

BIO-DATA

Dr. SUMANTRA MANDAL

Associate Professor

Department of Metallurgical and Materials Engineering

Indian Institute of Technology Kharagpur

Kharagpur, West Bengal – 721302, India

Tel: 03222-282878 (Off), 03222-60502 (Res)

Mobile: 7639498032

Email: sumantra.mandal@metal.iitkgp.ac.in

sumantra.mandal@gmail.com



Gender: Male

Date of Birth: 15th October, 1979

Institution's Address: Indian Institute of Technology Kharagpur
Kharagpur, West Bengal – 721302, India

Educational Qualifications

College/University	Subject	Graduation Date	Degree	Percentage/ Grade
Bengal Engineering College, Shibpur	Metallurgical Engineering	July, 2002	B.E.	79.51%
IIT Kanpur	Materials & Metallurgical Engineering	July, 2004	M.Tech	CPI 10/10
IIT Madras	Metallurgical & Materials Engineering	July, 2011	PhD	CGPA 9.25/10

Areas of Research

- Alloy Design and Development
- Grain Boundaries and Interfaces
- Microstructure Engineering
- Aqueous and High Temperature Corrosion
- Hot Deformation and Workability Studies
- Recrystallization and Grain Growth
- Constitutive Modeling
- Superplasticity
- Computational Materials Modeling
- Creep, Fatigue and Fracture

Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award.

- **Thesis title:** Studies on microstructural evolution during thermo-mechanical processing of austenitic stainless steel alloy D9
- **Guide's Name:** Dr. V. Subramanya Sarma
- **Institute/Organization/University:** IIT Madras
- **Year of Award:** July 2011

Academic/Research position Hold

Designation	Institute/Organization	From	To	Responsibility
Associate Professor	IIT Kharagpur	May, 2019	Till Now	Teaching & Research
Assistant Professor	IIT Kharagpur	Feb, 2015	April, 2019	Teaching & Research
Alexander von Humboldt fellow	Max-Planck-Institut fuer Eisenforschung, Germany	April, 2012	March, 2014	Research
Scientific Officer	IGCAR, Kalpakkam	Sep, 2004	Jan, 2015	Research

Research Guidance

- **Post-Doc:** Ongoing – 1 (Lipika Bairi)
- **PhD:** Completed – 1 (Sumanta K. Pradhan)
- **PhD:** Ongoing – 15 (Chandra Kant Kaithwas, Partha Duley (jointly), Yahya Hoque Mozumder, K. Arun Babu, Pallabi Bhuyan (jointly), Souriddha Sanyal (jointly), Sudipta Roy (Jointly), Suman Kumar, Rahul Rakshit (Jointly), Subhrajit Patnaik, Darothi Bairagi, Ranjeet Kumar, Subodh Das (Jointly), Kokkula Poornachander (Jointly), Dabarpan Ghosh, Roshan Kumar Jha, Sarojini Sahu (Jointly))
- **M. Tech:** Completed – 10 (Sumanta K. Pradhan, Chandrakesh Prasad, T.S. Prithiv, Suman Kumar, Ranjeet Kumar, Kiranbabu Srikakulapu, Venkataramana Munukuti, Subodh Das, Amaresh Mahapatra, Ajay Hadiya)
- **M. Tech:** Ongoing – 2 (Manikandan Muruganandam, Kuppili Padma Sri).
- **B. Tech/Dual degree:** Completed – 13 (Subhabrata Mandal, Mukesh Kumar, Sneha Tiguti, Surya Kant Ranjan, Nikhil Pingale, Jagannadh Sripada, Chandra Mohan Meena, Sarthak Kanodia, Omkar G. Gabhale, Shubham Gupta, Souvik Bhowmik, Ankit Kumar, Aditya Deshmukh).
- **B. Tech/Dual degree:** Ongoing – 1 (Tirtha Bodhak).

Publication List

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- **In Referred Journal:** 86
 - **Patent:** 02 (filed)
 - **In Edited Books:** 02
 - **Invited talk:** 11
 - **In Conference proceedings:** 13
 - **Conference presentation:** 19
 - **Citation Index - Total citations: 3417; h-index: 30 (as per Google Scholar database)**
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Article in Referred Journal

- (1) P. Duley, S. Sanyal, T.K. Bandyopadhyay, Sumantra Mandal, Implications of annealing treatments on microstructure, texture, and tensile properties of hard plate hot forged Mg-Zn-Ca-Mn (wt. %) alloy, *Materials Characterization*, 172 (2021) 110885.
- (2) S. Sanyal, O. Gabale, R. Saha, T.K. Bandyopadhyay and Sumantra Mandal, Microstructural evolution and its implications on the mechanical properties during age hardening in Mg-1Al-0.28Ca-0.13Mn-0.05Si alloy, *Journal of Alloys and Compounds*, 861 (2021) 158540.
- (3) D. Bairagi, M. Venkataramana, P. Bhuyan, R. Saha, Sumantra Mandal, Effect of spheroidized microstructure on the impact toughness and electrochemical performance of a high carbon steel, *Materials and Corrosion*, Accepted (2020).
- (4) A.K. Patra, C.N. Athreya, Sumantra Mandal, K.C. Hari Kumar, and V.S. Sarma, High strength-high ductility medium Mn steel obtained through CALPHAD based alloy design and thermomechanical processing, *Materials Science and Engineering A*, Accepted (2020).
- (5) S.K. Pradhan, P. Bhuyan, L.R. Bairi, and Sumantra Mandal, Comprehending the role of individual microstructural features on electrochemical response and passive film behaviour in type 304 austenitic stainless steel, *Corrosion Science*, 180 (2021) 109187.
- (6) S. Sanyal, M. Paliwal, T.K. Bandyopadhyay, and Sumantra Mandal, Evolution of microstructure, phases and mechanical properties in lean as-cast Mg-Al-Ca-Mn alloys under the influence of a wide range of Ca/Al ratio, *Materials Science and Engineering A*, 800 (2021) 140322.
- (7) C.K. Kaithwas, P. Bhuyan, and Sumantra Mandal, Assessing the potential of sparsely nucleated recrystallized grains to lead grain boundary engineering during extending annealing in Alloy 600H, *Materials Characterization*, 168 (2020) 110538.
- (8) Y.H. Mozumder, K. Arun Babu, and Sumantra Mandal, Compressive flow behaviour and deformation instabilities of Fe-Mn-Al-Ni-C lightweight duplex steel, *Transactions of the INAE*, 5 (2020) 465–474.
- (9) Y.H. Mozumder, K. Arun Babu, R. Saha, V.S. Sarma and Sumantra Mandal, Dynamic microstructural evolution and recrystallization mechanism during hot deformation of intermetallic-hardened duplex lightweight steel, *Materials Science and Engineering A*, 788 (2020) 139613. [IF: 4.652]
- (10) C.K. Kaithwas, P. Bhuyan, S.K. Pradhan and Sumantra Mandal, ‘Hall-Petch’ type of relationship between the extent of intergranular corrosion and grain size in a Ni-based superalloy, *Corrosion Science*, 175 (2020) 108868 [IF: 6.479].

