

# Dr. Md Basiruddin Sk



- 1 **Name and full correspondence address:** **Md Basiruddin Sk**  
Assistant Professor,  
Department of Metallurgical and Materials Engineering,  
Jadavpur University, Kolkata – 700 032, West Bengal, India.
- 2 **Email(s) and contact number(s):** [mdbasiruddinsk.metal@jadavpuruniversity.in](mailto:mdbasiruddinsk.metal@jadavpuruniversity.in),  
[basiruddin.sk@gmail.com](mailto:basiruddin.sk@gmail.com)  
Telephone No. (with STD code): +033 2457-2180;
- 3 **Institution:** Jadavpur University  
Kolkata – 700 032  
West Bengal, India
- 4 **Gender:** Male
- 5 **Academic Qualification (Undergraduate Onwards):**
- **Doctor of Philosophy (Ph.D.), 2022**, Dept. of Metallurgical and Materials Engineering, Indian Institute of Technology (I.I.T.) Kharagpur - 721 302, India.
  - **Master of Technology (M. Tech), 2014**, Dept. of Metallurgical and Materials Engineering, Indian Institute of Technology (I.I.T.) Kharagpur - 721 302, India.
  - **Bachelor of Engineering (B.E.), 2012**, Dept. of Metallurgical and Materials Engineering, Jadavpur University (J.U.), Jadavpur, Kolkata - 700032, India.

6 **Work experience:**

<b>Sl. No.</b>	<b>Positions held</b>	<b>Name of the Institute</b>	<b>From</b>	<b>To</b>
1	Assistant Professor	Jadavpur University, Kolkata – 700 032, West Bengal, India	14-06-2019	Continuing

## 7 Courses Taught/Teaching:

<i>Sl. No.</i>	<i>Name of the Courses</i>	<i>Course Type</i>	<i>UG/PG</i>
1	Testing of materials	Theory	UG
2	Fabrication processes	Theory	UG
3	Mechanical testing and characterization of materials	Theory	UG
4	Mechanical testing and inspection of materials	Sessional	UG
5	Materials processing	Theory	PG

## 8 Area of Specialization:

- Physical Metallurgy: Phase transformation; Materials Characterization etc.
- Mechanical Metallurgy: Mechanical Testing and Characterization; Deformation and fracture mechanics, etc.

## 9 Research Areas:

- Design of steel composition.
- Thermo-mechanical processes design for developing microstructure and crystallographic texture in metallic alloys.
- Characterization of microstructure, crystallographic texture and fracture surface of mechanical tested specimens.
- Development of different grain structures in metals and alloys and their effect on properties.
- Deformation and fracture behaviour in metals.

## 10 Professional Recognition/ Award/ Prize/ Certificate, Fellowship received:

<i>Sl. No.</i>	<i>Name of Award/ Fellowship</i>	<i>Awarding Agency</i>	<i>Year</i>
1	Third prize in poster presentation in the "Research Scholar Day".	Department of Metallurgical and Materials Engineering, IIT Kharagpur.	2016
2	Ministry of Human Resource Development Fellowship received during Ph.D. program.	MHRD	2014-2019
3	Ministry of Human Resource Development Fellowship received during Master of Technology (MTech) program.	MHRD	2012-2014
4	University Grants Commission (UGC) Scholarship under Basic Science Research for Meritorious Students Scheme	UGC	2010

