



**3rd International Conference  
on  
Science & Technology of Ironmaking and Steelmaking  
(STIS-2017)  
11 - 13 December 2017  
IIT Kanpur, INDIA**

# TECHNICAL PROGRAMME

**STIS-2017**

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# The 3<sup>rd</sup> International Conference on Science and Technology of Ironmaking & Steelmaking



**STIS-2017**

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## STIS-2017

INAUGURAL SESSION	
<b>DAY : I</b>	<b>Venue: Outreach Auditorium</b>
Date: 11 <sup>th</sup> December	Forenoon
Time: 9.00a.m-9.30a.m	
Welcome addresses: 9.00a.m-9.15a.m	
<i>Inauguration of STIS-2017 by Prof. Manindra Agrawal, Director, IIT Kanpur</i>	

PLENARY SESSION	
<b>DAY : I</b>	<b>Venue: Outreach Auditorium</b>
Date: 11 <sup>th</sup> December	Forenoon
Time: 9.30a.m-12.45p.m	Tea break: 10.40a.m - 11.00a.m
<b>Co-Chair:</b> Prof. R.I.L.Guthrie, McGill University, Canada and Prof. V. Ramaswamy, PSGCT, Coimbatore, India	

SCHEDULE OF PRESENTATIONS			
Serial no.	Time & paper code	Speaker	Title of presentation
1	9.35-10.05 11FNOAP1	Prof. Veena Sahajwalla University of NSW, Australia	Grenew technology for sustainable ironmaking: waste to zero-coke resources
2	10.05-10.35 11FNOAP2	Prof. Olle Wijk OWAB, Sweden	Aspect on ladle refining of liquid steel
<b>Tea break: 10.40a.m-11.00a.m</b>			
3	11.05-11.35 11FNOAP3 -	Prof. Shin-ya Kitamura Tohoku University, Japan	Extraction and recovery of valuable elements from steelmaking slag
4	11.35-12.05 11FNnOAP4	Prof. Brian Thomas Colorado School of Mines, USA	Continuous casting of steel: computational modelling and validation
5	12.05-12.35 11FNOAP5	Mr. Anand Sen Tata Steel, India	Marshalling in-house research for improvement in plant performance
<b>Summary by Chair</b>			



**STIS-2017**

<b>DAY : I</b>		<b>Venue: L-10</b>	
Date: 11 <sup>th</sup> December		Afternoon	
Time: 2.00p.m-5.30p.m		Tea break: 3.30p.m-3.50p.m	
<b>Session: 11ANL10 (Ironmaking fundamentals)</b>			
Chair: Mr. Alok Chandra, JSW Steel Ltd., Dolvi, India			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	2.00-2.30 11ANL10KN1	Dr. Koji Saito Nippon Steel & Sumitomo Metal Corporation, Japan	Recent Research & Development topics of Iron-making technologies in NSSMC
2	2.30-3.00 11ANL10KN2	Prof. Brian Monaghan University of Wollongong Australia	Coke characterization and its reactivity in a Blast Furnace
3	3.00-3.30 11ANL10KN3	Prof. N. N. Viswanathan IIT Bombay, India	A methodology to quantify the physico-chemical phenomena during induration of a single magnetite pellet
<b>Tea break: 3.30p.m-3.50p.m</b>			
4	3.50-4.20 11ANL10KN4	Dr. D. Bandyopadhyay NML (CSIR), Jamshedpur, India	Low temperature reduction of iron ore fines
5	4.20-4.35 11ANL10IC1	Ms. Snigdha Ghosh IIT Bombay, India	Modeling of static gas hold up in a blast furnace
6	4.35-5.00 11ANL10I1	Prof. Tom Honeyands New Castle University, Australia	Analysis of pressure drop in a softening and melting test for lump iron ore
Summary by Chair			