- (11) K. Arun Babu, C.N. Athreya, Y.H. Mozumder, V.S. Sarma and **Sumantra Mandal**, A comprehensive study on texture development and twin related domain evolution following hot compression in a super austenitic stainless steel, *Metallurgical and Materials Transactions A*, 51 (2020) 3535-3551. [IF: 2.05]
- (12) P. Duley, S. Sanyal, T.K. Bandyopadhyay and **Sumantra Mandal**, Implications of grain size distribution, precipitate evolution and texture development on tensile properties in hard plate hot forged and annealed Mg-Zn-Ca-Mn alloy, *Materials Science and Engineering A*, 784 (2020) 139288. [IF: 4.652]
- (13) P. Bhuyan, K.V. Reddy, S.K. Pradhan, S. Pal, R. Mitra, **Sumantra Mandal**, A potential insight into the serration behaviour of $\Sigma 3^n$ ($n \leq 3$) boundaries in Alloy 617, *Materials Chemistry and Physics*, 248 (2020) 122919. [IF: 3.408]
- (14) A. Sarkar, S. Sanyal, T.K. Bandyopadhyay and **Sumantra Mandal**, Implications of microstructure, Taylor factor distribution and texture on tensile properties in a Ti-added Fe-Mn-Al-Si-C steel, *Materials Science and Engineering A*, 767 (2019) 138402. [IF: 4.652]
- (15) S.K. Pradhan, P. Bhuyan and **Sumantra Mandal**, Influence of individual microstructural parameters on pitting corrosion behaviour in type 304 austenitic stainless steel, *Corrosion Science*, 158 (2019) 108091. [IF: 6.479]
- (16) S. Sanyal, S. Kanodia, R. Saha, T.K. Bandyopadhyay, **Sumantra Mandal**, Influence of hard plate hot forging temperature on the microstructure, texture and mechanical properties in a lean Mg-Zn-Al alloy, *Journal of Alloys and Compounds*, 800 (2019) 343-354. [IF: 4.65]
- (17) K. Arun Babu, Y.H. Mozumder, R. Saha, V.S. Sarma and **Sumantra Mandal**, A systematic assessment of various stability/instability criteria in predicting the hot deformation related instabilities in super-304H stainless steel, *Journal of Materials Engineering & Performances*, 28 (2019) 4718-4730. [IF: 1.652]
- (18) P. Bhuyan, S.K. Pradhan, Rahul Mitra and **Sumantra Mandal**, Evaluating the efficiency of grain boundary serrations in attenuating high-temperature hot corrosion degradation in Alloy 617, *Corrosion Science*, 149 (2019) 164-177 [IF: 6.479]
- (19) A. Sarkar, S. Sanyal, T.K. Bandyopadhyay and **Sumantra Mandal**, Recrystallization behavior and tensile properties of Al-added medium-Mn-steel at different deformation-annealing conditions, *Materials Science and Technology*, 35 (2019) 2054-2068 [IF: 1.835]
- (20) C.N. Athreya, K. Deepak, Dong-Ik Kim, B. de Boer, **Sumantra Mandal**, and V.S. Sarma, Role of grain boundary engineered microstructure on high temperature steam oxidation behaviour of Ni based superalloy Alloy 617, *Journal of Alloys and Compounds*, 778 (2019) 224-233. [IF: 4.65]
- (21) P. Duley, S. Sanyal, T.K. Bandyopadhyay and **Sumantra Mandal**, Homogenization-induced age-hardening behavior and room temperature mechanical properties of Mg-4Zn-0.5Ca-0.16Mn (wt%) alloy, *Materials & Design*, 164 (2019) 107554. [IF: 6.289]
- (22) Y.H. Mozumder, K. Arun Babu, R. Saha, and **Sumantra Mandal**, Flow characteristics and hot workability studies of a Ni-containing Fe-Mn-Al-C lightweight duplex steel, *Materials Characterization*, 146 (2018) 1-14. [IF: 3.562]
- (23) C.K. Kaithwas, P. Bhuyan, S.K. Pradhan and **Sumantra Mandal**, Microstructure evolution during low-strain thermo-mechanical processing and its repercussion on intergranular corrosion in alloy 600H, *Materials Characterization*, 145 (2018) 582-593. [IF: 3.562]

- (24) K. Arun Babu, Y.H. Mozumder, R. Saha, V.S. Sarma and **Sumantra Mandal**, Hot-workability of super-304H exhibiting continuous to discontinuous dynamic recrystallization transition, *Materials Science and Engineering A*, 734 (2018) 269-280 [IF: 4.652]
- (25) N. Kisku, A. Sarkar, K.K. Ray and **Sumantra Mandal**, Development and characterization of a novel Ti modified high Si-medium Mn steel possessing ultra-high strength and reasonable ductility after hot rolling, *Journal of Materials Engineering & Performances*, 27 (2018) 4077- 4089. [IF: 1.652]
- (26) D. An, T.A Griffiths, P. Konijnenberg, **Sumantra Mandal**, Z. Wang and S. Zaefferer, Correlating the five parameter grain boundary character distribution and the intergranular corrosion behaviour of a stainless steel using 3D orientation microscopy based on mechanical polishing serial sectioning, *Acta Materialia*, 156 (2018) 297-309. [IF: 7.656]
- (27) S.K. Pradhan, P. Bhuyan and **Sumantra Mandal**, Individual and synergistic influences of microstructural features on intergranular corrosion behavior in extra-low carbon type 304L austenitic stainless steel, *Corrosion Science*, 139 (2018) 319-332. [IF: 6.479]
- (28) S. Roy, S. Biswas, K. Arun Babu and **Sumantra Mandal**, Phenomenological constitutive modeling of high temperature flow behavior incorporating individual and coupled effects of processing parameters in super-austenitic stainless steel, *Journal of Materials Engineering & Performances*, 27 (2018) 3762-3772. [IF: 1.652]
- (29) S.K. Pradhan, P. Bhuyan, C. Kaithwas and **Sumantra Mandal**, Strain-annealing-based grain boundary engineering to evaluate its sole implication on intergranular corrosion in extra-low-carbon type 304L austenitic stainless steel, *Metallurgical and Materials Transactions A*, 49 (2018) 2817–2831. [IF: 2.05]
- (30) C. Prasad, P. Bhuyan, C. Kaithwas, R. Saha and **Sumantra Mandal**, Microstructure engineering by dispersing nano-spheroid cementite in ultrafine-grained ferrite and its implications on strength-ductility relationship in high carbon steel, *Materials & Design* 139 (2018) 324-335. [IF: 6.289]
- (31) T.S. Prithiv, P. Bhuyan, S.K. Pradhan, V.S. Sarma and **Sumantra Mandal**, A critical evaluation on efficacy of recrystallization vs. strain induced boundary migration in achieving grain boundary engineered microstructure in a Ni-base superalloy, *Acta Materialia*, 146 (2018) 187-20. [IF: 7.656]
- (32) A. Sarkar, S. Sanyal, T.K. Bandyopadhyay and **Sumantra Mandal**, Influence of annealing parameters on phase evolution and recrystallization kinetics of a Mn-Al-Si alloyed duplex steel, *Materials Characterization*, 134 (2017) 213-224. [IF: 3.562]
- (33) S.K. Pradhan, T.S. Prithiv and **Sumantra Mandal**, Through-thickness microstructural evolution during grain boundary engineering type thermomechanical processing and its implication on sensitization behavior in austenitic stainless steel, *Materials Characterization*, 134 (2017) 134-142. [IF: 3.562]
- (34) A. Sarkar, S. Sanyal, T.K. Bandyopadhyay and **Sumantra Mandal**, Enhanced strength-ductility relationship in a medium Mn high Al-alloyed multicomponent steel through thermomechanical processing, *Materials Science and Engineering A*, 703 (2017) 205-213. [IF: 4.652]
- (35) K. Arun Babu and **Sumantra Mandal**, Regression based novel constitutive analyses to predict high temperature flow behavior in super austenitic stainless steel, *Materials Science and Engineering A*, 703 (2017) 187-195. [IF: 4.652]
- (36) S.K. Pradhan, **Sumantra Mandal**, C.N. Athreya, K.A. Babu, B. de Boer and V.S. Sarma, Influence of processing parameters on dynamic recrystallization and the associated annealing twin boundary

