



# Curriculum vitae

## Dr. Shatrughan Soren

### Associate Professor

Department of Fuel, Minerals and Metallurgical Engineering

Indian Institute of Technology (ISM) Dhanbad

Jharkhand, INDIA-826004

Email ID: [ssoren@iitism.ac.in](mailto:ssoren@iitism.ac.in), [ssoren24@gmail.com](mailto:ssoren24@gmail.com)

Contact No: +91-9939707967, +91-0326-223 5652



Date of Birth: 14.08.1978

Gender: Male

Area of interest: Sintering and Pelletisation of iron ore fine, Ironmaking and Steelmaking

### 1. Educational Qualifications:

**Ph. D** BIT Sindri (Vinoba Bhave University, Hazaribag), Department of Metallurgical Engineering, “*Evolution of Microstructure during Deformation of a few Low Carbon Microalloyed Steels*” under the joint guidance of Prof. N Prasad, BIT Sindri and Prof. M. K. Banerjee, MOS Chair Professor, MNIT Jaipur in **2016**.

**M. Tech** Indian Institute of Technology, Kharagpur, “*Production of Ultra fine Zirconium diboride Powder through Low Temperature Chemical Reaction*” under the guidance of Prof. M.M. Godkhindi, Professor, Department of Metallurgical and Materials Engg. IIT Kharagpur in **2005**.

**B. Tech** Department of Metallurgical Engineering, National Institute of Technology, Jamshedpur (RIT Jamshedpur) in **2002**.

### 2. Total Experience Details:

Sl No.	Organization	Designation	Pay scale (PB & AGP)	From (Year)	To (Year)
1.	Indian Institute of Technology (ISM) Dhanbad	Associate Professor	13A2	2021	Till date
2.	Indian Institute of Technology (ISM) Dhanbad	Assistant Professor	13A1	2021	2021
3.	Indian Institute of Technology (ISM) Dhanbad	Assistant Professor	15600-39100, AGP 8000	2016	2021
4.	Indian Institute of Technology (ISM) Dhanbad	Assistant Professor	15600-39100, AGP 6000	2010	2016
5.	BIT Sindri (Under Department of Science and Technology, Govt. of Jharkhand)	Assistant Professor	15600-39100, AGP 6000	2006	2010

**3. Courses Taught:**

FMC 15102 Ferrous Extractive Metallurgy (3-0-0)  
 FMC 16104 Agglomeration Technology (3-0-0)  
 FME 18103 Elements of Materials Engineering (3-0-0)  
 FME 51106 Refractory materials (3-0-0)  
 FMC 505 Size Enlargement Processes (3-0-0)  
 FME 52103 Extractive Metallurgy (3-0-0)  
 FMC 16202 Extractive Metallurgy Lab (0-0-3)  
 FMC 16204 Agglomeration Technology Lab (0-0-3)  
 FMC 10151 Mineral Beneficiation (3-0-0)  
 FMD 525 Ironmaking and Steelmaking (3-0-0)  
 NFMC 513 Mechanical Behaviour of Materials (3-1-0)

