



ISCI International Simulation Conference of India

2nd-4th February 2012

Organized by:

Industrial Engineering and Operations Research, IIT Bombay

Production Modeling India

Operational Research Society of India - Mumbai Chapter

Venue: Victor Menezes Convention Centre, IIT Bombay

www.indiasim.org



Schedule for the ISCI 2012 Conference
Venue: Victor Menezes Convention Center (VMCC), IIT Bombay

DAY 0: Wed, 1st February 2012

4:00pm – 7:00pm	Conference Registration Venue: Industrial Engineering and Operations Research Mechanical Engineering Building, IIT Bombay.
-----------------	--

Day I: Thur, 2nd February 2012

8:30 am onwards	Registration (Ground Floor, VMCC)		
9.00 - 9.30 am	Inauguration of the Conference (VMCC Main Auditorium) <i>Chief Guest: Dr. Rangan Banerjee, Dean R & D, IIT Bombay</i>		
9.30 - 10.30 am	Keynote (VMCC Main Auditorium) Dr. Sanjay Jain, The George Washington University, USA <i>Simulation - The Good, The Bad, and The Ugly</i>		
10.30 - 11.00 am	Tea Break - Ground Floor Foyer		
11.00 - 12.40 pm	Session A1 (Seminar Room 03) <i>Supply Chain Modeling & Analysis</i>	Session A2 (Seminar Room 02) <i>General Engineering 1</i>	
12.40 - 2.00 pm	Lunch Break - Ground Floor Cafeteria		
2.00 - 3.00 pm	Keynote (VMCC Main Auditorium) Dr. Mark Elder, Simul8 Corporation, USA <i>Simulation drives efficient management</i>		
3.00 - 4.00 pm	Keynote (VMCC Main Auditorium) Dr. Shalabh Bhatnagar, IISc Bangalore <i>Optimization via Simulation: An Overview and Some Recent Results in Discrete Parameter Optimization</i>		
4.00 - 4.30 pm	Tea Break - Ground Floor Foyer		
4.30 - 6.00 pm	Session B1 (Seminar Room 03) <i>Monte Carlo Methods</i>	Session B2 (Seminar Room 02) <i>Industry Case Study 1</i>	Session B3 (Seminar Room 01) <i>Simul8 Training Session 1</i>
7:30 – 9:30pm	Conference Dinner Guest House Lawns, IIT Bombay Campus		

Day II: Fri, 3rd February 2012

8:30 am onwards	Registration (Ground Floor, VMCC)		
9.00 - 10.30 am	Session C1 (Seminar Room 03) <i>Manufacturing 1</i>	Session C2 (Seminar Room 02) <i>System Dynamics & Systems Approach</i>	Session C3 <u>from 9:30am</u> (Seminar Room 01) <i>Vendor Track 1</i> ANSYS, EXTENDSIM
10.30 - 11.00 am	Tea Break - Ground Floor Foyer		
11.00 - 12.40 pm	Session D1 (Seminar Room 03) <i>Transportation</i>	Session D2 (Seminar Room 02) <i>General Engineering 2</i>	Session D3 (Seminar Room 01) <i>Vendor Track 2</i> SIMUL8, PMI, FLEXSIM
12.40 - 2.00 pm	Lunch Break - Ground Floor Cafeteria		
2.00 - 3.00 pm	Keynote (VMCC Main Auditorium) Dr. Randy Combs, General Motors, USA <i>Challenges and opportunities in incorporating simulation as a decision support tool for automotive manufacturing</i>		
3.00 - 4.00 pm	Keynote (VMCC Main Auditorium) Dr. Björn Johansson, Chalmers University of Technology, Sweden <i>Simulation for Sustainable Manufacturing</i>		
4.00 - 4.30 pm	Tea Break - Ground Floor Foyer		
4.30 - 6.10 pm	Session E1 (Seminar Room 03) <i>Financial Engineering</i>	Session E2 (Seminar Room 02) <i>Industry Case Study 2</i>	
6:00 – 7:00 pm	Session E3 (Seminar Room 01) <i>Simul8 Training Session 2</i>		

