

## *Short resume*

**DR. ARUNANSU HALDAR**

**Tata Steel Chair Professor,**

**Department of Metallurgy & Materials Engineering**

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### **Personal information:**

Date of birth: 7<sup>th</sup> July, 1961

### **Expertise areas:**

- Physical Metallurgy based steel research (hot deformation, texture, structure-property *relation*)
- Steel development for various applications (automotive AHSS, oil & gas, railways, lifting & excavation, electrical steel:GO & NGO, construction armour *etc*)
- Networking with Universities and Research organization
- Management of research & people

### **Education:**

**PhD (Engg):** Metallurgical Engineering: IIT, Kanpur-

**MS (Engg):** Physical Metallurgy: Bengal Engineering College (Calcutta University), now IIST.

**BS (Engg):** Metallurgical Engg.: Bengal Engineering College (Calcutta University), now IIST.

**Post Doctoral Fellowship:** Risoe National Laboratory (DTU), Denmark: Electron microscopic studies of deformation microstructure in warm rolled IF Steel.

### **Professional Experiences:**

1. **Since Decemeber 2016: Tata Steel Chair Professor (as Tata Steel Employee),** Department of Metallurgy and Materials Engineering, Indian Institute of Engineering Science and Technology, Shibpur, Howrah 711103, West Bengal, India:
2. **1.11.2011 – 10.11.2016: Department Manager, MTD, R&D, Tata Steel Europe (TSE), UK** Leading the product development (Flat & Longs) activities for Tata Steel Europe at R&D Swinden Technology Center, Rotherham, United Kingdom
3. **1<sup>st</sup> June 1989 - 30.10. 2011: R&D Tata Steel, Jamshedpur, Last position held was Head Product Research Group, R&D, Tata Steel India (TSI), Jamshedpur:**

Leading the product development (Flat & Longs) and Product application research for Tata Steel India.

### **Subjects currently teaching:**

**Under Graduate:** 1. Introduction to Physical Metallurgy  
2. Metallurgy of Ferrous Alloys  
3. Materials Processing  
4. Selection of Engineering Materials

**Post Graduate (M Tech):** 1. Materials Technology  
2. Surface Engineering  
3. Heat treatment  
4. Diffusion in solids

### **Honours and Awards:**

- **Indranil Award in 2019**
  - **Delivered an invited lecture and chaired a session in 7<sup>th</sup> International conference on Recrystallisation and Grain Growth during 4-9 August, 2019 at Ghent, Belgium**
  - **Member of Industrial Advisory Board, School of Metallurgy and Materials at Birmingham University, UK for two years (2014-16).**
  - **Metallurgist of the Year, 2012, Awarded by Ministry of Steels, Govt of India & Indian Institute of Metals.**
  - **Dr.M.Visvesvaraya Award of The Institution of Engineers (India), 2011.**
  - **Fellow of Indian Institute of Engineers (F-116006-7), June, 2011**
  - **Eminent Materials Engineer award by The Institution of Engineers (India) awarded during 23<sup>rd</sup> National Convention at Kolkata on January 15 – 16, 2010**
  - **Member of Technical Advisory Committee of Statistical Quality Control & Operations Research Division of Indian Statistical Institute, Kolkata for 2010 – 2012.**
  - **Member of Editorial Board of Materials Science & Technology Journal for five years.**
  - **Dr A. K. Seal Memorial Lecture at The Institution of Engineers (India), Kolkata on 2<sup>nd</sup> September 2009.**
  - **Visiting Scientist at Centre for Fundamental Research: Metal Structures in Four dimensions, Material Research Department, Risø National Laboratory, Denmark.: Electron microscopic studies on deformation microstructures. Sept. 11 to Oct 15, 2005**
  - **Post Doctoral Fellowship: Risø National Laboratory (DTU), Denmark: Electron microscopic studies of deformation microstructure in warm rolled IF Steel. (2002-2003)**
  - **Dr. A. K. Bose Gold Medal from Indian Institute of Metals (IIM) for MS Thesis in 1987. Chaired sessions and delivered plenary lectures (ICOTOM 16) in Mumbai in 2011.**
- NUMISHEET in Seoul in 2011, ICOTOM 15 in Pittsburg in 2008

## Current sponsored projects:

1. Design and development of new generation advanced high strength steels with enhanced strength, ductility and application properties by controlling the amount and stability of retained austenite. : PI  
Sponsored by Science & Engineering Research Board (SERB), Government of India (Under IMPRINT II)  
Collaborators: Jadvpur University and Tata Steel Ltd
2. Development of formable HS1000 grade and Wear resistant AR 400 grades through hot strip mill. : PI  
Sponsored by Tata Steel Ltd, India
3. Design of novel high strength formable steel through hot strip mill (HSM): PI  
Sponsored by Tata Steel Ltd, India

## Involved as Co-PI in on-going project at other Institutes

1. Tailoring the ordered Fe-Al or B2 precipitate in low-density steel for strengthening  
Approved by DST, GoI P.I. Dr Sadhan Ghosh, IIT, Roorkee  
Co. PI: Dr Arunansu Haldar (IEST, Shibpur)
2. Hot deformation simulation study of cast Inconel 625 alloy and its high temperature fatigue behavior (IMPRINT Project)  
P.I. Dr Suhrit Mula, IIT Roorkee  
Co. PI: Dr Arunansu Haldar (IEST, Shibpur)