**4. Ph.D. Supervision (Completed/Ongoing):**

Name of candidate	Registration No. with date	Status of work done	Name of Principal guide & Co-guide	Current Position of the Scholar
Anil Kumar Parida	2014DR1079 24.03.2014	PhD Awarded 2018	Guide: Dr. Shatrughan Soren Co guide: Dr. R. N. Jha	Ordinance Factory, Ministry of Defence
Gaurav Jha	2015DR0273 17.07.2015	PhD Awarded 15.03.2021	Guide: Dr. Shatrughan Soren Ext. Guide: Dr. K. D. Mehta	TATA Steel, Faculty IIT(ISM)
Rakesh Prasad	2014DR1161 18.08.2014	PhD Awarded 23.02.2023	Guide: Dr. Shatrughan Soren Ext. Guide: Dr. S K Pan	Faculty in a Private Organization
Kashinath Barik	17DP000320 28.07.2017	PhD Awarded 30.05.2023	Guide: Dr. Shatrughan Soren Co guide: Dr. S K Biswal	Faculty, IGIT Sarang
Rajkumar Jaiswal	17DR000634 27.12.2017	PhD Awarded 17.10.2023	Dr. Shatrughan Soren	JSL, Angul
Soumya Sahoo	16DR000211 01.08.2016	PhD Awarded 03.11.2023	Guide: Dr. Shatrughan Soren Co guide: Dr. S. K. Biswal	AM/NS, Odisha
Akhileswar Nirala	18DP000407 07.11.2017	PhD Awarded 04.12.2023	Dr. Shatrughan Soren	Faculty, GCET Noida
Navin Kumar	17DR000600 27.12.2017	PhD Awarded 02.02.2024	Dr. Shatrughan Soren	Post Doc
Saigeeta Priyadarshi	17DP000162 28.02.2017	PhD Awarded 30.07.2024	Dr. Shatrughan Soren	Faculty, Sarda University, Autodesk
Shriprakash Sudhir	17DP000206 04.05.2017	PhD Awarded 29.08.2024	Guide: Dr. Shatrughan Soren Co guide: Dr. G.M. Chawdhoury	RDCIS, SAIL
Lina Priya	22DP0002 03.08.2022	Work in progress	Dr. Shatrughan Soren	HEC Ranchi
Amit Kumar Richhariya	24DP0121	Coursework completed and work is in progress	Dr. Shatrughan Soren	GCET, Greater Noida
Anand Sharma	24DP0124	Coursework completed and work is in progress	Dr. Shatrughan Soren	GCET, Greater Noida

Indrajit Paul	24DP0134	Coursework and work are in progress	Dr. Shatrughan Soren	TATA STEEL, Jamshedpur
Nagesh Kumar Srivastava	24DP0144	Coursework completed and work is in progress	Dr. Shatrughan Soren	GCET, Greater Noida
Chetan Dixit	24DP0131	Coursework completed, and work is in progress	Dr. Shatrughan Soren	GCET, Greater Noida
Suruchi Kumari	24DR0291	Coursework and work are in progress	Dr. Shatrughan Soren	
Rashmi Rani Maheshwari	24DP0284	Coursework and work are in progress	Dr. Shatrughan Soren	GCET, Greater Noida

#### 5. Post Graduate Project supervision:

Sl No.	Name and Admission No	Status	Year
1.	Mr. Rakesh Kumar (2010MT0039)	Completed	2012
2.	Mr. Rishikesh Goswami (2010MT0057)	Completed	2012
3.	Mr. Abhishek Anand Hembrom (2011MT0165)	Completed	2013
4.	Mr. Arbind Kuamr Singh (2012MT0115)	Completed	2014
5.	Mr. Hemant Kumar Singh (2012MT0098)	Completed	2014
6.	Mr. Gaurav Jha (2013MT0318)	Completed	2015
7.	Ms. Soumya Sahoo (2014MT0518)	Completed	2016
8.	Mr. Vimod Kumar (2014MT0215)	Completed	2016
9.	Mr. Himanshu Punetha (2014MT0200)	Completed	2016
10.	Mr. J. S. K. Dheeraj (2014MT0547)	Completed	2016
11.	Mr. Naresh Kumar Mandal (16MT001327)	Completed	2017
12.	Mr. Antim Swain (15MT000543)	Completed	2017
13.	Mr. Chinmay Kumar Mahanta (15MT000549)	Completed	2017
14.	Mr. Leelamaya Jena (15MT000546)	Completed	2017
15.	Mr. Debabrata Mohanta(15MT000569)	Completed	2017
16.	Ms. Itishree Amrapalli Ray (15MT000712)	Completed	2017
17.	Mr. Amrendra Gadde(16MT000939)	Completed	2018
18.	Mr. Deepak Kumar Acharya (17MT001749)	Completed	2019
19.	Mr. Saroj Kant Pradhan (19MT0471)	Completed	2021
20.	Mr. Rahul Kumar Singh (19MT0299)	Completed	2021
21.	Ms. Babita Yadav (20MT0105)	Completed	2022
22.	Mr. Jitin Koushik (20MT0175)	Completed	2022
23.	Mr.Subham Kumar Sisodiya (22MT0381)	Completed	2024
24.	Mr. Subham Thakur (22MT0380)	Completed	2024
25.	Akash Kumar (24MT0035)	Ongoing	
26.	Ankit Kumar Gupta (24MT0066)	Ongoing	

