2017 – March 2020	Prof. S. Kumar
13	Study of microstructure of similar dissimilar welds	Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam	December 2017 – December 2020	Prof. S. Kumar
14	3D printing of metallic orthopaedic implants	Uchhtar Avishkaar Yojana	Approved	Prof. K. Chatterjee
15	Development of Friction Stir Welding Technique for Joining Dissimilar Light Alloys	Indo-Russian Project, with Indian part from Department of Science and Technology (DST), India	October 2017 – October 2020	Prof. S.V. Kailas

• **Consultancy projects:**

SN	Title	Funding agency	Duration
1	Accumulative roll bonding of some copper base materials	Reliance Industries, Mumbai	6 months
2	Cold Spray Coatings- Fundamental Understanding of Severe Plastically Deformed structures (Co-consultant: Dr. Chandan Srivastava)	General Electric, India Technology Centre	1 year
3	Recrystallisation studies 0.2% carbon steel and 22 Mn B5 (Co-Consultant: Prof. S. Kumar)	Aisin Seiki Co., Ltd, Bangalore	6 Months

4	Evaluation of residual stress in striker shaft (Co-Consultant: Prof. S. Kumar)	Aisin Seiki Co., Ltd, Bangalore	6 Months
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- **Short term course organized**

Course	Sponsoring agency	Duration	Target group
<i>DST - SERC school on Texture and Microstructure</i>	Department of Science and Technology	1 week	Faculty and research scholars from NITs and other Govt. colleges, Scientists from National R&D labs
<i>SERB school on Mechanical testing of Materials</i>	Science and Engineering Research Board	10 days	Faculty and research scholars from NITs and other Govt. colleges, Scientists from National R&D labs
<i>CCE course on X-ray Diffraction and Applications</i> (Co-organizer: Prof. Rajeev Ranjan)	Centre for continuing Education, IISc	1 week	Faculty and research scholar from NITs and other Govt. colleges
<i>Course on Introduction to Texture and its applications</i>	Centre for continuing Education, IISc & Tata Steel, Jamshedpur	1 week	Researchers and Engineers of Tata Steel

- **Conference organized**

Sl. No.	Name of the International Conferences	Date	Location
1	<i>International Conference on Texture and Microstructure of Steels</i> ” held in Jamshedpur, INDIA (co-organised with Dr. A. Haldar and Dr. D. Bhattacharjee)	5-7 th February, 2008	Tata Steel, Jamshedpur
2.	<i>“International Conference on Texture of Materials (ICOTOM 16)”</i> (co-organised with Prof. I. Samajdar & team of IIT Bombay)	12-17 th December 2011	IIT, Bombay
3	<i>“International Conference on Strength of Materials (ICSMA-16)”</i> (co-organised with Profs. A.H. Chokshi and S. Karthikeyan of IISc, Bangalore)	19-24 th August 2012	IISc, Bangalore

4. *'International Conference on Texture of Materials (ICOTOM 2017)* 13th-15th Feb. 2017 IISc, Bangalore
5. *'Internnational Conference on Nanostructured Materials by Severe Plastic Deformation (Nano SPD8)'* 26th Feb. -3rd March, 2023 IISc, Bangalore
(co-organised with Prof. Praveen Kumar)

NRC-M PROJECTS

The Department of Materials Engineering at IISc has been granted the status of Networking Resource Centre for Materials by The University Grants Commission, Govt. of India. Under this program, the faculty members from IISc are expected to network with faculty members of Materials Departments of government colleges all across the country, and promote research in those institutions through collaborative research program. I have participated quite extensively in this program and initiated collaborative research activities in the following institutions:

Sl. No.	Date of Approval	Title of the Project	Institution	Name of the Faculty Collaborator
1	1-Jan-2009	Microstructure and Texture Dependence of Mechanical Properties in Some Magnesium Alloys	National Institute of Technology, Tiruchirappalli	Dr. S. Kumaran
2	22-Apr-2009	Effect of Processing Routes on Microstructures and Mechanical Properties of 2014 Al Alloy	National Institute of Technology, Tiruchirappalli	Dr. B. Ravisankar
3	6-Jul-2012	Effect of surface mechanical attrition (shot peening) on nitriding behavior of steels	College of Engineering, Pune	Dr. Santosh. S. Hosmani and Prof. M. J. Rathod
5	14-Sep-2012	Recrystallization Texture in CP Titanium	National Institute of Technology, Rourkela	Dr. S. K. Sahoo
6	1-Oct-2012	High Strain Rate Deformation Behaviour and Texture Study of Magnesium Based Alloys	National Institute of Technology, Raipur	Dr. Manoj Kumar Chopkar
7	1-Dec-2013	Influence of Ag and Sn on Microstructure and Texture in Al-Zn-Mg Alloys during Severe Plastic Deformation	Indian Institute of Engineering, Science & Technology, Shibpur	Dr. Manojit Ghosh
8	1-Mar-2014	A study of micro-texture and texture evolution in 2205 duplex stainless steel during deformation	Visveshwarai National Institute of Technology,	Dr. Rajesh K. Khatirkar

		and recrystallization	Nagpur	
9	29-Dec-2014	Microstructure of severe plastically deformed materials by X-ray line profile analysis and electron back scattered diffraction	University of Hyderabad	Dr. K.S. Suresh

Lectures delivered at NRC-M workshops

Sl. No.	Name of the workshop	Date	Title of the talk
1	NRC-M Workshop on Microstructural Engineering	25-30 May 2009	Issues pertaining to development of microstructure and texture during severe plastic deformation
2	NRC-M Summer Workshop on Structural Characterization Techniques in Materials Science	29 June - 17 July 2009	X-ray measurement of Texture
3	NRC-M Summer Workshop on Structural Characterization Techniques in Materials Science	29 June - 17 July 2009	X-ray measurement of residual stresses
4	NRC-M Summer Workshop on Structural Characterization Techniques in Materials Science	29 June - 17 July 2009	Quantitative calculations, other applications of X-ray diffraction
5	NRC-M Summer School in Mechanical Property Characterization	14 June - 2 July 2010	Role of microstructure on plastic Deformation
6	NRC-M Summer School in Mechanical Property Characterization	14 June - 2 July 2010	Analysis of data and extraction of materials properties; Instability and necking
7	NRC-M Summer Workshop on Structural Characterization Techniques in Materials Science	27 June - 14 July 2011	X-ray measurement of Texture
8	NRC-M Summer Workshop on Structural Characterization Techniques in Materials Science	27 June - 14 July 2011	X-ray measurement of residual stresses
9	NRC-M Workshop on X-Ray Diffraction Methods	26 – 31 December 2011	Texture analysis by X-ray diffraction
10	NRC-M Summer School in Mechanical Characterization	25 June - 14 July 2012	Role of microstructure on plastic deformation

11	NRC-M workshop on Scanning electron microscopy	17 – 21 December 2012	Electron back-scatter diffraction
12	NRC-M Workshop on Magnesium Alloys: Structure, Processing, Properties and Applications	5 – 6 May, 2014	Wrought processing
13	NRC-M Workshop on Severe Plastic Deformation and Bulk Nanostructure Materials	12-14 May, 2014	Grain refinement and other microstructural aspects in severe plastic deformation processes
14	NRC-M Workshop on Texture of Materials	15-19 February 2015	Introduction to texture
15	NRC-M Workshop on Texture of Materials	15-19 February 2015	Representation of texture

• ***Other administrative assignments (Recruitment / advisory board):***

Only the assignments outside the institute

- Member, Materials and Manufacturing panel of Aeronautics Research and Development Board (AR & DB), Ministry of Defence, Govt. of India.
- Member (co-opted) of the Young Scientist Committee in the area of Engineering Sciences, SERB, Department of Science and Technology, Govt. of India.
- Member of the Technical Advisory Group for ARCI's (Advanced Research Centre International (ARCI) for Powder Metallurgy and New Materials) Centre for Materials Characterisation and Testing, Department of Science and Technology, Govt. of India.
- Invited many times as subject expert for the selection of Scientists for *Defence Research and Development Organization* by *Recruitment and Assessment Council* (RAC), DRDO, Govt. of India, and for the promotion of Scientist working in *Department of Atomic Energy*, Govt. of India.
- Served as examiner for 35 Ph.D. thesis from the premier institutions of India and abroad