evolution in a nickel base superalloy, *Materials Science and Engineering A*, 700 (2017) 49-58. [IF: 4.652]

- (37) S. Goyal, Sumantra Mandal, P. Parameswaran, R. Sandhya, C.N. Athreya and K. Laha, A comparative assessment of fatigue deformation behavior of 316 LN SS at ambient and high temperature, *Materials Science and Engineering A*, 696 (2017) 407-415. [IF: 4.652]
- (38) K. Arun Babu, Sumantra Mandal, C.N. Athreya, B. Shakthipriya and V. Subramanya Sarma, Hot deformation characteristics and processing map of a phosphorous modified super austenitic stainless steel, *Materials & Design*, 115 (2017) 262-275. [IF: 6.289]
- (39) K. Arun Babu, Sumantra Mandal, A. Kumar, C.N. Athreya, B. de Boer and V.S. Sarma, Characterization of hot deformation behavior of alloy 617 through kinetic analysis, dynamic material modeling and microstructural studies, *Materials Science and Engineering A*, 664 (2016) 177-187. [IF: 4.652]
- (40) K. Deepak, Sumantra Mandal, C.N. Athreya, D.I. Kim, B. de Boer and V.S. Sarma, Implication of grain boundary engineering on high temperature hot corrosion of alloy 617, *Corrosion Science*, 106 (2016) 293-297. [IF: 6.479]
- (41) H. Zhang, K.G. Pradeep, Sumantra Mandal, D. Ponge, H. Springer and D. Raabe, Dynamic strain-induced transformation: An atomic scale investigation, *Scripta Materialia*, 109 (2015) 23-27. [IF: 5.079]
- (42) K. Shyam Swaroop, Sumantra Mandal, C.N. Athreya, B. de Boer and V.S. Sarma, Role of carbide precipitates and process parameters on achieving grain boundary engineered microstructure in a Ni-Based Superalloy, *Metallurgical and Materials Transactions A*, 46 (2015) 4740-4754. [IF: 2.05]
- (43) H. Zhang, K.G. Pradeep, Sumantra Mandal, D. Ponge and D. Raabe, New insights into the austenitization process of low-alloyed hypereutectoid steels: Nucleation analysis on strain-induced austenite transformation, *Acta Materialia*, 80 (2014) 296-308. [IF: 7.656]
- (44) Sumantra Mandal, M. Jayalakshmi, A.K. Bhaduri and V.S. Sarma, Effect of strain rate on dynamic recrystallization behaviour in a nitrogen enhanced 316L(N), *Metallurgical and Materials Transactions A*, 45 (2014) 5645-5656. [IF: 2.05]
- (45) Sumantra Mandal, K.G. Pradeep, S. Zaefferer and D. Raabe, A novel approach to measure grain boundary segregation in bulk polycrystalline materials in dependence of the boundaries' five rotational degrees of freedom, *Scripta Materialia*, 81 (2014) 16-19. [IF: 5.079]
- (46) D. Samantaray, Sumantra Mandal, M. Jayalakshmi, C.N. Athreya, A.K. Bhaduri and V.S. Sarma, New insights into the relationships between dynamic softening phenomena and efficiency of hot working domains of a nitrogen enhanced 316L(N) stainless steel, *Materials Science and Engineering A*, 598 (2014) 368-375. [IF: 4.652]
- (47) H. Zhang, K.G. Pradeep, Sumantra Mandal, D. Ponge, P. Choi, C.C. Tasan and D. Raabe, Enhanced superplasticity in an Al-alloyed multicomponent Mn-Si-Cr-C steel, *Acta Materialia*, 63 (2014) 232-244. [IF: 7.656]
- (48) A.K. Bhaduri, D. Samantaray and Sumantra Mandal, Thermo-mechanical processing and process modeling of power plant materials, *International Journal of Metallurgical Engineering*, 2 (2013) 85-91.