**STIS-2017**

<b>DAY : I</b>		<b>Venue: L-11</b>	
Date: 11 <sup>th</sup> December		Afternoon	
Time: 2.00p.m-5.30p.m		Tea break: 3.30p.m-3.50p.m	
<b>Session: 11ANL11 (Steelmaking fundamentals )</b>			
Chair: Prof. B. Deo, IIT Bhubaneswar, India			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	2.00-2.30 11ANL11KN5	Prof. Kenneth Coley McMaster University, Canada	Observations on factors affecting mass transfer during slag metal reactions relevant to steelmaking
2	2.30-3.00 11ANL11KN6	Prof. S. Seetharaman KTH, Sweden	Experimental studies of two-phase reactions involving slags in steelmaking
3	3.00-3.30 11ANL11KN7	Prof. Ronald J. O'Malley Missouri University of Science and Technology, USA	Factors affecting the evolution of inclusion populations during steelmaking and casting processes
<b>Tea break: 3.30p.m-3.50p.m</b>			
4	3.50-4.20 11ANL11KN8	Prof. P. Chris Pistorius CMU, Pittsburgh, USA	How and why inclusions change chemically during steel processing
5	4.20-4.35 11ANL11C2	Mr. Takanori Yoshioka KTH, Sweden	The influence of Aluminum concentration on the formation of Calcium-aluminate inclusions in a steel melt during an LF process
6	4.35-4.50 11ANL11C3	Mr. Kanan K. Sahoo RINL, Visakhapatnam, India	Kinetic model of calcined dolomite flux dissolution in BOF steelmaking slag
7	4.50-5.20 11ANL11KN9	Dr. V.K.Gupta IIT-ISM, Dhanbad, India	Viscosity models and structural aspects of metallurgical slags and mould fluxes
<b>Summary by Chair</b>			



**STIS-2017**

<b>DAY : I</b>		<b>Venue: L-12</b>	
Date: 11 <sup>th</sup> December		Afternoon	
Time: 2.00p.m-5.30p.m		Tea break: 3.30p.m-3.50p.m	
<b>Session: 11ANL12 (Beneficiation and burden preparation)</b>			
Chair: Prof. G. G. Roy, IIT Kharagpur, India			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	2.00-2.30 11ANL12KN10	Prof. K. A. Natarajan IISc. Bengaluru, India	Bio-processing technologies for iron ore beneficiation
2	2.30-3.00 11ANL12KN11	Dr. Pradip TCS Pune, India	Development of innovative beneficiation strategies for alumina rich iron ores and high ash coking coals for the Indian steel industry
3	3.00-3.30 11ANL12KN12	Prof. S.P. Mehrotra IIT Gandhinagar, India	Processing of low grade iron ores and their effective usage for iron-making
<b>Tea break: 3.30p.m-3.50p.m</b>			
4	3.50-4.05 11ANL12C4	Mr. Vijesh G JSW Salem, India	Reducing the standard deviation of %FeO in sinter
5	4.05-4.20 11ANL12C5	Mr. Ravikant Sagar JSW Toranagallu, India	An innovative method for improving green pellet properties
6	4.20-4.35 11ANL12C6	Dr. Nikhil Dhawan IIT Roorkee, India	Evaluation of compressive breakage for banded iron ores
7	4.35-4.50 11ANL12C7	Dr. Dayanad Paswan NML(CSIR), Jamshedpur, India	Influence of binder composition on briquetting of coal slacks
8	4.50-5.15 11ANL12I2	Prof. Anurag Tripathi IIT Kanpur, India	Characterisation of the blast furnace granular feed using laboratory experiments and DEM simulations
9	5.15-5.30 11ANL12C8	Mr. Reji Mathai JSW Salem, India	Converting challenges into opportunity during 10 years of operation at JSW non recovery coke oven
<b>Summary by Chair</b>			



**STIS-2017**

<b>DAY : I</b>		<b>Venue: L-13</b>	
Date: 11 <sup>th</sup> December		Afternoon	
Time: 2.00p.m-5.30p.m		Tea break: 3.30p.m-3.50p.m	
<b>Session: 11ANL13 (Burden material and Ironmaking )</b>			
Chair: Prof. P. K. Sen, IIT Kharagpur, India			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	2.00-2.30 11ANL13KN13	Prof. N. B. Ballal IIT Bombay, India	Some insights into iron ore sintering in the context of changing ore scenario
2	2.30-2.55 11ANL13I3	Prof. Shigeru Ueda, Tohoku University, Japan	Motion of droplet on gasified metallurgical coke
3	2.55-3.10 11ANL13C9	Mr. N. Naveen Kumar JSW Salem, India	Removal of alkali contents from Blast furnace flue dust
4	3.10-3.25 11ANL13C10	Mr. Dharam Jeet Gavel Delft University of Technology, The Netherlands	Characterisation of iron ore pellet behaviour under nut coke mixed charge condition
<b>Tea break: 3.30p.m-3.50p.m</b>			
5	3.50-4.05 11ANL13C11	Mr. Ammasi A NML, Jamshedpur, India	Influence of carbonaceous materials on the quality of hematite ore pellets
6	4.05-4.20 11ANL13C12	Dr. Ashok Vaish MS University of Baroda, Vadodara, India	Reduction kinetics of low grade iron ore pellets using non coking coal and hydrogen gas as reductant
7	4.20-4.50 11ANL13KN14	Prof. P. S. Assis Universidade Federal de Ouro Preto , Brazil	Biogas: the future fuel for producing iron and steel
8	4.50-5.20 11ANL13KN15	Prof. Xuewei Lv Chongqing University China	Wettability of silica by calcium ferrite slag
<b>Summary by Chair</b>			