### List of Publications: (Journals & Conferences):

- *Peer reviewed and SCI journals: 67*
- *Peer reviewed but non-SCI journals: 12*
- *International conferences: 29*
- *Book edited: 02*

(a)	Paper Publication in International Journal (s)				
(i)	IN SCI				
Sl. No.	Title of Paper(s)	Name of the Author(s)	Name of the Journal(s)	Page(s)	Volume & Year
1	Influence of Microstructure on the Mechanical Properties of a Pearlitic Steel	B. Bhattacharya, T. Bhattacharyya & A. Haldar	Metallurgical and Materials Transactions A	3614–3626	Vol 51, 2020
2	Medium carbon fully pearlitic steel: microstructures and properties after wire drawing.	Sourav Das, Paul Bradley & Arunansu Haldar	Materials Science and Technology	485-495	Vol. 35, 2019, Issue 5
3	The Effects of Hot Deformation of Austenite on the Bainite Transformation in a Fe-C-Mn-Si-	Shangping Chen, Radhakanta Rana, Bin Xiao, Arunansu Haldar	Materials Science Forum ISSN: 1662-9752,	486-491	Vol. 941, 2018 (Online:

	Cr Steel				2018-12-26)
4	Effects of Processing Conditions on Texture and Microstructure Evolution in Extra-Low Carbon Steel during Multi-Pass Asymmetric rolling	S Dhinwal, L Toth, P Hodgson & A Haldar	Materials	1327	11(8), 2018
5	Current state of Fe-Mn-Al-C low density steels; Accepted for publication in	Shangping Chen, Radhakanta Rana, Arunansu Haldar, Ranjit Kumar Ray	Progress in Materials Science.	345-391	Vol. 89, 2017
6	Characterisation of electric current-treated austenite using misorientation angle distributions in martensite	Osamudiamen Omoigiade, Arunansu Haldar & Rongshan Qin	Materials Science and Technology	1432-1441	Vol. 33, 2017
7	Hot-rolled and continuously cooled bainitic steel with good strength–elongation combination	S. Das, S. Sinha, A. Lodh, A. R. Chintha, M. Krugla & <b>A. Haldar</b>	Materials Science & Technology	1026-1037	Vol. 33, 2017,
8	Study of grain growth during austenitisation of a pearlitic steel with two starting conditions.	B. Bhattacharya, T. Bhattacharyya & <b>A. Haldar,</b>	Ironmaking & Steelmaking Processes, Products and Applications	99-104	Vol. 45, 2018
9	Macroscopic characterization of mechanical properties in electric current treated dry drawn high strength wires	O. Omoigiade , <b>A. Haldar</b> and R. Qin	MRS Advances	963-974	2 (17), 2017
10	Mechanical Properties of a Bainitic Steel Producible by Hot Rolling	Radhakanta Rana, Shangping Chen, <b>Arunansu Haldar</b> and Sourav Das	Archives of Metallurgy and Materials	2331-2338	62(4), 2017
11	Effect of high tensile strain rate on the evolution of microstructure in Fe-Mn-C-Al twinning-induced plasticity steel	T. Das, R. Saha, S. Bera, K. Dahmen, M. Ghosh, <b>Arunansu Haldar,</b> W. Bleck, S. Ghosh Chowdhury,	Metallurgical and Materials Transactions A	06-11	Volume 46, Issue 1, 2015,
12	Formation of fully pearlitic microstructure in medium carbon steel	S. Das, <b>Arunansu Haldar</b>	<i>Philosophical Magazine</i>	3281-3294	Vol. 94, No. 29, 2014
13	Microstructure and mechanical property of cold rolled low carbon steel after prolonged annealing treatment	S M Hasan; <b>Arunansu Haldar;</b> D Chakrabarti	<i>Materials Science and Technology</i>	823-828	Volume 28, Issue 7, 2012
14	Continuously Cooled Ultrafine Bainitic Steel with Excellent Strength–Elongation Combination	S. Das, <b>Arunansu Haldar</b>	Metallurgical and Materials Transactions A	1844-1854	Vol. 45, Issue 4, 2014
15	Asymmetric Rolling of Interstitial-Free Steel Using Differential Roll Diameters. Part II: Microstructure and Annealing Effects	D. Orlov, R. Lapovok, L. S. Toth, I. B. Timokhina, P. D. Hodgson, <b>Arunansu Haldar,</b> D. Bhattacharjee	<i>Metallurgical and Materials Transactions A</i>	447-454	Volume 45, Issue 1, 2014
16	Asymmetric Rolling of Interstitial-Free Steel Using Differential Roll Diameters. Part I: Mechanical Properties and Deformation Textures	D. Orlov, A. Pougis, R. Lapovok, L. S. Toth, I. B. Timokhina, P. D. Hodgson, <b>Arunansu Haldar,</b> D. Bhattacharjee	<i>Metallurgical and Materials Transactions A</i>	4346-4359	Volume 44, Issue 9, 2013