- (49) D. Samantaray, C. Phaniraj, A.K. Bhaduri, **Sumantra Mandal** and S.K. Albert, Resisting stress for constitutive analysis in modified 9Cr-1Mo (P91) steel, **Materials Science and Engineering A**, 560 (2013) 170 - 177. [IF: 4.652]
- (50) D. Samantaray, **Sumantra Mandal**, Vinod Kumar, S.K. Albert, A.K. Bhaduri and T. Jayakumar, Optimization of processing parameters based on high temperature flow behavior and microstructural evolution of a nitrogen enhanced 316L(N) stainless steel, **Materials Science and Engineering A**, 552 (2012) 236 – 244. [IF: 4.652]
- (51) D. Samantaray, **Sumantra Mandal**, S.K. Albert, A.K. Bhaduri and T. Jayakumar, Thermally activated deformation of a high-nitrogen grade 316L(N) stainless steel under compressive loading, **Materials Science Forum**, 710 (2012) 477 – 482.
- (52) **Sumantra Mandal**, A.K. Bhaduri and V.S. Sarma, Origin and role of $\Sigma 3$ boundaries during thermo-mechanical processing of a Ti-modified austenitic stainless steel, **Materials Science Forum**, 702-703 (2012) 714-717.
- (53) **Sumantra Mandal**, A.K. Bhaduri and V.S. Sarma, Influence of state-of-stress on dynamic recrystallization in a Ti modified austenitic stainless steel, **Metallurgical and Materials Transactions A**, 43 (2012) 410 – 414. [IF: 2.05]
- (54) **Sumantra Mandal**, A.K. Bhaduri and V.S. Sarma, Role of twinning on dynamic recrystallization and microstructure during moderate to high strain rate hot deformation of a Ti modified austenitic stainless steel, **Metallurgical and Materials Transactions A**, 43 (2012) 2056 -2068.
- (55) **Sumantra Mandal**, A.K. Bhaduri, Baldev Raj and V.S. Sarma, Dynamic recrystallization during isothermal hot deformation in a titanium modified austenitic stainless steel, **Materials Science Forum**, 715-716 (2012) 140-145.
- (56) D. Samantaray, **Sumantra Mandal**, C. Phaniraj and A.K. Bhaduri, Flow behaviour and microstructural evolution during hot deformation of AISI Type 316L(N) austenitic stainless steel, **Materials Science and Engineering A**, 528 (2011) 8565 – 8572. [IF: 4.652]
- (57) C. Phaniraj, D. Samantaray, **Sumantra Mandal** and A.K. Bhaduri, A new relationship between the stress multipliers of Garofalo equation for constitutive analysis of hot deformation in modified 9Cr–1Mo (P91) steel, **Materials Science and Engineering A**, 528 (2011) 6066–6071. [IF: 4.652]
- (58) D. Samantaray, **Sumantra Mandal** and A.K. Bhaduri, Optimization of hot working parameters for thermo-mechanical processing of modified 9Cr-1Mo (P91) steel employing Dynamic Materials Model, **Materials Science and Engineering A**, 528 (2011) 5204 - 5211. [IF: 4.652]
- (59) D. Samantaray, **Sumantra Mandal** and A.K. Bhaduri, A critical comparison of various data processing methods in simple uni-axial compression testing, **Materials and Design**, 32 (2011) 2797 – 2802. [IF: 6.289]
- (60) D. Samantaray, **Sumantra Mandal**, A.K. Bhaduri, S. Venugopal and P.V. Sivaprasad, Analysis and mathematical modeling of elevated temperature flow behaviour of austenitic stainless steels, **Materials Science and Engineering A**, 528 (2011) 1937 – 1943. [IF: 4.652]
- (61) **Sumantra Mandal**, A.K. Bhaduri and V.S. Sarma, One-step and iterative thermo-mechanical treatments to enhance $\Sigma 3^n$ boundaries in a titanium-modified austenitic stainless steel, **Journal of Materials Science**, 46 (2011) 275 – 284. [IF: 3.553]

- (62) D. Samantaray, C. Phaniraj, **Sumantra Mandal** and A.K. Bhaduri, Strain dependent rate equation to predict elevated temperature flow behaviour of modified 9Cr–1Mo (P91) steel, **Materials Science and Engineering A**, 528 (2011) 1071 – 1077. [IF: 4.652]
- (63) **Sumantra Mandal**, A.K. Bhaduri and V.S. Sarma, A study on microstructural evolution and dynamic recrystallization during isothermal deformation of a Ti-modified austenitic stainless steel, **Metallurgical and Materials Transactions A**, 42 (2011) 1062 - 1072. [IF: 2.05]
- (64) D. Samantaray, **Sumantra Mandal** and A.K. Bhaduri, Characterization of deformation instability in modified 9Cr-1Mo steel during thermo-mechanical processing, **Materials and Design**, 32 (2011) 716–722. [IF: 6.289]
- (65) **Sumantra Mandal**, A.K. Bhaduri and V.S. Sarma, Grain boundary engineering in alloy D9 through thermo-mechanical processing: influence of process variables and aspects of micro-mechanisms, **Int. Journal of Advances in Eng Sciences and Applied Math.**, 2 (2010) 149 – 160.
- (66) D. Samantaray, **Sumantra Mandal**, A.K. Bhaduri and P.V. Sivaprasad, An overview on constitutive modelling to predict elevated temperature flow behaviour of fast reactor structural materials, **Transaction of the Indian Institute of Metals**, 63 (2010) 823–831. [IF: 1.205]
- (67) D. Samantaray, **Sumantra Mandal** and A.K. Bhaduri, Constitutive analysis to predict high temperature flow stress in modified 9Cr-1Mo (P91) steel, **Materials and Design**, 31 (2010) 981–984. [IF: 6.289]
- (68) **Sumantra Mandal**, P.V. Sivaprasad and V.S. Sarma, Dynamic recrystallization in a Ti modified austenitic stainless steel during high strain rate deformation, **Materials and Manufacturing Processes**, 25 (2010) 54-59. [IF: 3.046]
- (69) D. Samantaray, **Sumantra Mandal** and A.K. Bhaduri, A comparative study on Johnson-Cook, modified Zerilli-Armstrong and Arrhenius type constitutive model to predict elevated temperature flow behaviour in modified 9Cr-1Mo steel, **Computational Materials Science**, 47 (2009) 568–576. [IF: 2.863]
- (70) D. Samantaray, **Sumantra Mandal**, U. Borah, A.K. Bhaduri and P.V. Sivaprasad, A thermo-viscoplastic constitutive model to predict elevated temperature flow behaviour in a titanium modified austenitic stainless steel, **Materials Science and Engineering A**, 526 (2009) 1–6. [IF: 4.652]
- (71) K.V.S. Ramana, T. Anita, **Sumantra Mandal**, S. Kaliappan, H. Shaikh, P.V. Sivaprasad, R.K. Dayal and H.S. Khatak, Effect of different environmental parameters on the pitting behavior of AISI Type 316L stainless steel: Experimental studies and neural network modeling, **Materials and Design**, 30 (2009) 3770 – 3775. [IF: 6.289]
- (72) **Sumantra Mandal**, A.K. Bhaduri and V.S. Sarma, Studies on twinning and grain boundary character distribution during anomalous grain growth in a Ti-modified austenitic stainless steel, **Materials Science and Engineering A**, 515 (2009) 134 – 140. [IF: 4.652]
- (73) **Sumantra Mandal**, V. Rakesh, P.V. Sivaprasad, S. Venugopal and K.V. Kasiviswanathan, Constitutive equations to predict high temperature flow stress in a Ti-modified austenitic stainless steel, **Materials Science and Engineering A**, 500 (2009) 114 – 121. [IF: 4.652]
- (74) **Sumantra Mandal**, P.V. Sivaprasad, P. Barat and Baldev Raj, An overview of neural network based modeling in alloy design and thermo-mechanical processing of austenitic stainless steels, **Materials and Manufacturing Processes**, 24 (2009) 219 – 224. [IF: 3.046]