## STIS-2017

<b>DAY : II</b>		<b>Venue: L-10</b>	
Date: 12 <sup>th</sup> December		Forenoon	
Time: 9a.m-12.45p.m		Tea break: 10.30a.m-10.50a.m	
<b>Session: 12FNL10 (Ironmaking )</b>			
Chair: Prof. N. B. Ballal, IIT Bombay, India			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	9.00-9.30 12FNL10KN16	Dr. Iakov Gordon Hatch, Canada	Principles for selection and risk assessment of new technologies- a case study for ironmaking process technology selection
2	9.30-10.00 12FNL10KN17	Dr. Rameshwar Sah JSW Toranagallu, India	Management of variations in raw materials properties and Improvements for Cost Effectiveness of Sustainable Iron Making
3	10.00-10.15 12FNL10C13	Dr. Anrin Bhattacharyya Montanuniversitaet Leoben, Austria	A holistic approach for the characterization of coke for optimized usage in the blast furnace ironmaking process
4	10.15-10.30 12FNL10C14	Mr. M. Singhai JSW Dolvi, India	Improvement in aerodynamics of sinter pallet car using CFD studies
<b>Tea break: 10.30 a.m-10.50 a.m</b>			
5	10.50-11.20 12FNL10KN18	Prof. Govind S. Gupta IISc. , Bengaluru, India	Some comments on multiphase flow in a packed bed
6	11.20-11.35 12FNL10C15	Mr. M. Sathish Kumar JSW Salem, India	Reduction of iron loss through dust generation in blast furnace
7	11.35-11.50 12FNL10C16	Mr. Krishna Kumar Sinha MECON, Ranchi, India	Opportunity and challenges in installation and operation of large Blast furnace in India
8	11.50-12.05 13FNL10C17	Mr. Binay Kumar IIT Kharagpur, India	Modeling of ironmaking in rotary hearth furnace
9	12.05-12.20 12FNL10C18	Mr. Arghya Mazumdar RINL, Vishakhapatnam India	Relation between sulphur and silicon in blast furnace hot metal at Vishakhapatnam steel plant
Summary by Chair			





**STIS-2017**

<b>DAY : II</b>		<b>Venue: L-11</b>	
Date: 12 <sup>th</sup> December		Forenoon	
Time: 9a.m-12.45p.m		Tea break: 10.30 a.m-10.50 a.m	
<b>Session: 12FNL11 (Mini sessions I and II)</b>			

<b>Mini session: I (Refractory in steelmaking)</b>			
Chair: Mr. Tarun Basu, Consultant, Kolkata ,India			
<b>SCHEDULE OF PRESENTATIONS</b>			
Serial no.	Time & paper code	Speaker	Title of presentation
1	9.00-9.30 13FNL11KN19	Dr. Hatsuo Taira Kurosaki Harima, Japan	Reaction between molten steel and continuous casting materials
2	9.30-10.00 13FNL11KN20	Dr. I. N. Chakraborty Calderys Refractories Ltd. Nagpur, India	Genesis of monolithic refractories binder system and installation
3	10.00-10.15 13FNL11C19	Mr. Gernot Hackl RHI-AG, Austria	Innovative flow control refractories for clean steel production
Summary by Chair			