Day III: Sat, 4th February 2012

8:30 am onwards	Registration (Ground Floor, VMCC)	
9.00 - 10.30 am	Session F1 (Seminar Room 03) <i>Manufacturing 2</i>	Session F2 (Seminar Room 02) <i>Simulation Software & Modeling</i>
10.30 - 11.00 am	Tea Break - Ground Floor Foyer	
11.00 - 12.00	Keynote (likely via skype) (VMCC Main Auditorium) Dr. Young Jun Son, The University of Arizona, USA <i>Distributed Federation of Multi-Paradigm Simulations & Decision Models for Extended Manufacturing and Service Enterprises</i>	
12.00 - 1.00 pm	Panel Discussion (VMCC Main Auditorium) <i>The Future of Research and Applications of Discrete Event Simulation In the Indian Industry</i>	
1.00 - 2.00 pm	Lunch Break - Ground Floor Cafeteria	

List of Exhibitors on all conference days (Venue: Ground Floor, VMCC)

SIMUL8	Production Modeling India (PMI)	ANSYS	Extendsim	Flexsim
--------	------------------------------------	-------	-----------	---------

Details of the papers in individual sessions, along with the paper id, are given in the next sheet

DAY I: THURSDAY, 2ND February 2012

Session A1: Supply Chain Modeling & Analysis

11:00am – 12:40pm @ Seminar Room 03

Chair: Dr. Sanjay Jain, The George Washington University USA

1. Simulation modeling for supply chain sourcing under risk (#37)
Prasannavenkatesan Shanmugam and Kumanan Somasundaram
 2. A flexible framework for supply chain modelling and simulation (#71)
George Paes, Nagesh Phaniraj and Anil Kumar
 3. Agent based simulation for measuring performance of supply chain network – A case study of Cable wires manufacturing company (#26)
Akanksha Mishra and Ramaa A
 4. Solving Multi-Objective Supply Chain Problem by NSGA-II Algorithm (#43)
Susmita Bandyopadhyay and Ranjan Bhattacharya
-

Session A2: General Engineering 1

11:00am – 12:40pm @ Seminar Room 02

Chair: Dr. Mohan Kumar Pradhan, MANIT, Bhopal

5. Tracking controller using backstepping combined with fuzzy for steady mass flow in a wind tunnel (#13)
Rini Jones S.B., P. Poongodi and Binu L.S.
 6. Finite Element Modeling, Simulation and Experimental Validation of Linear Generator (#22)
C. Dewangan, R. T. Keshwani and Y. K. Taly
 7. Finite element modelling and simulation for the development of a ultrasonic guided wave liquid level sensor (#46)
Subhash N N, Krishnan Balasubramaniam and Sri Harsha K
 8. Comprehensive Study on Various Techniques Dedicated for Hydrogen Cooling Systems in terms of System Reliability (#31)
Gyan Biswal, M.L. Dewal and R P Maheshwari
 9. Simulation of Left Main Coronary Bifurcation under Different Cases of Stenosis and Assessing the Possibility of Plaque Proliferation using Computational Fluid Dynamics (#14)
Binu L.S. and A. Sukesh Kumar
-

Session B1: Monte Carlo Methods

4:30pm – 6:00pm @ Seminar Room 03

Chair: Dr. Shalabh Bhatnagar, IISc Bangalore

10. Predicting biased sequences in a game of dice-Experiment using Support Vector Machines (#52)
Parijat Sinha and Barath Thangaraj
 11. Stochastic Differential Equations simulation using GPU (#57)
Narayana Darapaneni, Prakalp Somawanshi and Meghana Joshi
 12. Simulation study to compare the effectiveness of top down and bottom up strategies for forecasting autoregressive demands (#23)
Ajoram K Salim, T.Radha Ramanan and Jayasree N
 13. Time Sequential Monte Carlo Simulation for Evaluation of Reliability Indices of Power Distribution System (#30)
Nisha Godha, Surekha Deshmukh and Rahul Dagade
-

Session B2: Industry Case Study 1**4:30pm – 6:00pm @ Seminar Room 02****Chair: Dr. Björn Johansson, Chalmers University of Technology, Sweden**

14. Enhancing a System's Performance by utilizing its Hidden Capacity using Discrete Event Simulation: A Case Study of a Steel Melt Shop (#53)
Swarnendu Kirtania, Prateek Raj, Arnab Adak and Atanu Mukherjee
 15. Planning For In-Plant Logistics Using Discrete-Event Simulation In Automotive Industry (#63)
Tirbhuvan Kumar, Rabindra Sah and Vikas Sharma
 16. Simulation Based Analysis of Tank Selection Rules in a Process Type Manufacturing system (#50)
Ashish Devikar and Karthik Vasudevan
-

Session B3: Simul8 Training Session 1**4:30pm – 6:00pm @ Seminar Room 01**

The SIMUL8 starter training session program is designed specifically for new users of SIMUL8. The program gives you an overview of building basic models in SIMUL8 from the word go through a hands on approach and will give you a taste of the skills you need to start achieving business improvements quickly. Topics covered will include a basic introduction to the software, basic building blocks such as workstations & conveyors, simulation clock, resources, assemblies and running experiments using a simple model.