17	Development of Multiphase Microstructure with Bainite, Martensite, and Retained Austenite in a Co-Containing Steel Through Quenching and Partitioning (Q&P) Treatment	S. Samanta, S. Das, D. Chakrabarti, I. Samajdar, S. Brat Singh, <b>Arunansu Haldar</b>	<i>Metallurgical and Materials Transactions A</i>	5653-5664	Volume 44, Issue 13, 2013
18	Evolution of Crystallographic Texture and Microstructure During Cold Rolling of Twinning-Induced Plasticity (TWIP) Steel: Experiments and Simulations	N. P. Gurao, P. Kumar, B. Bhattacharya, <b>Arunansu Haldar</b> , S. Suwas	<i>Metallurgical and Materials Transactions A</i>	5193-5201	Volume 43, Issue 13, 2012
19	Micromechanics of emergent patterns in plastic flows	S. Biswas, M. Grant, I. Samajdar, <b>Arunansu Haldar</b> , A. Sain	<i>Scientific Reports 3</i> , Nature Publication	2728 doi:10.1038/srep02728	September 2013
20	Refinement of Ferrite Grain Size Near to the Ultra-Fine Range by Single-Pass and Multi-Pass Thermo-Mechanical Compression	D. Chakrabarti <sup>1</sup> , S. Patra, <b>Arunansu Haldar</b> , V. Kumar,	<i>International Journal of Metallurgical Engineering</i>	52-55	Vol. 2, Issue 1, 2013
21	Design and development of precipitate strengthened advanced high strength steel for automotive application	G. Jha, S. Das, S. Sinha, A. Lodh and <b>Arunansu Haldar</b>	<i>Materials Science and Engineering A</i>	394-402	Vol. 561, 2013
22	Development of Hot Rolled Steel Sheet with 600MPa UTS for Automotive Wheel Application	G. Jha, S. Das, A. Lodh and <b>Arunansu Haldar</b>	<i>Materials Science and Engineering A</i>	457-463	Vol. 552, 2012
23	Orientation Dependent Recovery in Interstitial Free Steel	R. Khatirkar, B. Vadavadagi, S. K. Shekhawat, <b>Arunansu Haldar</b> and I. Samajdar;	<i>ISIJ International</i>	884-893	Vol. 52 (2012), No. 5
24	ND//<111> Recrystallization in Interstitial Free Steel: The Defining Role of Growth Inhibition	R. Khatirkar, B. Vadavadagi, S. K. Shekhawat, <b>Arunansu Haldar</b> and I. Samajdar	<i>ISIJ International</i>	894-901	Vol. 52 (2012), No. 5
25	Asymmetric Rolling of Interstitial-Free Steel Using One Idle Roll	R. Lapovok, D. Orlov, I. B. Timokhina, A. Pougis, L. S. Toth, P. D. Hodgson, <b>Arunansu Haldar</b> and D. Bhattacharjee	<i>Metallurgical and Materials Transactions A</i>	1328-1340	2012, Volume 43, Number 4
26	Texture and Microstructural evolution in pearlitic steel during Tri-Axial compression	P. Kumar, N. Gurao, <b>Arunansu Haldar</b> , and S. Suwas	<i>Metallurgical and Materials Transactions A</i>	2043-2055	2012, Volume 43, No 6
27	Effect of short duration tempering on the microstructure and mechanical properties of a continuously annealed dual phase steel	M. Mukherjee, A. R. Chintha, A. Raj, P. Pathak and <b>Arunansu. Haldar</b>	<i>Materials Science and Technology</i>	971-979	Vol. 28, No. 8, 2012
28	Prediction of hardness of the tempered martensitic rim of TMT rebars	M. Mukherjee, C. Dutta, <b>Arunansu Haldar</b>	<i>Materials Science and Technology</i>	35-43	Volume 543, May 2012
29	Phase Field Model of Grain Growth Using Quaternions	S. Biswas, I. Samajdar, <b>Arunansu Haldar</b> , A. Sain	<i>Materials Science Forum</i>	776-781	Vol. 715-716, 2012
30	Low carbon high manganese bainitic steel	N. Bhowmik, S. K. Ghosh, <b>Arunansu Haldar</b> , P. P. Chattopadhyay	<i>Materials Science and Technology</i>	282-287	Volume 28, Issue 03, March 2012
31	Analysis of texture and R value variations in asymmetric rolling	L. S. Tóth, B. Beausir, D. Orlov, R. Lapovok,	<i>Journal of Materials Processing</i>	509-515	Volume 212, Issue 2,