**Tea break: 10.30-10.50 am**

<b>Mini Session: II ( Energy and emissions in Iron and steelmaking)</b>			
Chair: Mr. Bhaskar Roy, M.N. Dastur & Co., Kolkata,India			
<b>SCHEDULE OF PRESENTATIONS</b>			
Serial no.	Time & paper code	Speaker	Title of presentation
1	10.50-11.20 13FNL11KN21	Prof. P. K. Sen IIT Kharagpur, India	Integration of Midrex based process configurations in steel plant for emissions and energy analysis
2	11.20-11.50 13FNL11KN22	Prof. Johannes Schenk Montanuniversitaet Leoben Austria	Towards CO2 lean ironmaking – A reasonable way for India’s steel industry
3	11.50-12.15 13FNL11I4	Prof. Kinnor Chattopadhyay University of Toronto Toronto, Canada	Dangerous emissions from steelmaking- The story behind Mn and Pb emissions
Summary by Chair			



## STIS-2017

<b>DAY : II</b>		<b>Venue: L-12</b>	
Date: 12 <sup>th</sup> December		Forenoon	
Time: 9a.m-12.45p.m		Tea break: 10.30a.m-10.50a.m	
<b>Session: 12FNL12 ( Steelmaking I)</b>			
Chair: Dr. Joydeep Sengupta, ArcelorMittal Global R&D, Canada			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	9.00-9.30 12FNL12KN23	Dr. Sunil Kumar Hatch, Canada	Application of an effective methodology to enhance the operational efficiency and cost competitiveness of steel plants
2	9.30-10.00 12FNL12KN24	Prof. Brahma Deo IIT Bhubaneswar, India	Kinetics of dissolution of lime in steelmaking slags.
3	10.00-10.30 12FNL12KN25	Dr. Sarbendu Sanyal JSW Toranagallu, India	Experiences with calcium treatment of steel
<b>Tea break: 10.30a.m-10.50a.m</b>			
4	10.50-11.20 12FNL12KN26	Dr. Kamalesh Mandal Steel Dynamics Columbus, USA	Reduction of steelmaking cost using scrap and alloy modeling and optimization techniques
5	11.20-11.35 12FNL12C20	Mr. Ankur Agnihotri Vardhman Special Steels Ltd., Ludhiana, India	A steady state material balance model and its application to control post tapping steel chemistry in LRF
6	11.35-12.00 12FNL12I5	Mr. Arup K. Ghose Praxair India Ltd., Bengaluru, India	Dilute O <sub>2</sub> combustion and coherent jet Technology in steelmaking
7	12.00-12.15 12FNL12C21	Mr. Jing Sung Han Hanyang University, South Korea	Influence of CaF <sub>2</sub> content in ladle slag and temperature on slag
8	12.15-12.30 12FNL12C22	Mr. Santosh Kumar BSL (SAIL), Bokaro, India	Role of slag in desulphurisation during treatment at ladle refining Unit
<b>Summary by Chair</b>			



**STIS-2017**

<b>DAY : II</b>		<b>Venue: L-13</b>	
Date: 12 <sup>th</sup> December		Forenoon	
Time: 9a.m-12.45p.m		Tea break: 10.30a.m-10.50a.m	
<b>Session: 12FNL13 (Modelling I)</b>			
Chair: Prof. Yogeshwar Sahai, Ohio State University, USA			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	9.00-9.30 12FNL13KN27	Dr. A. Mukhopadhyay ANSYS Inc., USA	Fusion modeling: delivering solutions to challenging engineering problems with data from all sources
2	9.30-10.00 12FNL13KN28	Prof. Sudipto Ghosh IIT Kharagpur, India	Fluctuation of bulging during continuous casting of thin steel slab and its effect on mould level fluctuation: mathematical modeling and genetic algorithm based optimization
3	10.00-10.15 12FNL13C23	Mr. Sooraj S IIT Kharagpur, India	A novel mathematical model for reduction of iron ore-coal composite pellets in Rotary Hearth Furnace
4	10.15-10.30 12FNL13C24	Mr. Rohan Sharma ANI Technologies Bengaluru, India	The role of pre existing flows in steelmaking tundish on the onset of slag vortices during emptying: a numerical study
<b>Tea break: 10.30a.m-10.50a.m</b>			
5	10.50-11.15 12FNL13I6	Prof. P. K. Jha IIT Roorkee, India	Investigation of meniscus level fluctuation during electromagnetic stirring in continuous casting mold
6	11.15-11.30 12FNL13C25	Mr. D. Satish Kumar JSW Toranagallu, India	Improvement in steel cleanliness in unique multi strand billet caster tundish through physical and mathematical modelling
7	11.30-11.45 12FNL13C26	Mr. Umesh Singh TCS Pune, India	Fast prediction of superheat at the tundish outlet stream by integrating CFD and regression technique
8	11.45-12.00 12FNL13C27	Mr. V.T. Mantripragada IIT Madras, India	Mixing in dual plug fitted ladle
9	12.00-12.15 12FNL13C28	Dr. Enif Gutierrez Instituto Tecnológico de Morelia, Mexico	Mathematical study of inclusion removal in the tundish, nozzle and mould considering the slide gate aperture
10	12.15-12.30 12FNL13C29	Dr. Donghui Li University of Toronto, Canada	Physical modeling of fluid flow and inclusion removal in steel continuous casting tundish using various flow modifiers
Summary by Chair			