DAY II: FRIDAY, 3RD February 2012

Session C1: Manufacturing 1

9:00am – 10:30am @ Seminar Room 03

Chair: Dr. S.V.D.Nageswara Rao, IIT Bombay

17. How simulation helped save Rs.50 Lakhs in an automotive paint shop
Vikram Ramnath (#new)
 18. Evaluating the Performance of a Multi-model Automotive Body Delivery System (#64)
Nikhil Garge, Ashish Devikar, Rajesh Welekar and Karthik Vasudevan
 19. Integration of Process Planning and Scheduling based on Hybrid Algorithms (#12)
Ajit Karpe and Ramchandra Jahagirdar
 20. Stochastic Job Shop Scheduling using Hybrid Simulation and Optimization Approaches (#70)
Ketki Kulkarni and Jayendran Venkateswaran
-

Session C2: System Dynamics & Systems Approach

9:00am – 10:30am @ Seminar Room 02

Chair: George Paes, Delmia Solutions Pvt. Ltd., Bangalore

21. Simulation of an iron foundry: supply chain management (#56)
S. Shyam Sunder Rao, and Vizayakumar Karumanchi
 22. System Dynamic Simulation and Analysis of Production–Inventory Control Policies (#59)
Bijulal D
 23. Dynamics of value creation in Indian bilateral cross-border joint ventures: Systems approach
Sanjay Dhir, Amita Mital and Samir Srivastava (#21)
 24. Congestion Control Technique At A Junction For Heterogeneous Traffic In India (#40)
Sonika Malloth and P. Vedagiri
-

Session C3: Vendor Track 1

9:30am – 10:30am @ Seminar Room 01

Chair: Dr. Vishnu Narayanan, IIT Bombay

- V1. ANSYS
Ashish Deshpande,
 - V2. ExtendSim
Abboy Dhanakodi
-

Session D1: Transportation

11:00am – 12:40pm @ Seminar Room 03

Chair: Dr. Edward Williams, PMC & University of Michigan, USA

25. Reinforcement Learning for Real Time Urban Traffic Signal Control (#41)
Sadguna Nuli and Tom V Mathew
 26. Development and Evaluation of an Interface to Integrate Different Traffic Simulation Model (#18)
Ashutosh Bajpai and Tom V Mathew
 27. Simulation of multiple line rail sections (#45)
Devendra Shelar, Priya Agrawal, Narayan Rangaraj and Abhiram Ranade
 28. Simulating Median Side Bus Lanes in Indian Traffic Conditions (#34)
Shubham Jain and P. Vedagiri
 29. Simulation Study of Continuous Flow Intersection Under Heterogeneous Traffic Condition (#35)
Shikhar Daydar and P. Vedagiri
-