- (75) **Sumantra Mandal**, P.V. Sivaprasad, S. Venugopal and K.P.N. Murthy, Artificial neural network modeling to evaluate and predict the deformation behavior of stainless steel type AISI 304L during hot torsion, **Applied Soft Computing**, 9 (2009) 237 – 244. [IF: 5.472]
- (76) **Sumantra Mandal**, S.K. Mishra, A. Kumar, I. Samajdar, P.V. Sivaprasad, T. Jayakumar and Baldev Raj, Evolution and characterization of dynamically recrystallized microstructure in a Ti modified austenitic stainless steel using ultrasonic and EBSD techniques, **Philosophical Magazine**, 88 (2008) 883 – 897. [IF: 1.778]
- (77) **Sumantra Mandal**, P.V. Sivaprasad, Baldev Raj and V.S. Sarma, Grain boundary microstructural control through thermo-mechanical processing in a Titanium modified austenitic stainless steel, **Metallurgical and Materials Transactions A**, 39 (2008) 3298 – 3307. [IF: 2.05]
- (78) **Sumantra Mandal**, P.V. Sivaprasad, S. Venugopal, K.P.N. Murthy and Baldev Raj, Artificial neural network modeling of composition – process – property correlations in austenitic stainless steels, **Materials Science and Engineering A**, 485 (2008) 571 – 580. [IF: 4.652]
- (79) **Sumantra Mandal**, P.V. Sivaprasad and R.K. Dube, Modeling microstructural evolution during dynamic recrystallization of Alloy D9 using artificial neural network, **Journal of Materials Engineering & Performances**, 16 (2007) 672-679. [IF: 1.652]
- (80) **Sumantra Mandal**, P.V. Sivaprasad and R.K. Dube, Kinetics, mechanism and modeling of microstructural evolution during thermo-mechanical processing of a 15Cr-15Ni-2.2Mo-Ti modified austenitic stainless steel, **Journal of Materials Science**, 42 (2007) 2724-2734. [IF: 3.553]
- (81) **Sumantra Mandal**, A. Kumar, P.V. Sivaprasad, T. Jayakumar and Baldev Raj, Characterization of microstructural evolution during thermo-mechanical processing of a 15Cr-15Ni-2.2Mo-Ti modified austenitic stainless steel using ultrasonic measurements, **Materials Science and Technology**, 23 (2007) 1381-1386. [IF: 1.835]
- (82) **Sumantra Mandal**, P.V. Sivaprasad and S. Venugopal, Capability of a feed-forward artificial neural network to predict the constitutive flow behavior of as cast 304 stainless steel under hot deformation, **Journal of Engineering Materials and Technology (Transaction of the ASME)**, 129 (2007) 242-247. [IF: 1.144]
- (83) **Sumantra Mandal**, P.V. Sivaprasad, R.K. Dube and Baldev Raj, Kinetics, mechanism and modeling of microstructural evolution during dynamic recrystallization of a 15Cr-15Ni-2.2Mo-Ti modified austenitic stainless steel (*Paper presented at the International Symposium on Fundamentals of Deformation and Annealing, Manchester, UK, September 4-7, 2006*), **Materials Science Forum**, 550 (2007) 601-606.
- (84) **Sumantra Mandal**, P.V. Sivaprasad, K.P.N. Murthy and Baldev Raj, Modeling the hot deformation behavior of a 15Cr-15Ni-2.2Mo-Ti modified austenitic stainless steel using artificial neural network, **Metals Materials and Processes**, 18 (2006) 159-170.
- (85) P.V. Sivaprasad, **Sumantra Mandal**, S. Venugopal, C. Narayanan, V. Shanmugam and Baldev Raj, Artificial neural network modeling of the tensile properties of indigenously developed 15Cr-15Ni-2.2Mo-Ti modified austenitic stainless steel, **Transaction of the Indian Institute of Metals**, 59 (2006) 437-445. [IF: 1.205]
- (86) **Sumantra Mandal**, P.V. Sivaprasad, S. Venugopal and K.P.N. Murthy, Constitutive flow behavior of austenitic stainless steels under hot deformation: Artificial neural network modeling to understand, evaluate and predict, **Modelling and Simul. Mater. Sci. Eng.**, 14 (2006) 1053 -1070. [IF: 1.874]

Patent List

- (1) S. Kumar, A. Sarkar, T.K. Bandyopadhyay, S. Mukherjee and **Sumantra Mandal**, Nickel containing medium manganese steel and the method of production thereof, *Indian Patent*, Ref No: 201931021155, Application Number: TEMP/E-1/22298/2019-KOL (Filed).
- (2) S. Kumar, A. Sarkar, D. Nayak, T.K. Bandyopadhyay and **Sumantra Mandal**, Ni modified low alloy high strength steel and a process to produce the same, *Indian Patent*, Ref No: 202031012312, Application Number: TEMP/E-1/13381/2020-KOL (Filed).

In Edited Books:

- (1) **Sumantra Mandal**, P.V. Sivaprasad and V.S. Sarma, Microstructural modification in a 15Cr-15Ni-2.2 Mo-Ti modified austenitic stainless steel through twin Induced grain boundary engineering, In: **Applications of Texture Analysis**, Ed. A. Rollett, (NJ, USA: John Wiley & Sons), (2008) 313-321.
- (2) **Sumantra Mandal**, S. Kumar, A. Kumar, P.V. Sivaprasad, I. Samajdar, T. Jayakumar and Baldev Raj, A new methodology based on ultrasonic attenuation to characterize dynamically recrystallized microstructure in a 15Cr-15Ni-2.2Mo-Ti modified austenitic stainless steel, In: **Advances in Stainless Steels**. Eds. Baldev Raj, K.B.S. Rao, T. Jayakumar, P.V. Sivaprasad, S. Saibaba and P. Shankar (India: University Press), (2009) 125-133.

Invited Talks:

- (1) "Modification of grain boundary character distribution through thermo-mechanical processing: Approach, mechanisms and implication on property" delivered (online) at faculty development programme (FDP) on '*Advances in Thermo-mechanical Processing of Materials (ATPM-2020)*' December 14 – 18, 2020, Organized by Department of Metallurgy and Materials Science, College of Engineering, Pune, India.
- (2) "Aluminium added low-density advanced high strength steel for automotive application" delivered at TEQIP-III Sponsored One-Week online FDP on "*Current Scenario on Steel Research*" (*CSSR-2020*), September 7-11, 2020, Organized by Department of Metallurgical and Material Engineering, Veer Surendra Sai University of Technology (VSSUT), Burla, Odisha, India.
- (3) "Implication of grain boundary networks and morphology on aqueous and high temperature hot corrosion", delivered *through online mode*, April 10, 2020, **Tata Steel**, Jamshedpur, India
- (4) "Tailoring microstructure to alleviate aqueous and high temperature hot corrosion in structural materials" delivered at *12th Asia-Pacific Microscopy Conference (APMC-2020)*, February 3-7, 2020 at Hyderabad International Convention Centre, Hyderabad, India.
- (5) "Influence of microstructural features on high temperature hot corrosion (HTHC) in Alloy 617", delivered at *International conference on Advanced Materials and Processes for Defence Applications (ADMAT 2019)*, September 23-25, 2019 at Hyderabad, India.
- (6) Delivered at *International Conference on Tailoring Grain Orientation-Processing and Applications (ICTGO 2K19)*, March 28-29, 2019, at Indian Institute of Engineering Science and Technology, Shibpur, Kolkata, India.
- (7) "Grain boundary microstructural control in austenitic stainless steels: Approach, Mechanism and Applications", delivered at *Workshop on Advanced Methods in Characterisation of Texture and*

Microtexture of Materials, November 25-26, 2010 at SRI Convention Centre, Anupuram, Tamil Nadu, India.