**STIS-2017**

<b>DAY : II</b>		<b>Venue: Outreach Auditorium</b>	
Date: 12 <sup>th</sup> December		Afternoon	
Time: 2.00p.m-5.30p.m		Tea Break: 3.20p.m-3.40p.m	
<b>Special session on Ferrous Metallurgy Education</b>			
Chair: Prof. S. Seetharaman, KTH, Sweden			

<b>PERSPECTIVES</b>			
<b>Serial no.</b>	<b>Time</b>	<b>Speaker</b>	<b>Theme of presentation</b>
Opening remarks by the Chair ( 2.00pm -2.05pm)			
1	2.05-2.15	Prof. Joohyun Park, Hanyang University, South Korea	<b>Education of Ferrous Process Metallurgy: present and future</b>
2	2.17-2.27	Prof. Brian Monaghan, University of Wollongong, Australia	
3	2.29-2.39	Prof. H. Matsuura, Tokyo University, Japan	
4	2.41-2.51	Prof. L. Zhang, USTB, China	
5	2.53-3.03	Prof. S. P. Mehrotra, IITGN, India	
Summary by Chair			

**Tea break: 3.20p.m-3.40p.m**

<b>PANEL DISCUSSION</b>			
<b>Serial no.</b>	<b>Time</b>	<b>Panelists</b>	<b>Theme</b>
Opening remarks by the Chair (3.40p.m-3.45p.m)			
1	3.45-4.30	Prof. P. K. Sen, IIT Kharagpur, India	<b>Tailoring of Ferrous Metallurgy education to meet future challenges</b>
2		Prof. N. B. Ballal, IIT Bombay, India	
3		Dr. V. Ramaswamy PSGCT, Coimbatore, India	
4		Dr. D. Mukherjee NIFFT, Ranchi, India	
Questions & answer ( 4.30p.m-5.15p.m)			
Final remarks by Chair			



**STIS-2017**

<b>DAY : III</b>		<b>Venue: L-10</b>	
Date: 13 <sup>th</sup> December		Forenoon	
Time: 9a.m-12.45p.m		Tea break: 10.30a.m-10.50 a.m	
<b>Session: 13FNL10 (Steelmaking II)</b>			
Chair: Dr. D. Bandopadhyaya, NML(CSIR), Jamshedpur, India			

<b>SCHEDULE OF PRESENTATIONS</b>			
Serial number	Time and paper code	Speaker	Title of presentation
1	9.00-9.30 13FNL10KN29	Prof. Y. Sahai, Ohio State University, USA	Melt temperature variation in continuous casting and its Influence on melt flow in tundish and cast steel quality
2	9.30-10.00 13FNL10KN30	Prof. Joohyun Park Hanyang University, South Korea	Desulfurization kinetics and inclusion formation mechanism in high-S containing steel during secondary refining process
3	10.00-10.15 13FNL10C30	Mr. Ravi Chandra JSW Salem, India	Behaviour of hydrogen in vacuum degassing in liquid steel in industrial heat
4	10.15-10.30 13FNL10C31	Mr. Prince K. Singh IIT Kanpur, India	Flow regimes inside ladle shroud: physical and mathematical modelling investigation
<b>Tea break: 10.30a.m-10.50a.m</b>			
5	10.50-11.15 13FNL10I7	Prof. Saul Garcia Hernandez Instituto Tecnológico de Morelia, Mexico	Mathematical study of the slag layer aperture reduction using a dissipative ladle shroud during ladle change over operation in tundish
6	11.15-11.40 13FNL10I8	Dr. Anand Senguttuvan M. N. Dastur & Co., Kolkata, India	Simulations of slag entrainment in ladle metallurgy
7	11.40-12.05 13FNL10I9	Dr. Siddhartha Misra Tata Steel, Jamshedpur, India	CAS OB experience at Kalinganagar works of Tata Steel
8	12.05-12.30 13FNL10I0	Prof. Somnath Basu IIT Bombay, India	Development in in-situ alloying during electro slag refining of low alloy steel
Summary by Chair			