	of if steel	<i>Arunansu Haldar</i>	<i>Technology</i>		February 2012
32	Development of Asymmetric Rolling for the Better Control over Structure and Mechanical Properties in IF Steel	D. Orlov, R. Lapovok, L. S. Toth, I. B. Timokhina, P. D. Hodgson, D. Bhattacharjee, <i>Arunansu Haldar</i>	<i>Materials Science Forum</i>	2788-2793	Vol. 706-709, 2012
33	High strength low carbon hot rolled ferritic steel: Microstructure and mechanical properties	N. Bhowmik, S. K. Ghosh, <i>Arunansu Haldar</i> , P. P. Chattopadhyay	<i>Materials Science and Technology</i>	1718-1723	Volume 27, Issue 11, November 2011
34	Development of Continuously Cooled High Strength Bainitic Steel through Microstructural Engineering at Tata Steel	S. Das, S. Kundu and <i>Arunansu Haldar</i>	<i>Materials Science Forum</i>	939-942	Vol. 702-703, 2011
35	Effect of Hot-Deformation on Micro-Texture in Ultra-Fine Grained HSLA Steel	<i>S. Patra, V. Kumar, Arunansu Haldar, D. Chakrabarti</i>	<i>Materials Science Forum</i>	439-442	Vol. 702-703, 2011
36	Ferrite grain size distributions in ultra-fine grained HSLA steel after controlled thermo-mechanical deformation	S. Patra, S. Roy, V. Kumar, <i>Arunansu Haldar</i> , and D. Chakrabarti	<i>Metallurgical and Materials Transactions A</i>	2575-2590	Vol. 42A, Sept 2011
37	Development of High Strength Hot-rolled Steel Sheet for Wheel Disc Application	G. Jha, <i>Arunansu Haldar</i> , M. S. Bhaskar & T. Venugopalan	<i>Materials Science and Technology</i>	1131-1137	Vol. 27. No. 7, 2011
38	Progressive Changes in the Microstructure and Texture in Pearlitic Steel during Wire Drawing	P. Kumar, N. Gurao, <i>Arunansu Haldar</i> , and S. Suwas	<i>ISIJ International</i>	679-684	Vol. 51(2011) No. 4
39	Coarsening in polycrystalline material using quaternions	S. Biswas, I. Samajdar, <i>Arunansu Haldar</i> and A. Sain	<i>J. Phys.: Condens. Matter</i>	072202	23 (2011)
40	Structure and Mechanical Properties of Asymmetrically Rolled IF Steel Sheet	D. Orlov, R. Lapovok, L. S. Tóth, I. B. Timokhina, P. D. Hodgson, D. Bhattacharje and <i>Arunansu Haldar</i>	<i>Materials Science Forum</i>	1255-1258	Vols. 654-656 (2010)
41	Microstructural study of spheroidisation annealing cycle for card clothing wire	G. Jha, K.Kumar, S. Kundu and <i>Arunansu Haldar</i>	<i>Ironmaking and Steel Making</i>	144-148	2011 ,VOL 38, NO 2
42	Development and Characterisation of C-Mn-Al-Si-Nb TRIP-aided Steel	T. Bhattacharyya, S. B. Singh, S. Das, <i>Arunansu Haldar</i> , D. Bhattacharjee	<i>Materials Science and Engineering: A</i>	2394-2400	Volume 528, Issue 6, 15 March 2011
43	Experimental Evaluation and Constitutive Modeling of Non-proportional Deformation for Asymmetric Steels	R. K. Verma, T. Kuwabara, K. Chung, <i>Arunansu Haldar</i>	<i>International Journal of Plasticity</i>	82-101	27 (2011)
44	Microstructure, texture, grain boundary characteristics and mechanical properties of a cold rolled and annealed ferrite-bainite dual phase steel	C. Ghosh, <i>Arunansu Haldar</i> , P. Ghosh, R. K. Ray	<i>Int. J. Mat. Res. (formerly Z. Metallkunde)</i>	1252-1263	101 (2010)10
45	Structure and Mechanical Properties of Asymmetrically Rolled IF Steel Sheet	D. Orlov, R. Lapovak, L. S. Toth, I. B. Timokhina, P. D. Hodgson, D. Bhattacharjee and <i>Arunansu Haldar</i>	<i>Materials Science Forum</i>	1255-1258	Vols 654-656 (2010)
46	Effects of Cu addition on the synergistic effects of Ti-B in thermomechanically processed low carbon steels	S. K. Ghosh, N. Bhowmik; <i>Arunansu Haldar</i> ; P. P. Chattopadhyay	<i>Materials Science and Engineering: A</i>	1082-1088	527 (2010)