- (8) “Thermo-mechanical Processing of Alloy D9: Aspects of Evolution, Characterization and Modification of Microstructure”, delivered at **63rd Annual Technical Meeting of Indian Institute of Metals**, November 16 - 17, 2009 at Science City Complex, Kolkata, India.
- (9) “Study on microstructural evolution during dynamic recrystallization in a titanium modified austenitic stainless steel using Electron Back-Scattered Diffraction technique” delivered at **4th National Symposium on Frontiers of Engineering (NatFOE 4)**, September 16-17, 2009 at SRI Convention Centre, Anupuram, Tamil Nadu, India.
- (10) “Evolution and characterization of microstructure during industrial scale thermo-mechanical processing of alloy D9”, delivered at **INAE Academy Annual Convention**, December 7, 2007 at Research Centre IMARAT, Hyderabad. India.
- (11) “Grain boundary and interfacial engineering: current status, application and future directions,” delivered at **Materials Advantage Chapter** at IIT Madras, January, 2007, Chennai, India.

Conference Proceedings:

- (1) **Sumantra Mandal**, V. Maduraimuthu, R. Nagarajan, S. Venugopal, P.V. Sivaprasad and R.K. Dube, Grain size prediction in 15Cr-15Ni-2.3Mo-Ti modified austenitic stainless steel during thermo-mechanical processing using Artificial Neural Network, Proceedings of the **International Conference on Thermo-Mechanical Simulation and Processing of Steels (SimPro'04)** at Ranchi, India, September 2004, 99-105.
- (2) **Sumantra Mandal**, P.V. Sivaprasad and R.K. Dube, Hot working and modelling of the resulting microstructure of D9 stainless steel using artificial neural network, Proceedings of the **International Symposium of Research Students (ISRS-2004) on Material Science and Engineering** at IIT Chennai, India, December 2004.
- (3) **Sumantra Mandal**, P.V. Sivaprasad, K.P.N. Murthy and Baldev Raj, Modeling constitutive behaviour of a 15Cr-15Ni-2.2Mo-Ti modified austenitic stainless steel under hot compression using artificial neural network, Proceedings of the **International Conference on Statistical Mechanics of Plasticity and Related Instabilities** at IISC Bangalore, India, August 2005, POS(SMPRI 2005)059.
- (4) **Sumantra Mandal**, P.V. Sivaprasad and S. Venugopal, Prediction of flow stress of austenitic stainless steels under hot compression using artificial neural network, Proceedings of the **International Workshop on Neural Network and Genetic Algorithm in Materials Science and Engineering (NGMS-2006)** at BESU Shibpur, India, January 2006, 425-438.
- (5) **Sumantra Mandal**, P.V. Sivaprasad, S. Venugopal and K.P.N. Murthy, Capability of a feed-forward artificial neural network to predict constitutive behaviour of type 304L stainless steel during hot torsion, Proceedings of the **International Workshop on Neural Network and Genetic Algorithm in Materials Science and Engineering (NGMS-2006)** at BESU Shibpur, India, January 2006, 370-384.
- (6) **Sumantra Mandal**, P.V. Sivaprasad and K.P.N. Murthy, Modelling the correlation between chemical composition and tensile properties in a 15Cr-15Ni-2.2Mo-Ti modified austenitic stainless steel using artificial neural network, Proceedings of the **International Workshop on Neural Network and Genetic Algorithm in Materials Science and Engineering (NGMS-2006)** at BESU Shibpur, India, January 2006, 385-396.

- (7) **Sumantra Mandal**, V.S. Sarma, V. Maduraimuthu and P.V. Sivaprasad, Optimization of grain boundary character distribution in a 15Cr-15Ni-2.2Mo-Ti modified austenitic stainless steel through thermo-mechanical processing: Grain boundary engineering approach, Proceedings of the **International Symposium of Research Scholars (ISRS-2006) on Material Science and Engineering** at IIT Chennai, India, December 2006, 129-134.
- (8) D. Samantaray, U. Borah, **Sumantra Mandal**, P.V. Sivaprasad, I. Samajdar, and T. Jayakumar, Finite element simulation of coupled thermo-mechanical hot upsetting process of alloy D9, Proceedings of the **International Conference on Advance Manufacturing Technology (ICAMT-2008)** at IIT Chennai, India, February 2008.
- (9) **Sumantra Mandal**, P.V. Sivaprasad, Baldev Raj and V.S. Sarma, Characterization of hot deformed microstructure in a Ti-modified austenitic stainless steel, Proceedings of the **TMS 2009 Annual Meeting and Exhibition** at San Francisco, USA, February 16 -19, 2009, 167 -174.
- (10) D. Samantaray, **Sumantra Mandal**, C. Phaniraj and A.K. Bhaduri, Flow behaviour and microstructural evolution during thermo–mechanical processing of 316L(N) austenitic stainless steel. Proceedings of the **20th Annual Conference of Indian Nuclear Society (INSAC 20)**, Chennai, India, January 2010, 913 – 919.
- (11) Baldev Raj, T. Jayakumar, A.K. Bhaduri and **Sumantra Mandal**, Development of materials and manufacturing technologies for Indian fast reactor programme, Proceedings of the **9th Liège Conference on Materials for Advanced Power Engineering** at Liège, Belgium, September 2010.
- (12) D. Samantaray, **Sumantra Mandal** and A.K. Bhaduri, Characterization of intrinsic workability of modified 9Cr-1Mo steel during warm and hot working: A study using Dynamic Materials Model approach, Proceedings of the **International Conference on World class Materials and Manufacturing Technologies**, Mumbai, March 2011.
- (13) S.K. Pradhan and **Sumantra Mandal**, Grain boundary character modification employing thermo-mechanical processing in type 304L stainless steel, **IOP Conference Series: Materials Science and Engineering** 115 (2016) 012032.