**STIS-2017**

<b>DAY : III</b>		<b>Venue: L-11</b>	
Date: 13 <sup>th</sup> December		Forenoon	
Time: 9a.m-12.45p.m		Tea break: 10.30a.m-10.50a.m	
<b>Session: 13FNL11 (Inclusions and clean steel )</b>			
Chair: Dr. Sunil Kumar, Hatch, Canada			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	9.00-9.30 13FNL11KN31	Prof. H. Matsuura Tokyo University, Japan	Evolution of non-metallic inclusions in molten steel during refining and in solid steel during heating
2	9.30-10.00 13FNL11KN32	Prof. Roderick Guthrie McGill University, Canada	Gas Injection into ladle shrouds; how to deep clean liquid steel
3	10.00-10.15 13FNL11C32	Mr. Deepoo Kumar Carnegie Mellon University, USA	Comparing agglomeration behaviour of inclusions observed on steel-argon interface in confocal laser scanning microscope during an LF process
4	10.15-10.30 13FNL11C33	Mr. Sanjay V. Gurme JSW Dolvi, India	Development of a modified CaFeAl cored wire for LCAK steel for improved calcium treatment and clean steel production
<b>Tea break: 10.30a.m-10.50a.m</b>			
5	10.50-11.20 13FNL11KN33	Prof. Lifeng Zhang University of Science and Technology Beijing, China	Transient phenomena of inclusions during steel refining, casting and rolling processes: amount, size, shape and composition
6	11.20-11.45 13FNL11I11	Dr. Prakash Srirangam The University of Warwick UK	Characterization of inclusions in steels
7	11.45-12.00 13FNL11C34	Mr. Ashok Kamaraj NML, Jamshedpur, India	Control and analysis of non metallic inclusions
8	12.00-12.15 13FNL11C35	Mr. Gobinath R JSW Salem, India	Study on inclusion composition at various stages of ladle metallurgy process at JSW steel Salem works
9	12.15-12.40 13FNL11I12	Prof. Niloy K. Nath RSCOE, Savitribai Phule Pune University, India	Real time model for single and multi strand tundish for superheat and composition control during grade transition
Summary by Chair			



**STIS-2017**

<b>DAY : III</b>		<b>Venue: L-12</b>	
Date: 13 <sup>th</sup> December		Forenoon	
Time: 9.00a.m-12.30p.m		Tea break: 10.30a.m-10.50a.	
<b>Session: 13FNL12( Modelling and simulations)</b>			
Chair: Prof. S. P. Mehrotra, IIT Gandhinagar, India			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	9.00-9.30 13FNL12KN34	Dr. Tathagata Bhattacharya ArcelorMittal Global R&D, USA	Simulation driven process development: Enabling smart manufacturing via high performance computing (HPC) and data-analytics in steelmaking
2	9.30-9.45 13FNL12C36	Mr. Krashnavtar Essar Steel Ltd., Hazira, India	Transient, two phase simulation of grade intermixing phenomena under constant throughput condition
3	9.45-10.00 13FNL12C37	Mr. C. Srishilan IIT Madras, India	Thermodynamic modelling of COREX melter gasifier using FACTSAGE
4	10.00-10.25 13FNL12I13	Dr. B. P. Gautham TCS Pune, India	Integrated computational modeling for material and process design for steelmaking
<b>Tea break :10-30a.m-10.50 a.m</b>			
4	10.50-11.20 13FNL12IKN35	Prof. Jose de Jesus Barreto Instituto Tecnológico de Morelia, Mexico	Physical and mathematical modelling as a process engineering tool for the enhancement of steelmaking and casting operations.
5	11.20-11.45 13FNL12I14	Prof. Sabita Sarkar IIT Madras, India	On modeling of modified Single strand slab caster tundish
6	11.45-12.00 13FNL12C38	Mr. Rishikesh Mishra, IIT Kanpur ,India	Multiphase flow modelling in ladles during emptying: the role of a preexisting velocity field in the ladle
7	12.00-12.30 13ANL12KN36	Prof. Alberto N. Conejo Morelia Technological Institute Morelia, México	Comparison between symmetric and non-symmetric radial position of gas injection elements on mixing time and ladle eye using two nozzles with different separation angles
Summary by Chair			