47	Effect of ageing on the mechanical properties of directly quenched copper bearing microalloyed steels	S. K. Ghosh, <b>Arunansu Haldar</b> and P. P. Chattopadhyay	<i>Materials Chemistry and Physics</i>	436-441	Volume 119, Issue 3, 15 February 2010,
48	Studies on hot rolled galvanized steel sheets: Effect of reheating on galvanizing	A. Chattopadhyay, V. S. Sarma, B.S. Murty, <b>Arunansu Haldar</b> and D. Bhattacharjee	Surface and Coatings Technology	3465-3471	203(2009)
49	On the Cu precipitation behavior in thermomechanically processed low carbon microalloyed steels	S. K. Ghosh, <b>Arunansu Haldar</b> and P. P. Chattopadhyay	<i>Materials Science and Engineering A</i>	88-93	519(2009)
50	Microstructure and texture development in warm rolled high strength IF steels containing Cu, P and B	<b>Arunansu Haldar</b> , C.Ghosh	<i>Ceramic Transactions</i>	161-172	200, 2009
51	Texture and microstructure development in copper after cryogenic rolling and heat treatment	<b>Arunansu Haldar</b> , D. Das and P P Chattopadhyay	<i>Ceramic Transactions</i>	83-94	201, 2009
52	The influence of copper addition on microstructure and mechanical properties of thermomechanically processed microalloyed steels	S. K. Ghosh, <b>Arunansu Haldar</b> and P. P. Chattopadhyay	<i>Journal of Materials Science</i>	580-590	Volume 44, No.2, 2009
53	Development of High Strength Cu – Ni - Ti - B Multiphase Steel by Direct Air – Cooling	S. K. Ghosh, <b>Arunansu Haldar</b> , S. Ganguly and P. P. Chattopadhyay	<i>Metallurgical and Materials Transactions A</i>	2555-2568	Vol 39 A, Nov, 2008
54	Effect of pre-strain on the ageing behavior of directly quenched copper containing micro-alloyed steel	S. K. Ghosh, <b>Arunansu Haldar</b> , P. P. Chattopadhyay	<i>Materials Characterization</i>	1227-1233	Volume 59, Issue 9, September 2008
55	Microstructure, Texture, Grain Boundary Characteristics and Mechanical Properties of a Cold Rolled and Annealed Martensitic Steel	C. Ghosh, <b>Arunansu Haldar</b> , P. Ghosh and R. K. Ray	<i>ISIJ International</i>	1626-1634	Vol. 48 (2008), No. 11
56	Studies on hot-rolled galvanized steel sheets: Segregation of alloying elements at the surface	A. Chattopadhyay, V. S. Sarma, B.S. Murty, <b>Arunansu Haldar</b> and D. Bhattacharjee	<i>Scripta Materialia</i>	522-525	59 (2008)
57	Design of the Directly Air – Cooled Pearlite - Free Multiphase Steel from CCT Diagrams Developed Using ANN and Dilatometric Methods	S. K. Ghosh, P. P. Chattopadhyay, <b>Arunansu Haldar</b> , S. Ganguly and S. Datta	<i>ISIJ International</i>	649-657	2008, No. 5, vol. 48
58	Mechanical properties of directly air cooled copper added microalloyed steels	S. K. Ghosh, <b>Arunansu Haldar</b> and P. P. Chattopadhyay	<i>Materials Science and Technology</i>	1375-1380	Volume 23, Number 11, Nov 2007
59	Effect of Copper Additions in Directly Quenched Titanium – Boron Steels	S. K. Ghosh, <b>Arunansu Haldar</b> and P. P. Chattopadhyay	<i>Journal of Materials Science</i>	9453-9459	Volume 42, No. 22, November, 2007
60	Dilatometric Studies on Copper Added Titanium – Boron Steels	S. K. Ghosh, <b>Arunansu Haldar</b> and P. P. Chattopadhyay	<i>Steel Research Int.</i>	903-907	78, 2007, No. 12
61	Effect of prestrain on aging behaviour of directly air cooled	S. K. Ghosh, <b>Arunansu Haldar</b> and P. P.	<i>Materials Science and</i>	923-927	Volume 23, Number 8,