Papers presented in conferences but not published:

- (1) S. Das, S. Sanyal, A. Varma, P. Halder, Y. Ravi Kumar, and **Sumantra Mandal**, Oxide scale study in reheater tube of a super critical thermal power plant, National Conference on AUSC Technology (AUSC 2019), ITC Kakatiya, Hyderabad. India October 30-31, 2019.
- (2) S. Sanyal, S. Kanodia, R. Saha, T.K. Bandyopadhyay, and **Sumantra Mandal**, Structure-property relationship in a thermomechanically processed Mg-Zn-Al alloy, **European congress and exhibition on advanced materials and processes (EUROMAT 2019)**, Stockholm, Sweden, September 1-5, 2019
- (3) P. Bhuyan, S.K. Pradhan, R. Mitra, and **Sumantra Mandal**, Grain boundary serrations: An effective approach to mitigate high-temperature hot corrosion in Inconel 617, **European congress and exhibition on advanced materials and processes (EUROMAT 2019)**, Stockholm, Sweden, September 1-5, 2019
- (4) A. Sarkar, S. Sanyal, **Sumantra Mandal** and T.K. Bandyopadhyay, Tailoring the strength-ductility relationship of Ti-modified and Nb-modified medium Mn multicomponent steel through its microstructural and texture evolution, **72nd Annual Technical Meeting of Indian Institute of Metals**, Kolkata, West Bengal, India, November 15-16, 2018.

- (5) A. Sarkar, S. Sanyal, **Sumantra Mandal** and T.K. Bandyopadhyay, Effect of Ti and Nb on the microstructure, texture and tensile properties of Al added low density medium Mn steel, **Materials Science & Technology Conference & Exhibition - MS&T 2018**, Columbus, Ohio, USA, October 14-18, 2018.
- (6) A. Sarkar, S. Sanyal, **Sumantra Mandal** and T.K. Bandyopadhyay, Trade-off between strength and ductility by variation in microstructural features and recrystallization kinetics of medium Mn multicomponent alloy, **Materials Science & Technology Conference & Exhibition - MS&T 2018**, Columbus, Ohio, USA, October 14-18, 2018.
- (7) Yahya H. Mozumder, K. Arun Babu, R. Saha and **Sumantra Mandal**, Deformation behaviour of low-density Fe-Mn-Al-Ni-C duplex steel based on processing map, activation energy and microstructural evolution, **European Materials Research Society (EMRS), Spring Meeting-2018**, Strasbourg, France, June 8-22, 2018
- (8) C.K. Kaithwas, P. Bhuyan, S.K. Pradhan, and **Sumantra Mandal**, Grain boundary engineering through thermo-mechanical processing and its implication on sensitization in alloy 600H, **TMS 2018 Annual Meeting & Exhibition**, Phoenix, Arizona, USA, March 11-15, 2018
- (9) P. Duley, S. Sanyal, T.K. Bandyopadhyay, and **Sumantra Mandal**, Development and characterization of Mg-4Zn-0.5Ca-0.16 Mn (wt. %) alloy for biomedical applications, **TMS 2018 Annual Meeting & Exhibition**, Phoenix, Arizona, USA, March 11-15, 2018.
- (10) C.K. Kaithwas, P. Bhuyan, S.K. Pradhan, and **Sumantra Mandal**, Effect of grain boundary engineering on the susceptibility to intergranular corrosion evaluated through optimized DL-EPR test in alloy 600H, **71st Annual Technical Meeting of Indian Institute of Metals**, BITS Pilani, Goa, India, November 11-14, 2017
- (11) A. Sarkar, S. Sanyal, **Sumantra Mandal** and T.K. Bandyopadhyay, Influence of Nb and Ti on the structure-property relationship of Fe-Mn-Al-Si-C low density steel, **71st Annual Technical Meeting of Indian Institute of Metals**, BITS Pilani, Goa, India, November 11-14, 2017
- (12) A. Sarkar, S. Sanyal, **Sumantra Mandal** and T.K. Bandyopadhyay, Recrystallization behavior of Al-added low density medium Mn steel, **TMS 2018 Annual Meeting & Exhibition**, San Diego, USA, February 26- March 2, 2017.
- (13) **Sumantra Mandal** and P.V. Sivaprasad, Modelling of radiation damage in austenitic stainless steels, **Advanced school on Materials for Generation-IV nuclear reactor (MATGEN - IV)**, IESC Cargese, Corsica, France, September 24 – October 6, 2007.
- (14) D. Samantaray, U. Borah, **Sumantra Mandal** and P.V. Sivaprasad, Thermo-viscoplastic constitutive relationships for flow stress prediction in a Titanium modified austenitic stainless steel, Presented in **62nd Annual Technical Meeting of Indian Institute of Metals**, New Delhi, India, November 15 – 16, 2008.
- (15) D. Samantaray, **Sumantra Mandal** and A.K. Bhaduri, Optimization of processing parameters for hot working of modified 9Cr-1Mo steel using processing map, Presented in **63rd Annual Technical Meeting of Indian Institute of Metals**, Kolkata, India, November 16 – 17, 2009.
- (16) **Sumantra Mandal**, D. Samantaray, C. Phaniraj and A.K. Bhaduri, Hot forging of 316L(N) austenitic stainless steel: Aspects of constitutive modelling and microstructural evolution, Presented in **64th Annual Technical Meeting of Indian Institute of Metals**, IISc Bangalore, India, November 15 - 16, 2010.

- (17) T. Jayakumar, **Sumantra Mandal**, S. Saroja and S.K. Albert, Processing of special materials for fast and fusion reactor applications, Presented during the **Faculty Development Programme on "Emerging Trends in Synthesis and Characterisation of Materials,"** BHU, Varanasi, India, December 6 – 12, 2010.
- (18) T. Jayakumar, **Sumantra Mandal**, S. Saroja and M.D. Mathew, In-core materials for present and future Indian fast breeder reactors: A chronological evolution, Presented in **Advances in Nuclear Materials (ANM-2011)**, Mumbai, India, February 9 – 11, 2011.
- (19) A.K. Bhaduri, **Sumantra Mandal** and S.K. Albert, Issues on selection and development of boiler materials for India's Advanced USC programme, Presented in **8th Indo-German Theme Meeting on Advanced Power Plant Materials**, IGCAR, Kalpakkam, India, February 16 – 17, 2011

List of Projects Undertaken (Ongoing/Completed)

Sl.	Title of the proposal	Funding Agency	Amount	Current status	Role
1	Grain boundary engineering in a nickel based superalloy: Influence of process variables, aspects of micro-mechanisms and implication on intergranular corrosion	ISIRD, IIT Kharagpur	28 Lakhs	Completed (2015 - 2018)	PI
2	Synergistic influence of five parameter grain boundary character, grain size and grain boundary network connectivity on intergranular corrosion behavior in a typical low stacking fault energy face centered cubic alloy system	Indian National Science Academy	15 Lakhs	Completed (2016 - 2019)	PI
3	Setting up high-end testing facilities of materials for Biomaterials, Aerospace and Automotive applications	SDGRI, SRIC, IIT Kharagpur	250 Lakhs	Completed (2016 - 2019)	CI
4	Microstructure engineering to enhance resistance against creep and high temperature hot corrosion in a Ni-based superalloy	SERB, DST	47.28 Lakhs	Completed (2016 - 2019)	PI
5	Modelling of oxidation and exfoliation of oxide in grade T91 steel	NTPC, New Delhi	29.03 Lakhs	Completed (2018 - 2019)	PI
6	Development of high performance materials for various defence related applications	DMRL, DRDO	442.45 Lakhs	Ongoing (2019 - 2022)	CI