## 6. Publications in peer reviewed journal

Authors	Title of paper	Journal	Volume	Page	Indexed in (SCI/SSCI/SCIE/SCOPUS)
K Barik, P Prusti , <b>Shatrughan Soren</b> , B.C. Meikap, S.K. Biswal	Analysis of iron ore pellets properties concerning raw material mineralogy for effective utilization of mining waste	Powder Technology	400(2022) <b>Q1</b>	1172-59	SCI <b>[IF-5.134]</b>
Akhileshwar Nirala, <b>Shatrughan Soren</b> , N Kumar, Y Shrivastava, R Kamal, A I Al-Mansour and S Alam	Assessing the Mechanical Properties of a New High Strength Aluminum Hybrid MMC Based on the ANN Approach for Automotive Application	Materials	15 (2022) <b>Q2</b>	1-20	SCI <b>[IF-3.623]</b>
Soumya Sahoo, S.N. Sahu, R.K. Sahoo, <b>S. Soren</b> and S. K. Biswal	A Study on Removal of Clay Minerals from Barbil Region Iron Ore; Effect of Scrubbing Followed by Pelletization	Mining, Metallurgy & Exploration	30 (2021) Q4	1-12	SCI <b>[IF-1.020]</b>
Gaurav Jha, <b>S. Soren</b> , K. D. Mehta	Partial substitution of coke breeze with biomass and charcoal in metallurgical sintering	Fuel	278 (2020) <b>Q1</b>	1183-50	SCI <b>[IF-5.128]</b>
Gaurav Jha, <b>S. Soren</b> , K. D. Mehta	Life cycle assessment of sintering process for carbon footprint and cost reduction: A comparative study for coke and biomass-derived sintering process	Journal of Cleaner Production	259 (2020) <b>Q1</b>	1208-89	SCI <b>[IF-7.246]</b>
Gaurav Jha, <b>S. Soren</b>	Study on applicability of biomass in iron ore sintering process	Renewable and Sustainable Energy Reviews	80 (2017) <b>Q1</b>	399–407	SCI <b>[IF-12.110]</b>
A. K. Parida, <b>S. Soren</b> , R. N. Jha, N. Krishnamurthy	Multistage cup drawing of AISI 1040 graded medium carbon steel	Indian Jr of Engg & Material Sc.	25 (2018) <b>Q4</b>	209-216	SCI <b>[IF-0.521]</b>
A. K. Parida, <b>Shatrughan Soren</b> , R. N. Jha, N. Krishnamurthy	Multistage Deep Drawing with Ironing of Al-killed AISI 1040 Graded Medium Carbon Steel: a Parametric Study	Materials Research.	20 (2017) <b>Q4</b>	1111-1120	SCI <b>[IF-0.420]</b>
Anil K Parida, <b>Shatrughan Soren</b> , R. N. Jha & N. Krishnamurthy	Multistage Cup Drawing of Thicker Blanks of Al-Killed AISI 1010 Steel: A Modified Approach	Trans Indian Inst Met	70 (2017) <b>Q4</b>	2059-2070	SCI <b>[IF-1.270]</b>
A. K. Parida, <b>S. Soren</b> , R. N. Jha & S. Sadhukhan	Formability of Al-killed AISI 1040 Medium Carbon Steel for Cylindrical Cup Formation	ISIJ International	56 (2016) <b>Q2</b>	610–618	SCI <b>[IF-1.650]</b>