	copper added titanium-boron microalloyed steels	Chattopadhyay	<i>Technology</i>		August 2007
62	Effect of normal anisotropy on spring back	R. K. Verma and <b>Arunansu Haldar</b>	<i>Journal of Materials Processing Technology</i>	300-304	Vol 190, Issue 1-3, 23July, 2007
63	Strain induced precipitation of complex carbonitrides in Nb-V and Ti-V microalloyed steels	A. Pandit, A. Murugaiyan, A Saha Podder, <b>Arunansu Haldar</b> , D. Bhattacharjee, S. Chandra and R.K.Ray	<i>Scripta Materialia</i>	1309-1314	53 (2005)
64	Effect of Cooling Condition after Warm Rolling on the Development of Microstructure and Texture in ELC Steel	<b>Arunansu Haldar</b> , R. K. Ray and A. J. Khan	<i>Solid State Phenomena</i>	259-264	105 (2005)
65	Microstructural and textural development in an extra low carbon steel during warm rolling	<b>Arunansu Haldar</b> and R. K. Ray	<i>Materials Science Engg.A.</i>	402-407	391(2005), Issue 1-2
66	Grain orientation dependence of microstructures in a warm-rolled IF steel	<b>Arunansu Haldar</b> , X. Huang, T. Leffers , N. Hansen , R.K. Ray	<i>Acta Materialia</i>	5405-5418	52 (2004)
67	Texture Development in Extra Low Carbon (ELC) and Interstitial Free (IF) Steels during Warm Rolling	R. K. Ray and <b>Arunansu Haldar</b>	<i>Materials &amp; Manufacturing Processes</i>	715-729	Vol. 17, No. 5, 2002
(ii)	<b>OTHER THAN SCI</b>	National Journals			
<b>Sl. No.</b>	<b>Title of Paper(s)</b>	<b>Name of the Author(s)</b>	<b>Name of the Journal(s)</b>	<b>Page(s)</b>	<b>Volume &amp; Year</b>
68	Feasibility study of production of titanium wires in steel mill	A. Raj, S. Das, <b>Arunansu Haldar</b>	Tata Search	221-226	2, 2011
69	Optimization of spheroidized annealing cycle for card clothing wire	G. Jha, S. Kundu, <b>Arunansu Haldar</b> and S V Desai	<i>Tata Search</i>	351-356	2, 2010
70	High strength flangeable grade for automotive component	G. Jha, <b>Arunansu Haldar</b> , T.Venugopalan and D.Bhattacharjee	<i>Tata Search</i>	291-295	2, 2009
71	Physical Simulation of Tube Heat Treatment Process for optimization of Process Parameters to increase Furnace Productivity	<b>Arunansu Haldar</b> , O. P. Sharma, C. B. Lunawat and A. Jana	<i>Tata Search</i>	337-342	2, 2007
72	Hall – Petch relationship for a low and an ultra low carbon steel	<b>Arunansu Haldar</b> , S.Chatterjee and N. Mehrotra	<i>Tata Search</i>	353-356	2, 2005
73	Modelling of Mean Flow Stress based on Microstructural Evolution during Hot Strip Rolling of Microalloyed Steels – an empirical approach	A. Pandit , <b>Arunansu Haldar</b> , A. Murugyian, R. R. Mohanty and R. K. Ray	<i>Tata Search</i>	329-335	2, 2005
74	Improvement in cold heading response of CHQ grade of steel through optimization of hot rolling parameter	A. Banerjee, R. Shankar, <b>Arunansu Haldar</b> , I. Chackrovorty and M. D. Maheswari	<i>Tata Search</i>	281-287	2, 2005
75	Development of ERW tube for plumbing application with an equivalent properties of FM tube	G. Jha, <b>Arunansu Haldar</b> , C. B. Lunawat, B. B. Prasad, A. Tiwary and K. Singh	<i>Tata Search</i>	299-304	2, 2005
76	Effect of Copper Additions in B-microalloyed steels	S. K. Ghosh, <b>Arunansu Haldar</b> and P. P.	<i>Trans. Indian Inst. Met</i>	171	Vol. 57, No. 2, 2004



		Chattopadhyay			
77	Production of a thinner gauge of hot rolled high carbon steel strip	R. S. Ravi, K. Datta, <b>Arunansu Haldar</b> , K. V. Singh and A. J. Khan	<i>Tata Search</i>	124-127	2000
78	Physical simulation and application of Gleeble – 1500 thermo mechanical simulator at Tata Steel	<b>Arunansu Haldar</b> , S. B. Singh, R. N. Chattopadhyay and O. N. Mohanty	<i>Tata Search</i>	120-125	1995
79	Development of low carbon steels for hot strip mill using controlled rolling and accelerated cooling	<b>Arunansu Haldar</b> , S. K. Tiwary, M. Shome, R. N. Chattopadhyay and A. Chatterjee	<i>Tata Search</i>	102-107	1994

(b)	Paper(s) Publication in National / International Conference(s)				
Sl. No.	Title of Paper(s)	Name of the Authors	Name of the conference	Page(s)	Volume & Year
1	The Effects of Hot Deformation of Austenite on the Bainite Transformation in a Fe-C-Mn-Si-Cr Steel	Shangping Chen, Radhakanta Rana, Bin Xiao, Arunansu Haldar	Presented in THERMEC'2018,	Paris, France	July 8-13, 2018
2	Atomic scale characterisation of Austenite in a medium carbon bainitic Steel with or without deformation	Eleanor Crossley, Michael Moody, Paul Bagot, Daniel Haley, Shangping Chen and Arunansu Haldar	Presented in Modern Steels and Iron Alloys (MS&IA 2018)	Warsaw Poland	26-29 June 2018
3	Low carbon fully pearlitic steel: formation and microstructural characterisation	S Das & Arunansu Haldar	Presented in Modern Steels and Iron Alloys (MS&IA 2018)	Warsaw Poland	26-29 June 2018
4	Mechanical Properties of a Bainitic Steel Producing By Hot Rolling	Radhakanta Rana, Shangping Chen, <b>Arunansu Haldar</b> and Sourav Das	International Conference "Modern Steels and Iron Alloys MS&IA 2016: Design-Technologies-Properties-Applications" 5-8 July 2016, Warsaw, Poland.	Paper presented	2016
5	Development of asymmetric rolling for the better control over structure and mechanical properties in IF steel	D. Orlov, R. Lapovok, L. S. Tóth, I. B. Timokhina, P. D. Hodgson, D. Bhattacharjee and <b>Arunansu Haldar</b>	<i>Thermac 2011, Canada</i>		2011
6	Design and development of continuously cooled bainitic steel with 1300 MPa UTS and 20% elongation at Tata Steel	S. Das, S. Kundu and <b>Arunansu Haldar</b>	<i>ICOTOM16, Bombay</i>		2011
7	Microstructure evolution and mechanical properties in hot rolled -TRIP steel	N. Bhowmik, S. K. Ghosh, P. P. Chattopadhyay and <b>Arunansu Haldar</b>	<i>International Conference on high manganese steel (HMnS 2011)</i> , Seoul		2011
8	Evolution of microstructures and properties in a high Mn bainitic steel	N. Bhowmik, S Das, S. K. Ghosh, P. P. Chattopadhyay and <b>Arunansu Haldar</b>	<i>International Conference on high manganese steel (HMnS 2011)</i>		2011
9	Phase Field Model of grain growth using Quaternions	S. Biswas, I. Samajdar, <b>Arunansu Haldar</b> and A. Sain	<i>International Conference on Recrystallization and Grain Growth (ReX &amp; GG IV)</i> , UK		2010
10	Development of new generation high strength hot-rolled steel	G. Jha, <b>Arunansu Haldar</b> , T. Venugopalan, D.	<i>AISTech - Iron and Steel Technology Conference</i>		2009