7	Hydrogen embrittlement in high strength steels for energy industries: Assessment and Prevention	SERB, DST	59.53 Lakhs	Ongoing (2019 - 2022)	CI
8	Development of new correlative characterization techniques for microstructure, nano-precipitates, texture (using Taylor factor distribution) in a model alloy	Tata Steel Ltd.	18.41 Lakhs	Ongoing (2019 - 2021)	PI
9	Role of special boundaries on hydrogen permeation in medium Mn steel	Tata Steel Ltd.	25.49 Lakhs	Ongoing (2019 - 2021)	PI
10	Grain Boundary and Magnetic Domain Interaction in Oriented Bulk Magnetostrictive Fe-Ga alloy	Naval Research Board	34.61 Lakhs	Ongoing (2020 - 2023)	PI
11	Investigation of Corrosion and Passive Film Behaviour of Stainless Steel and Carbon Steel Container in Concrete Pore Solution along with Geological Media for Long Term Stability of Nuclear Waste Package during Geological Disposal	SERB, NPDF	19.20 Lakhs	Ongoing (2021 - 2022)	PI

Awards & Honours Received

International and National Awards:

- **Top 2% Global Scientists, as per Research Publications Output in 2019**
Featured among top 2% global scientists, as per research publications output in 2019, in an article by a famous analyst group of Stanford University, published in the journal of PLOS Biology
- **Institute Faculty Excellence Award**
Awarded by IIT Kharagpur in the year 2018 for significant contribution in teaching, research and institutional developments
- **INSA Medal for Young Scientist**
Awarded by Indian National Science Academy (INSA) in the year 2013
- **Young Associate of INAE**
Selected as 'Young Associate' of Indian National Academy of Engineering (INAE) from the year 2013
- **Sudharshan Bhat Memorial Prize**
For the best thesis in PhD in Metallurgical & Materials Engineering, IIT Madras in the year 2011
- **IEI Young Engineers Award**

Received 'IEI Young Engineers Award 2011-2012' in Metallurgical and Materials Engineering discipline from The Institution of Engineers (India)

- **Top Cited Author 2011**

Recognized as a 'top cited author 2011' by the Elsevier publisher (for the journal *Materials Science and Engineering: A*) for the paper entitled "Constitutive equations to predict high temperature flow stress in a Ti-modified austenitic stainless steel", *Materials Science and Engineering A*, 500 (2009) 114 – 121

- **Young Metallurgist of the year Award**

'2009 Young Metallurgist of the year' award in 'Ferrous Category' from Ministry of Steel, Govt. of India

- **Associateship of the Indian Academy of Sciences**

Selected as an Associate of the Indian Academy of Sciences in the year 2009

- **TMS Shri Ram Arora International Award**

Received '2009 Shri Ram Arora Award for Materials Science and Engineering Education' from 'The Minerals, Metals and Materials Society (TMS), USA'

- **DAE Young Engineer Award**

Awarded by Department of Atomic Energy (DAE), India in the year 2007

- **INAE Young Engineer Award**

Awarded by Indian National Academy of Engineering (INAE), India in the year 2007

Fellowship:

- **Alexander von Humboldt Fellowship for Post-doctoral Researchers**

Awarded by Alexander von Humboldt foundation in the year 2011 to pursue post-doctoral research at Max-Planck-Institut fuer Eisenforschung, Duesseldorf, Germany

- **DGFS (DAE Graduate Fellowship Scheme) Fellowship**

Awarded by Department of Atomic Energy (DAE) in the year 2002 for pursuing M.Tech in Materials and Metallurgical Engineering Department in IIT Kanpur

Awards & Honours Received by the students

- Dr. Sumanta Kumar Pradhan received the *second prize of ASM India 2019 - Doctorate Award* (ASM India National council) by the Awards committee members for his distinguished Doctoral research in the area of Materials Science and Engineering.
- Mrs. Sudipta Roy (Research scholar) received the *best poster award* in the category of Scanning Probe Microscopy during the 57th National Metallurgists' Day in the year 2019.
- Mr. S. Kiranbabu (M. Tech student) received the *Director's Gold Medal* for being institute topper (best academic performance) among all the students completing M. Tech and MCP courses in the year 2019.
- Mr. S. Kiranbabu (M. Tech student) received the *Institute silver medal* for topping the department of Metallurgical and Materials engineering in the year of 2019.
- Mr. S. Kiranbabu (M. Tech student) received *DAAD IIT Master Sandwich programme scholarship* in 2018.
- Mr. T.S. Prithiv (M. Tech student) received the *Institute silver medal* for topping the department of Metallurgical and Materials engineering in the year of 2018.

- Mr. T.S. Prithiv (M. Tech student) received *DAAD IIT Master Sandwich programme scholarship* in 2017.

Other professional services

Editorial Responsibility:

- **Key Reader**, Metallurgical and Materials Transaction E (SpringerLink Publisher)
- **Editorial Board Member**, Materials Science and Engineering A (Elsevier)

Guest Reviewer:

Frequently invited to review manuscripts submitted to the following journals:

- Applied Soft Computing (Elsevier publisher)
- Computational Materials Science (Elsevier publisher)
- Corrosion Science (Elsevier publisher)
- Journal of Alloys and Compounds (Elsevier publisher)
- Journal of Materials Science (SpringerLink Publisher)
- Journal of Materials Engineering and Performances (SpringerLink Publisher)
- Journal of Metallurgy (Hindawi Publishing Corp)
- Materials and Design (Elsevier publisher)
- Materials Characterization (Elsevier publisher)
- Materials Research (Ibero-american Journal of Materials)
- Materials Science and Engineering A (Elsevier publisher)
- Materials Science and Technology (Maney Publisher)
- Metallurgical and Materials Transaction A (SpringerLink Publisher)
- Metals and Materials International (SpringerLink Publisher)
- Modelling and Simulation in Materials Science and Engineering (IOP publishing)
- Neural Computing & Applications (SpringerLink Publisher)
- Steel Research International (Wiley Publisher)
- Transaction Indian Institute of Metals (SpringerLink Publisher)
- Vacuum (Elsevier publisher)

Membership of Academic Bodies:

- Life Member, Electron Microscope Society of India (EMSI)
- Life Member, Indian Science Congress Association (ISCA)
- Life Member, Indian Nuclear Society (INS)
- Life Member, Materials Research Society of India (MRSI)
- Life Member, Indian Institute of Metals (IIM)