A. K. Parida, <b>S. Soren</b> , R. N. Jha & S. Sadhukhan	12 mm Thick Circular Blanks of Al-killed AISI 1020 Steel -Applied for Cylindrical Cup Manufacturing by Multistage Deep Drawing with Simultaneous Ironing	Materials Research	19 (2016) <b>Q4</b>	965-976	SCI <b>[IF-0.521]</b>
A. K. Parida, <b>S. Soren</b> , R. N. Jha & N. Krishnamurthy	Cylindrical Cup Manufacturing Using 12 mm Thick Circular Blanks of AISI 1 040 Graded Medium Carbon Steel : an Innovative Approach	ISIJ International	56 (2016) <b>Q2</b>	1452 – 1461	SCI <b>[IF-1.650]</b>
S. G. Chowdhury, V. C. Srivastav, B. R. Kumar & <b>S. Soren</b>	Evolution of texture during accumulative roll bonding (ARB ) and its comparison with normal cold rolled aluminium -manganese alloy	Scripta Materialia	54 (2006) <b>Q1</b>	1691 – 1696	SCI <b>[IF-5.079]</b>
<b>S. Soren</b>	Effect of deformation on the structure and properties of interstitial free steels	Materials Today: Proceedings	4.8 (2017)	9029 - 9038	SCOPUS
A. Nirala, <b>S. Soren</b> , N. Kumar, V. K. Dwivedi, D. R. Kaushal	A comprehensive review on stir casting Al-SiC composite	Materials Today: Proceedings	21 (2020)	1610 - 1614	SCOPUS
Navin Kumar, <b>Shatrughan Soren</b>	Selection of reinforcement for Al/Mg alloy metal matrix composites	Materials Today: Proceedings	21 (2020)	1605 - 1609	SCOPUS
A. Nirala, <b>S. Soren</b> , N. Kumar, D. R. Kaushal	A comprehensive review on mechanical properties of Al B4C stir casting fabricated composite	Materials Today: Proceedings	21 (2020)	1432 - 1435	SCOPUS

## 7. Book chapter published

Authors	Title/Chapter	Title of books	Year of publication	Name of publisher
Gaurav Jha, <b>Shatrughan Soren</b> and K D Mehta	Carbon Footprint Assessment with LCA Methodology	LCA Based Carbon Footprint Assessment: <b>Environmental Footprints and Eco-design of Products and Processes</b>	2021	Springer, Singapore

## 8. Details of Research work and funding from external agencies:

Sl No	Name of PI/Co-PI etc	Sponsoring Authority	Topic Field	Sectioned amount(Rs.)	Amount Released
1	PI: Dr. Shatrughan Soren	TEQIP-II	Studies on Applicability of biomass char for the reduction of iron ore pellets	2,00,000/-	2,00,000/-
2	Dr T. Patel, Dr. S. Hembram & <b>Dr. Shatrughan Soren</b>	NPIU	Synthesis of Cu-deficiency induced various Copper chalcogenides films for optoelectronic application	8,43,000/-	8,43,000/-

3	PI: Dr. Shatrughan Soren	MoS, GoI	Development of sustainable technology for the efficient utilisation of goethitic ore through Magnetising Roasting using Biochar	85,31,600/-	51,22,260/-
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#### 9. Consultancy work details (Completed/Ongoing):

Sl No.	Name of PI/Co-PI etc.	Sponsoring Authority	Date of Sanction & Duration	Total value (excluding taxes) (Rs.)	Amount Released (Rs.)	Completed/ongoing
1	Dr. S. Soren, Dr. Shravan Kumar, Prof. N. R. Mandre	BCCL	13.03.2015 1 month	62530	62530	Completed
2	PI: Prof. S. Bhattacharya, Co-PI: Dr. S. Soren et.al.	NTPC Singrauli	22.09.2015	38,000000	38,000000	Completed
3	PI: Prof. S. Bhattacharya, Co-PI: Dr. S. Soren et.al.	NTPC Vidhyachal	07.09.2015	38,000000	38,000000	Completed

\*Consultancy work completed in the year of 2014 of Rs. 90,000/- as assigned by Head of the Department.