## 11 Publications (List of papers published in SCI Journals, in year wise descending order):

- [1] A Chatterjee, **Md Basiruddin Sk**, A Ghosh, R Mitra, D Chakrabarti, "Combining crystal plasticity and electron microscopy to elucidate texture dependent micro-mechanisms of tensile deformation in lath martensitic steel", *International Journal of Plasticity* 153 (2022) 103251.
- [2] RK Barik, A Ghosh, **Md Basiruddin Sk**, S Biswal, A Dutta, D Chakrabarti, "Bridging microstructure and crystallography with the micromechanics of cleavage fracture in a lamellar pearlitic steel", *Acta Mater.* 214 (2021) 116988.
- [3] S Behera, RK Barik, **Md Basiruddin Sk**, R Mitra, D Chakrabarti, "Recipe for improving the impact toughness of high-strength pearlitic steel by controlling the cleavage cracking mechanisms", *Materials Science and Engineering: A* 764, (2019) 138256.
- [4] KK Bhandari, A Mandal, **Md Basiruddin Sk**, A Deb, D Chakrabarti, "Tailoring the crack-tip microstructure: a novel approach", *Philosophical Magazine Letters* 99 (2), 57-66
- [5] **Md. Basiruddin Sk**, D. Chakrabarti, S. Chatterjee, "Microstructural Engineering and Strength-Impact Toughness Prediction in Ultra-Low Carbon Bainitic Steel", *Materials Science and Technology* 34 (2018) 1910-1918.
- [6] **Md. Basiruddin Sk**, I Alam, D Chakrabarti, "The role of fibrous morphology on the Charpy impact properties of low carbon ferrite-bainite dual phase steel", *Mater. Sci. Eng. A.* 716 (2018) 208–219.
- [7] **Md. Basiruddin Sk**, A Ghosh, N Rarhi, R Balamuralikrishnan, D Chakrabarti, "Effect of Reheating Temperature and Cooling Treatment on the Microstructure, Texture, and Impact Transition Behavior of Heat-Treated Naval Grade HSLA Steel", *Metallurgical and Materials Transactions A* 48 (7) 3231-3247.
- [8] A Chatterjee, A Dutta, **Md. Basiruddin Sk**, R Mitra, AK Bhaduri, D Chakrabarti, "Effect of Microalloy Precipitates on the Microstructure and Texture of Hot-Deformed Modified 9Cr-1Mo Steel", *Metallurgical and Materials Transactions A* 48 (5) 2410-2424.
- [9] **Md. Basiruddin Sk**, Badirujjaman Syed, Arya Chatterjee, Arijit Lodh, Saurabh Kundu, Debalay Chakrabarti, "Effect of Thermal Exposure on the Charpy Impact Properties of Thermo-Mechanically Treated Reinforcement Steel Bar", *steel research int.* 87 (2016) No. 9999.
- [10] S.K. Dinda, **Md. Basiruddin Sk**, G.G. Roy, P. Srirangam, "Microstructure and mechanical properties of electron beam welded dissimilar steel to Fe–Al alloy joints", *Mater. Sci. Eng. A.* 677 (2016) 182–192.
- [11] **Md. Basiruddin Sk**, A.K. Khan, S. Lenka, B. Syed, J. Chakraborty, D. Chakrabarti, Arghya Deb, S. Chandra, S. Kundu, "Effect of microstructure and texture on the impact transition behaviour of thermo-mechanically treated reinforcement steel bars", *Materials and Design* 90 (2016) 1136–1150.
- [12] A. Karmakar, M Mandal, A Mandal, **Md. Basiruddin Sk**, S Mukherjee, D. Chakrabarti, "Effect of Starting Microstructure on the Grain Refinement in Cold-Rolled Low-Carbon Steel During Annealing at Two Different Heating Rates", *Metallurgical and Materials Transactions A* 47 (1) 268-281.

## 12 Paper Presented at National and International Conferences:

- [1] **TMS2018:** "Effect of Reheating Temperature and Cooling Treatment on the Microstructure, Texture, and Impact Transition Behavior of Heat-Treated Naval Grade HSLA Steel", 147<sup>th</sup> Annual Technical Meeting and Exhibition, Phoenix Convention Center, Phoenix, Arizona, USA, 11-15 March 2018.
- [2] **ASIA STEEL 2018:** "Effect of Gradient Microstructure on Strength-impact toughness Property of Low C Steel Bar", Asia Steel International Conference, Bhubaneswar, Odisha, India, 6-9 Feb 2018.
- [3] **NMD ATM 2017:** "Strength-impact Toughness Improvement Through Modification of Microstructural Morphology in Low C Ferrite-Bainite Dual Phase Steel", 71<sup>th</sup> Annual Technical Meeting, BITS Pilani- KK Birla, Goa campus, India, 11-14 Nov 2017.
- [4] **ICME 2017:** "Effect of Microstructure and Texture, on Strength-impact Transition Behavior of HSLA Steel", International Conference on Materials Engineering, IIT Kanpur, India, 02-04 June 2017.
- [5] **MS&T16:** "Study of Impact Transition Behavior of Thermo-Mechanically Treated Reinforcement Steel Rebars", Material Science and Technology, Salt Lake City, UT, USA, 23-27 Oct 2016.
- [6] **ICAMMP-IV:** "Effect of Particle Size and Grain Size on Cleavage Fracture Stress of Low C HSLA Steel", The 4<sup>th</sup> International Conference on Advances in Materials and Materials Processing, IIT Kharagpur, India, 05-07 Nov 2016.
- [7] **NMD ATM 2016:** "Effect of Reheating Temperature and Cooling Treatment on the Microstructure, Texture, and Impact Transition Behavior of Heat-Treated Naval Grade HSLA Steel", 70<sup>th</sup> Annual Technical Meeting, IIT Kanpur, India, 11-14 Nov 2016.
- [8] **NMD ATM 2015:** "Study of Impact Transition Behavior of Thermo-Mechanically Treated Reinforcement Steel Rebars", 69<sup>th</sup> Annual Technical Meeting, Coimbatore, India, 13-16 Nov 2015.
- [9] **Microstructure 2015:** "Effect of Thermal Exposure on Strength-impact Toughness of Thermo-Mechanically Treated Steel Rebars", National Symposium and National Inter Metallurgical Department Paper and Metallography Meet, IIT Bombay, Powai, Mumbai, India.