	sheet for automotive components	Bhattacharjee	<i>Proceedings 2</i>		
11	Texture and microstructure development in copper after cryogenic rolling and heat treatment	<i>Arunansu Haldar</i> , D. Das and P. P. Chattopadhyay	15th International Conference on the Textures of Materials, USA		2008
12	Microstructure and texture development in warm rolled high strength IF steels containing Cu, P and B	<i>Arunansu Haldar</i> and C. Ghosh	15th International Conference on the Textures of Materials, USA		2008
13	Cu – Ni - Ti – B Multiphase Steel	S. K. Ghosh, S. Ganguly, P. Pal, <i>Arunansu Haldar</i> and P. P. Chattopadhyay	International Conference on Microalloyed Steels: Emerging Technologies and Applications, Kolkata		2007
14	Ageing Behaviour of Directly Quenched Copper Added Titanium - Boron microalloyed steels	S. K. Ghosh, <i>Arunansu Haldar</i> and P. P. Chattopadhyay	International Conference on Microalloyed Steels : Emerging Technologies and Applications, Kolkata, India		2007
15	Effect of Cu addition in multiphase Ti, B microalloyed steel	S. K. Ghosh, <i>Arunansu Haldar</i> and P. P. Chattopadhyay	Proc. Int. Conf. on Advances in Materials and Materials Processing (ICAMMP- 2006), Kharagpur		2006
16	Design of pearlite free air – cooled Cu added Ti, B microalloyed steel using ANN prediction of CCT diagrams	S. K. Ghosh, S. Ganguly, S. Dutta, <i>Arunansu Haldar</i> and P. P. Chattopadhyay	International Workshop on Neural Network and Genetic Algorithm in Material Science and Engineering (NGMS 2006), Kolkata		2006
17	Developmrrnt of High strength micro alloyed welded steel tubes for two wheeler application	<i>Arunansu Haldar</i> , G. Jha, B. B. Prasad, C. B. Lunawat and K.Singh	ITA Conference TUBE 05, Czech Republic		2005
18	Effect of cooling condition after warm rolling on the development of microstructure and texture in an ELC steel	<i>Arunansu Haldar</i> and R. K. Ray	2nd International Conference on Textures of Materials (ITAP2), Metz, France		2004
19	Optimisation of Tube Heat Treatment Process	<i>Arunansu Haldar</i> , O. P. Sharma, C. B. Lunawat and B. B. Prasad	International Tube Association Conference, Hyderabad, India		2005
20	Grain orientation effect on the three dimensional morphology of microstructures in an warm-rolled microstructures	<i>Arunansu Haldar</i> , X. Huang, T. Leffers , N. Hansen , R. K. Ray	25th Risoe International Symposium on Materials Science, Riso, Denmark		2004
21	Determination of Recrystallisation Kinetics of (Nb-Ti) Interstitial Free Steel Using Stress Relaxation Technique	<i>Arunansu Haldar</i> , A. Pandit, A. Singh, V. Singh and V. Kumar	International Conference on Thermomechanical Simulations and Processing of Steels, Ranchi, India		2004
22	Development of high tensile tubes for two wheelers	<i>Arunansu Haldar</i> , G. Jha, B. B. Prasad, C. B. Lunawat and K. Singh	Developments in Steel tube technology- An imperative for the Auto and Engineering Industry		2004
23	exture Development in Extra Low Carbon (ELC) and Interstitial Free (IF) Steels During Warm Rolling	R. K. Ray and <i>Arunansu Haldar</i>	Proc. Int. Conf. on Advances in Materials and Materials Processing (ICAMMP), Kharagpur, India		2002