#### 10. Details of Outreach Program citing all relevant details:

Sl No.	Name of PI/Co-PI etc	Sponsored/Non-sponsored (if sponsored name of sponsoring Authority)	Topic/Field	Date of Sanction	Amount Released (Rs.)
1	PI: Prof. R. Venugopal Co-PI: Dr. S. Soren et. al.	Tata Steel, Essar Steel etc.	Agglomeration Techniques	26 <sup>th</sup> Jan-20 <sup>th</sup> Feb 2015	4,04,950/-
2	PI: Prof. R. Venugopal Co-PI: Dr. S. Soren	Tata Steel	Pelletizing and Sintering	23-27 <sup>th</sup> Jan'17	8,05,000/-
3	PI: Dr. S. Soren Co-PI: Prof. R. Venugopal	Tata Steel	Pelletization	19-21 <sup>st</sup> July 2017	2,05,000/-
4	Coordinator: Dr. S. Soren & Dr. S. Kumar Chairman: Dr. R. Venugopal	PMMMNM on Teachers Training	Mineral Processing	26 Jun-01 <sup>st</sup> Jul 2017	-
5	Dr. S. Soren (PI: Nikkam Suresh)	Coal India Ltd.	Coal Processing principles and plant design	2016-17	21,15,000/-

#### 11. Details of seminal/conferences organized:

Sl No.	Organized /Participated	Duration	Topic	Details	External funding through delegates and sponsors
1	Organised (as CONVENOR)	10-12 <sup>th</sup> Oct 2018	International seminar on Mineral Processing Technology	MPT 2018, IIT(ISM) Dhanbad	48,77,213.00



### 12. Details of National /International seminars:

Sl No.	Organized /Participated	Duration	Topic	Details	External funding through delegates and sponsors
1	Participated	4-5 <sup>th</sup> July 2019	Metallurgical sintering using biomass as fuel replacement	APM 2019, IISc Bangalore	PDA
2	Participated	10-12 Oct 2017	Characterization and application of biomass used in metallurgical sintering operation as a fuel replacement	2 <sup>nd</sup> Euro Biomass Summit, London, UK	PDA
3	Participated	1-3 <sup>rd</sup> Feb 2017	Studies on Characterization of Agriculture Wastes for Utilization of in Iron Or Sinter as Potential Fuel	International Seminar on Mineral Processing Technology 2017	PDA
4	Participated	7-9 <sup>th</sup> July, 2016	Effect of Deformation on the structure and properties of Interstitial Free Steels	ICAAMM-2016 at Hyderabad	PDA
5	Participated	12-15 <sup>th</sup> Nov 2014	Effect of deformation on mechanical behaviour of HSLA steel	IIM NMD-ATM-2014	PDA
6	Participated	7-8 <sup>th</sup> Feb 2014	Effect of environmental by the pollutant generated from iron ore mines	National seminar on Recent Advancement in Manufacturing and its Management (RAMM-14)	PDA
7	Participated	18-20 <sup>th</sup> Nov' 2013	Effect of Thermomechanical Controlled Processing Parameters on Microstructures and Mechanical Properties of Microalloyed steel	Inter. Conf. of Structural and Physical Properties of Solids (SPPS-2013) at ISM Dhanbad	PDA

### 13. Details of participation in Institute level activities:

Sl No.	Name of activity	Nature of activity	Role of activity	Specific contribution
1	<b>Convener, DPGC</b> (from 2024 to till date)	Academic	To manage all activities of M Tech and PhD	Smoothly running the program
2	<b>Associate Dean (Students Welfare)</b> (from 2021 to 2023)	Students Welfare	To look after the student's welfare and scholarship	Provide financial support and better environment in the campus
3	<b>Course Coordinator, M Tech (MLE)</b> (from 2013 to 2020)	Academic	To manage academic and field activity of students	Smoothly running the program
4	<b>Member of Senate (Academic Council)</b> (from 2014 to 2017)	Academic	To discuss the policy matter of the Institute	Participation in the meeting

5	<b>Tabulator</b> (from 2013 to 2019)	Academic	To prepare result of B. Tech, M Tech & Research scholar	Publication of result on time
6	<b>Member, Central Time Table</b> , Committee (from 2013 to 2020)	Academic	To prepare time slots for theory and practical classes	Managing the slots properly
7	<b>Warden, Jasper Hostel</b> (from 01.10.2018 to 2020)	Warden	To manage students activity in the hostel	Smooth running of hostel
8	<b>Member</b> , Departmental faculty scrutiny committee ( <b>DFSC</b> ) (from 2018 to 2020)	Academic	To scrutiny the application for the position of Assistant Professor	Scrutiny the application for the position of Faculty
9	<b>Member</b> , Departmental post graduate committee ( <b>DPGC</b> ) (from 2019 to 2020)	Academic	Teaching and research activity of PG students	Revision of M Tech (MLE) syllabus