**STIS-2017**

<b>DAY : III</b>		<b>Venue: L-10</b>	
Date: 13 <sup>th</sup> December		afternoon	
Time: 2.00p.m-3.50p.m		Tea break: 3.50p.m-4.10p.m	
<b>Session: 13FNL10 (Alternative iron making, smelting reduction and pretreatment)</b>			
Chair: Prof. Rajiv Sekhar, IIT Kanpur, India			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	2.00-2.30 13FNL10KN37	Dr. Don Hyung Kim POSCO, South Korea	A pioneer of the alternative ironmaking process in the raw materials and the environment
2	2.30-3.00 13FNL10KN38	Dr. G. G. Roy IIT Kharagpur, India	Sponge iron production in rotary hearth furnace: Investigation towards multi-layer bed
3	3.00-3.30 13FNL10KN39	Dr. B. B. Agrawal RDCIS( SAIL), Ranchi, India	Emerging trends in Ironmaking technology
4	3.30-3.45 13FNL10C39	Mr. Frank Schrama Delft University of Technology The Netherlands	Desulphurisation of Hisarna hot metal- a comparative study based on plant data
Summary by Chair			





**STIS-2017**

<b>DAY : III</b>		<b>Venue: L-11</b>	
Date: 13 <sup>th</sup> December		Afternoon	
Time: 2.00 p.m-3.50 p.m		Tea break: 3.50p.m-4.10 p.m	
<b>Session: 13ANL11 (Casting processes and simulations)</b>			
Chair: Dr. Aniruddha Mukhopadhyay, Ansys Inc., USA			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	2.00-2.30 13ANL11KN40	Prof. Wanlin Wang China South Central University China	Study of molten steel during continuous casting through mold simulator technique
2	2.30- 3.00 13ANL11KN41	Prof. Amarendra K. Singh IIT Kanpur, India	Modeling of defect evolution in casting
3	3.00-3.25 13ANL11I15	Mr. Prafull Patil Kalyani Carpenter Special Steels Ltd., Pune, India	FEM simulation and characterization of low alloy steel ingot casting
4	3.25-3.40 13ANL11C40	Ms. Priyambada Praharaj RSCOE, Savitribai Phule Pune University ,India	Numerical Simulation and Experimental Study of ingot heating process for time and energy efficiency for quality and productivity of the process.
Summary by Chair			



**STIS-2017**

<b>DAY : III</b>		<b>Venue: L-12</b>	
Date: 13 <sup>th</sup> December		Afternoon	
Time: 2.00p.m- 3.50p.m		Tea break: 3.50p.m-4.10 p.m	
<b>Session: 13ANL12 (Ingot and continuous casting)</b>			
Chair: Dr. Kamallesh Mandal, Steel Dynamics Columbus, USA			

<b>SCHEDULE OF PRESENTATIONS</b>			
<b>Serial no.</b>	<b>Time &amp; paper code</b>	<b>Speaker</b>	<b>Title of presentation</b>
1	2.00-2.30 13ANL12KN42	Dr. Joydeep Sengupta ArcelorMittal, Canada	Can etched standards for centerline segregation rating systems be eliminated?
2	2.30-3.00 13ANL12KN43	Dr. S. K. Ajmani Tata Steel Ltd. Jamshedpur, India	High-speed continuous casting of peritectic grade of steels
3	3.00-3.25 13ANL12I16	Mr. Amitava Paul RDCIS(SAIL), Ranchi, India	Effect of bolt holes of mould plate on hot face temperature of continuous casting mould
4	3.25-3.40 13FNL12C41	Ms. Neelam Sharma IIT Bombay, India	Investigation on the formation of cracks in continuously cast Nb-V Micro-alloyed steel through physical simulation and microstructural examination
Summary by Chair			



**STIS-2017**

<b>DAY : III</b>		<b>Venue: Outreach Auditorium</b>	
Date: 13 <sup>th</sup> December		Afternoon	
Time: 4.15 p.m-5.30 p.m			
<b>Felicitation function</b> <b>(Felicitation of Prof. A. Ghosh, former Professor of Metallurgical Engineering, IIT Kanpur)</b> <b>and</b> <b>Valedictory Session</b>			
Co-Chair: Prof. Dipak Mazumdar, IIT Kanpur and Prof. Govind S. Gupta, IISC, Bengaluru			