## 13 Detail of patents:

1. An Improved Test Sample for Charpy V-Notch Impact Toughness Test of Steel Rebars and the Process of Testing, IN Patent 399,271, Issued on: 27.03.2015.

## 14 Books/Reports/Chapters/General articles etc.

Na

**15 ME/MTech Thesis supervised.**

<b>Sl. No</b>	<b>Candidate Name</b>	<b>Thesis Title</b>	<b>ME/MTech</b>	<b>Year of Submission</b>
1	Nilanjan Mondal	Development of dual phase microstructure with varying morphology and their effect on strength-impact properties of low-C steel	MTech in Material Engineering	2022
2	Subhajit Adak	Development of granular bainite microstructure and study the effect martensite-austenite constituent on fracture of ultra-low-C steel	MTech in Material Engineering	2022
3	Pritam Pal	Stability of retained austenite and its effect on impact property of low carbon high strength steel	M.E. in Metallurgical and Material Engineering	2021
4	Rampriya	Study the effect of microstructure on strength-impact toughness behavior of thermomechanically treated steel rebar	MTech in Material Engineering	2021

**16 Orientation Courses/ Refresher Courses/workshops Attended:**

<b>Sl. No.</b>	<b>Title of the Course</b>	<b>Place</b>	<b>Date</b>
1	UGC sponsored faculty induction programme (Guru Dhkshta)	UGC-HRDC Jadavpur University, Kolkata	2022
2	UGC sponsored workshop on NEP-2020: "Good Academic Research Practices / Academic Research Integrity".	UGC-HRDC Jadavpur University, Kolkata	2022
3	UGC sponsored workshop on NEP-2020: "Multidisciplinarity".	UGC-HRDC Jadavpur University, Kolkata	2022
4	UGC sponsored workshop on NEP-2020: "Educational Framework for Global Citizenship in HE".	UGC-HRDC Jadavpur University, Kolkata	2022

**17 Invited Lectures Delivered/Sessions Chaired:**

<b>Sl. No.</b>	<b>Type of Participation</b>	<b>Name of the Conference / Seminar</b>	<b>Place</b>	<b>Date</b>
1	Lecture delivered	Heat Treatment Technology for Metals and Alloys	Metallurgical Engineering Department of Asansol Polytechnic collage	2021

**18 Any Other Seminar/Workshop/Conference/Symposium/Course attended:**

<b>Sl. No.</b>	<b>Name of the Conference / Seminar / Workshop / Course</b>	<b>Place</b>	<b>Date</b>
1	Steel research: A global journey Webinar series to mark the retirement of Sir Harry Bhadeshia	University of Cambridge	2021
2	Scientific computing in materials engineering	Department of MME, IIT Kharagpur	2021
3	Seminar attended: Vacuum Induction Melting and Inert Gas Atomization for making Metal Powders required for Additive Manufacturing	Jadavpur University, Kolkata	2021
4	Processing, Microstructure and Properties of Engineering Alloys for Critical Applications	Jadavpur University, Kolkata	2021
5	Towards Materials Sustainability through Advanced Processing and Evaluation	IIT(ISM) Dhanbad, Dhanbad 826004, Jharkhand India	2021
6	Transforming Pedagogy in India	NIT Jamshedpur	2020
7	Future of Metallurgical Industries from Different Viewpoints – Post COVID Scenario	Department of Metallurgical Engineering under School of Mines and Metallurgy, Kazi Nazrul University, Asansol, West Bengal	2020
8	Product Development & Industrial Research -2020	R & D, Mechanical Engineering Department, Government College of Engineering, Aurangabad	2020
9	Structural Integrity Assessment: Tool for Prediction and Prevention of Failures	NML, Jamshedpur	2020