#### 14. Details of work/contribution towards:

- (a) Lab Development: **Pyro-metallurgical Laboratory** for UG, PG and Research Scholar, **Heat treatment and Mechanical Metallurgy Laboratory**.
- (b) Students Welfare: Faculty advisor of 1<sup>st</sup> year and 2<sup>nd</sup> year M. Tech (Mineral Engineering), Member-DPGC, **Warden- Jasper Hostel**, **Associate Dean (Students welfare)**.

#### 15. Details of expert lecture delivered:

- ❖ Delivered expert lecture on “Understanding Metallurgy of Steel for its Effective Utilization” in TEQIP sponsored conference at BIT Sindri during Oct 27-28, 2018.
- ❖ Delivered expert lecture in the webinar on “Value addition in the fines of Gua Iron Ore Mines (SAIL), Jharkhand” organized by NIT Jamshedpur under *Unnat Bharat Abhiyan*, Ministry of Education, Govt. of India on 12.09.2020.
- ❖ Delivered expert lecture in the webinar on “Sinter grade iron ore fines: Quality related issues at mines and sinter plant” organized by NIT Jamshedpur under *Unnat Bharat Abhiyan*, Ministry of Education, Govt. of India on 12.12.2020.

#### 16. Conference publication from B. Tech and M Tech project:

- Raj Kumar Jaiswal, Dipak kumar Acharya, **Shatrughan Soren**, *Beneficiation of goethite iron ore through magnetizing roasting followed by magnetic separation* IOP Conf. Series: Materials Science and Engineering 748 (2020) 012008
- S. Chavan, A. Ranjan, S.Bacchuwar and **S. Soren**, *Effects of different Parameters on Reduction of Iron Ore Pellets*, Inter. Seminar on Mineral Processing Technology, March 12<sup>th</sup> -14<sup>th</sup>, 2015, Visakhapatnam, AP, India.
- Gaurabh Jha, KM Jyoti and **S. Soren**, “*Effect on Environment by the Pollutants Generated from Iron Ore Mines and its Management*” National Seminal on



Recent Advancement in Manufacturing and its Management (RAMM-2014) held on 07-08<sup>th</sup> Feb'2014 at BIT Sindri, pp-33.

- **S. Soren**, Vivek R, Gaurav Jha and Shalini Gautam, *Effect of Thermomechanical Controlled Processing Parameters on Microstructures and Mechanical Properties of Microalloyed steel*, International conference of Structural and Physical Properties of Solids (SPPS-2013) held on 18-20<sup>th</sup> Nov' 2013 at ISM Dhanbad.

**17. Details of extra-curricular activities:**

- ❖ Member Anti Ragging Squad from 2011 to till date.
- ❖ Judge for 1-2 events in every Annual Tech Fest and Annual Sport since 2011 to 2018.
- ❖ Member-FMME Write-off Committee.
- ❖ Faculty in Charge- RTI of FMME Dept. since 2011 to 2018.
- ❖ Faculty in Charge, Long duration Excursions of FMME Dept.
- ❖ Represented Institute in 8<sup>th</sup> IME 2019: International Mining Exhibition held on 6-9<sup>th</sup> Nov 2019 at Kolkata.
- ❖ Departmental core member-NBA accreditation.
- ❖ Participated in Inter IIT Staff Sport Meet in 2018 and 2019.
- ❖ Library Advisory Committee member, Central Library

**18. Member of professional bodies**

**The Institution of Engineers India**

**Indian Institute of Mineral Engineers**

**Declaration**

I hereby declare that the above mentioned information is correct to the best of my knowledge and belief.



**Date: 05.03.2025**

**(Shatrughan Soren)**