2009 IEEE International Conference on Automation Science and Engineering

(CASE 2009)

Bangalore, India
22 – 25 August 2009

TABLE OF CONTENTS

Organizer: Reveliotis, Spiridon	Georgia Inst. of Tech.

16:00-16:30   SuA2.1

Performance Control of Markovian Petri Nets Via Fluid Models: A Stock-Level Control Example (I), pp. 30-36.

Vázquez, Carlos Renato	Univ. de Zaragoza
Silva, Manuel	Univ. de Zaragoza

16:30-17:00   SuA2.2

Maximally Permissive Deadlock Avoidance for Multithreaded Computer Programs (Extended Abstract) (I), pp. 37-41.

Wang, Yin	Univ. of Michigan
Liao, Hongwei	Univ. of Michigan
Nazeem, Ahmed	Georgia Tech.
Reveliotis, Spiridon	Georgia Inst. of Tech.
Kelly, Terence	HP Lab.
Mahlke, Scott	Univ. of Michigan
Lafortune, Stéphane	The Univ. of Michigan

17:00-17:30   SuA2.3

On-Line Fault Diagnosis in a Petri Net Framework (I), pp. 42-47.

Dotoli, Mariagrazia	Pol. di Bari
Fanti, Maria Pia	Pol. di Bari
Mangini, Agostino Marcello	Pol. di Bari
Ukovich, Walter	Univ. of Trieste

17:30-18:00   SuA2.4

A Control Oriented Model of Generalized Warehouses Based on Colored Timed Petri Net (I), pp. 48-53.

Basile, Francesco	Univ. di Salerno
Chiacchio, Pasquale	Univ. di Salerno
Del Grosso, Domenico	Univ. degli studi di Salerno

SuA3   Convention A
Applying the Scientific Method in Service Engineering (Invited Session)

Chair: Goparaju, Subu	Infosys Tech.
Co-Chair: Akella, Ram	Univ. of California
Organizer: Hartman, Alan	IBM

16:00-16:30   SuA3.1

Globally Integrated Manufacturing Service Networks (Extended Abstract) (I), pp. 54-58.

Viswanadham, Nukula	Indian School of Business
Rajamani, Nithya	IBM India Res. Lab.

16:30-17:00   SuA3.2

Bringing Science into the Art of Workforce Management in Service Industries Extended Abstract (I), pp. 59-64.

SenGupta, Siddhartha	Tata Consultancy Services

17:00-17:30   SuA3.3

Services Innovation - Digital Ecosystem Approach to Dissemination and Co-Creation of Knowledge for Indian Agriculture Extension Services (I), pp. 65-70.

Pattanaik, Debashis	IITK
Chatterjee, Jayanta	IIT Kanpur

17:30-18:00   SuA3.4

Knowledge Sciences in Services Automation: Integration Models and Perspectives for Service Centers (I), pp. 71-78.

Akella, Ram	Univ. of California
Xu, Zuobing	Ebay
Barajas, Joel	Univ. of California at Santa Cruz
Caballero, Karla Lizbeth	UCSC

SuA4   Convention B
Health Care Enterprise Automation: Integration Issues (Invited Session)

Chair: Xie, Xiaolan	Ec. des Mines de Saint Etienne
Co-Chair: Sriram, Ram	NIST
Organizer: Sriram, Ram	NIST

16:00-16:30   SuA4.1

The Role of Standards in Health Care Automation (I), pp. 79-82.

Sriram, Ram	NIST
LIde, Bettijoyce	NIST

16:30-17:00   SuA4.2

*Health Care Automation at Asian Institute of Gastroenterology, India (Extended Abstract) (I)**.

Sriram, Ram	NIST

17:00-17:30   SuA4.3

Empirical Studies of Workflow Automation in Physician Offices in the United States (Extended Abstract) (I), pp. 83-87.

Sriram, Ram	NIST
Subrahmanian, Eswaran	Center for Study of Science Tech. Pol.