24	Warm Rolling and Recrystallization Textures in an IF and an ELC Steel	<i>Arunansu Haldar</i> , R. K. Ray and O. N. Mohanty	<i>Recrystallization and Grain Growth 2001</i>		2001
25	Thermomechanical Processing of Copper bearing HSLA steels	M. K. Banerjee, <i>Arunansu Haldar</i> and D. Ghosh	<i>International Conference on Processing &amp; Fabrication of Advanced Materials VI, Singapore</i>		1998
26	Development of Microstructure in Low Carbon Micro Alloyed Steels Under Simulated Hot Strip Rolling Practices	<i>Arunansu Haldar</i> , S. K. Tiwary, R. N. Chattopadhyay and A. Chatterjee	<i>International conference of HSLA 95, Beijing, China</i>		1995
27	Development activities in the area of low carbon steels at Tata Steel	<i>Arunansu Haldar</i> , S. K. Tiwary, R. N. Chattopadhyay and A. Chatterjee	<i>International conference on "Low carbon steels for the 90's, Pittsburg, USA</i>		1993
28	Effect of Zirconium on the toughness and S.C.C behaviour of Al-Zn-Mg alloys	<i>Arunansu Haldar</i> , S. Chatterjee, M. K. Banerjee and A. K. Seal	<i>INCAL 85</i>		1985
29	<i>Arunansu Haldar</i> , S. Chatterjee, M. K. Banerjee and A. K. Seal, "Role of Zirconium in High Strength Al-Zn-Mg Alloys (7075)	<i>Arunansu Haldar</i> , S. Chatterjee, M. K. Banerjee and A. K. Seal	<i>National Seminar on Aluminium: Some Advances in technology and application, Kolkata, India</i>		1985

➤ **Books published:**

1. Proceedings of the International Conference on Microstructure and Texture in Steels and other materials; February 5-7, 2008, Jamshedpur, India, Edited by **Arunansu Haldar**, Satyam Suwas and Debashish Bhattacharjee, Published by Springer, ISBN 978-1-84882-453-9.
2. Proceedings "Textures of Material ICOTOM 16" IIT Bombay, Part 1 & 2, December 12-17, 2011, edited by A Tewari, S Suwas, D Srivastava, I Samajdar & **A. Haldar**, Volume 702-703 of Materials Science Forum of TRANSTECH publication, ISSN 0255-5476.

➤ **List of patents:**

- *Indian patents: 8 (granted) and 14 (filed & Under Process of examination)*
- *International patents: 2: 1-(filed) & 1- Granted in China, Japan, EU & South Korea*

**Granted: Eight Indian Patents**

1. G. Jha, **Arunanashu Haldar**, C.B. Lunawat, A. Tiwari and N. Gope; "Electric resistance welded tubes processed by using a suitable hot rolled steel strip": **Patent No. 236688, dated 20.11.2009**

2. **Arunansu Haldar**, G. Jha, C. B. Lunawat; “Development of Microalloyed High Strength Welded Steel Tubes for Two and Three Wheelers.” **Patent No. 235698 dated 07.08.2009**
3. C. Ghosh, **Arunansu Haldar**; “Development of ultra-high strength steel from ferrite-martensite starting microstructure.”: **Patent no. 249559 dated 28.10.2011**
4. G. Jha, **Arunansu Haldar**, T. Venugopalan, Debashish Bhattacharjee; “A method of producing advanced high strength steel for automotive application and steel produced thereof.”: **Patent no. 241163 dated 25.06.2010**
5. A. Chattopadhyay, **Arunansu Haldar**, D. Bhattacharjee; “Procedure for improvement in Zn coatability of Hot Rolled steel sheets”, **Patent No. 251529 dated 23.03.2012**
6. G. Jha, **Arunansu Haldar**; “A method of producing fire resistant steel for structural applications.”: **Patent No. 255307 dated 02.11.2013**
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5. T. Bhattacharyya, **Arunansu Haldar**, M. Shome, D. Bhattacharjee, S. Chatterjee & S. B. Singh: “A method for resistance spot welding of cold rolled transformation induced plasticity (trip) aided steel”: **Application No. 1356/KOL/2011 dated 21.10.2011**
6. G. Jha, **Arunansu Haldar**, S. Das & T. Bhattacharyya; “1000 MPa Hot Rolled Steel Sheet with High Hole Expandability For Automotive Chassis Application and Method of Producing the Same”: **Application No. 886/KOL/2011 dated 01.07.2011**
7. S. Das, S. Kundu & **Arunansu Haldar**; “A method of producing fully pearlitic microstructure in hypoeutectoid steel”: **Application No. 226/KOL/2011 dated 23.02.2011**

8. T. Bhattacharyya, **Arunansu Haldar**, D. Bhattacharjee, S. B. Singh, W. Bleck, C. Keul & F. Huber; “A method for producing cold rolled transformation induced plasticity (trip) -aided steel in laboratory with high strength-uniform elongation combinations and improved wettability”: **Application No. 633/KOL/2010 dated 11.06.2010**
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1. Bainitic steel of high strength and high elongation and method to manufacture said bainitic steel; S. Das, S. Kundu and A. Haldar, Govt. number: PCT / IN2012 / 000371, dated 28.05.2012; International publication: WO 2012 / 164579 A4, dated 06.12.2012; US publication: US 2014 / 0102600 A1, dated 17.04.2014; EU publication: EP 2714947 A0; Korean publication: KR 20140014234 A, dated 02.05.2014; Japan publication: JP 2014516388 A, dated 07.10.2014; China publication: CN 103429766 A
2. Shangping Chen, Arunansu Haldar, Saeed Ali-Reza Akbari & Richard Mostert; “Austenitic, Low density, High density, High-Strength Steel strip or sheet having a High Ductility, Method for producing said steel and use thereof.” Application No: PCT/EP 2017 dated 28.02.2017 & Publication number: WO 2017/148892A1 dated 08.09.2017