Session D2: General Engineering 2		11:00am – 12:40pm @ Seminar Room 02
Chair: Dr. Chandrababha Dewangan, BARC, Mumbai		
30.	Development of Hydro Gas Suspension for AFV: A Co-Simulation Approach (#24) <i>Subodh Kumar Nirala, M.U. Subash, James, N.S. Sekar, D.K. Datta and U. Solomon</i>	
31.	Stochastic Nonlinear Bending Response of FGM Cylindrical Shell with Random Material Properties <i>N.L. Shegokar, K.R. Jagtap And Achchhe Lal</i> (#49)	
32.	Process Simulation, modelling and estimation of Temperature and Residual Stresses Electrical Discharge Machining of AISI D2 steel (#16) <i>Mohan Kumar Pradhan</i>	
33.	Analysis of Heat Flow Produced by Specific Heating Modality on Selected Region in a Body (#66) <i>Jyotika Pruthi, Supriya Agarwal, Priyanka Sahu and Saurabh Mukherjee</i>	
34.	Ordinal Optimization Based Framework for Optimization of Computationally Intensive Functions <i>Nagesh Kulkarni, Pramod Zagade and B Gautham</i> (#17)	
Session D3: Vendor Track 2		11:00am – 12:40am @ Seminar Room 01
Chair: Dr. D. Bijulal, College of Engineering Trivandrum		
V3.	SIMUL8 <i>Kenneth Doole</i>	
V4.	Production Modeling India (PMI) <i>Rajesh Welekar and Sandeep Soni</i>	
V5.	Flexsim <i>Mano Kanthanathan</i>	
Session E1: Financial Engineering		4:30pm – 6:00pm @ Seminar Room 03
Chair: Dr. N. Hemachandra, IIT Bombay		
35.	A Monte-Carlo Approach to Currency Risk Minimization (#10) <i>Anil Bhatia, Vijaysekhar Chellaboina and Sanjay Bhat</i>	
36.	Multi-level Monte-Carlo approach to the simulation of multidimensional SDEs (#51) <i>Narayana Darapaneni, K.S. Mallikarjuna Rao and Jayendran Venkateswaran</i>	
37.	Modified Multilevel Monte Carlo method for Pricing Options (#47) <i>Jai Methani, Jayendran Venkateswaran and K.S. Mallikarjuna Rao</i>	
38.	Determination of Better Equity Market Index Based on Speed of Adjustment to Macroeconomic Factors and Efficiency (#60) <i>S.V.D. Nageswara Rao and Sree Vinutha V.</i>	
39.	The Historical Simulation Method for Value-at-Risk: A Research Based Evaluation of the Industry Favourite (#58) <i>Meera Sharma</i>	
Session E2: Industry Case Study 2		4:30pm – 6:00pm @ Seminar Room 02
Chair: Dr. A. Subash Babu, IIT Bombay		
40.	Simulation based Validation of a new Final Assembly System Design (#65) <i>Revathi J, Karthik Vasudevan and Rajesh Welekar</i>	
41.	Optimization of product sequence in build to order environment using discrete event Simulation <i>Nikhil Garge and Karthik Vasudevan</i> (#69)	
42.	CFD Analysis of ATGM Configurations (#68) <i>A. Venkateshwarlu Venkateshwarlu, Hemraj Meena and Kumar Mihir Kumar</i>	

Session E3: Simul8 Training Session 2**6:00pm – 7:00pm @ Seminar Room 01**

The SIMUL8 starter training session program is designed specifically for new users of SIMUL8. The program gives you an overview of building basic models in SIMUL8 from the word go through a hands on approach and will give you a taste of the skills you need to start achieving business improvements quickly. Topics covered will include a basic introduction to the software, basic building blocks such as workstations & conveyors, simulation clock, resources, assemblies and running experiments using a simple model.

DAY III: SATURDAY, 4TH February 2012

Session F1: Manufacturing 2**9:00am – 10:30am @ Seminar Room 03**

Chair: Dr. Narayan Rangaraj, IIT Bombay

-
- 43. Performance Evaluation of Cellular Manufacturing Systems Using Adaptive and Robust Layouts in Multi-period Demand (#38)
Jibi Job and Madhusudanan Pillai
 - 44. Simulation based Layout Design of single and multi-row Flexible Manufacturing Systems (#29)
Srinivas Chandana, Ramji K and Naveen Ravella
 - 45. Prediction of wax pattern characteristics in investment casting process using fuzzy logic modeling
Sarojrani Pattnaik, D. Benny Karunakar and P.K. Jha (#33)
 - 46. Simulation the Better Decision Making Tool for the Quality Improvement Steps (#9)
Bala Subramaniam
-

Session F2: Simulation Software & Modeling**9:00am – 10:30am @ Seminar Room 02**

Chair: Dr. Mark Elder, Simul8 Corporation

-
- 47. A decision-making framework for simulation software selection problem using a preference selection index method (#27)
Vishram Sawant and Suhas Mohite
 - 48. A Comparison of Simulation Tools for Power Electronics (#72)
Albert Alexander, Manigandan T, Deepak Kumar M, and Vishnu Vardhan
 - 49. EMULATION Taking Simulation Closer To Reality (#54)
Vikram Ramnath and Aksel Jorgensen
 - 50. Conceptual Modeling - EARDEAF technique (#73)
Abboy Dhankodi
-