17:30-18:00   SuA4.4

Healthcare Interoperability - Lessons Learned from the Manufacturing Standards Sector (I), pp. 88-89.

Ray, Steven	Steve Ray Consulting

Diagnostics and Prognostics (Invited Session)

Chair: Pidaparthy, Sastry	Indian Inst. of Science
Co-Chair: Pattipati, Krishna	Univ. of Connecticut
Organizer: Pattipati, Krishna	Univ. of Connecticut
Organizer: Bandyopadhyay, Pulak	General Motors India Science Lab.

16:00-16:30 SuA5.1

Application of Ontology Guided Search for Improved Equipment Diagnosis in a Vehicle Assembly Plant (I), pp. 90-95.

Chougule, Rahul	General Motors Res. and Development
Chakrabarty, Sugato	General Motors Res. and Development

16:30-17:00 SuA5.2

Model-Based and Data-Driven Prognosis of Automotive and Electronic Systems (I), pp. 96-101.

Sankavaram, Chaitanya	The Univ. of Connecticut
Pattipati, Bharath	Univ. of Connecticut
Kodali, Anuradha	Univ. of connecticut
Pattipati, Krishna	Univ. of Connecticut
Azam, Mohammad	Qualtech Sytems, Inc.
Kumar, Sachin	Univ. of Maryland
Pecht, Michael	Univ. of Maryland

17:00-17:30 SuA5.3

A Fusion Prognostics Method for Remaining Useful Life Prediction of Electronic Products (I), pp. 102-107.

Cheng, Shunfeng	Univ. of Maryland
Pecht, Michael	Univ. of Maryland

17:30-18:00 SuA5.4

Fault Diagnosis and Failure Prognosis for Engineering Systems: A Global Perspective (I), pp. 108-115.

Ly, Canh	Army Res. Lab.
Tom, Kwok	U.S. Army Res. Lab.
Byington, Carl	Impact Tech.
Patrick, Romano	Georgia Inst. of Tech.
Vachtsevanos, George	Georgia Inst. of Tech.

Automation in Distributed and Unstructured Environments (Regular Session)

Chair: Kumar, Ratnesh	Iowa State Univ.
Co-Chair: Akesson, Knut	Chalmers Univ. of Tech.

09:00-09:24 MoA1.1

Set-Valued Consensus for Distributed Clock Synchronization, pp. 116-121.

Fagiolini, Adriano	Univ. of Pisa
Martini, Simone	Univ. di Pisa
Bicchi, Antonio	Univ. of Pisa

09:24-09:48 MoA1.2

Delay-Dependent Stability Analysis of Linear System with Additive Time-Varying Delays, pp. 122-126.

Krishnan, Ramakrishnan	Indian Inst. of Tech.
Ray, Goshaidas	Indian Inst. of Tech.

09:48-10:12 MoA1.3

Discrete Event Control under Nondeterministic Partial Observation, pp. 127-132.

Xu, Songyan	Iowa State Univ.
Kumar, Ratnesh	Iowa State Univ.

10:12-10:36 MoA1.4

Second-Order Optimal Estimation of Slip State for a Simple Slip-Steered Vehicle, pp. 133-139.

Caldwell, Timothy	Univ. of Colorado Boulder
Murphey, Todd	Northwestern Univ.

10:36-11:00 MoA1.5

*Develop Pulses Discriminator and Jump Control for High Efficiency Direct-Drive Electrical Discharge Machining (EDM) Processes**.

Hsue, Albert	Dahan Inst. of Tech.

Automated Planning and Reasoning Systems (Regular Session)

Chair: Pattipati, Krishna	Univ. of Connecticut
Co-Chair: Raghavan, N.R. Srinivasa	General Motors

09:00-09:24 MoA2.1

Multi-Agent Model for Threshold Constrained Portfolio Selection, pp. 140-145.

Kumar, Ritesh	Indian Inst. of Management Calcutta
Bhattacharya, Subir	Indian Inst. of Management Calcutta

09:24-09:48 MoA2.2

A Factorial Hidden Markov Model (FHMM)-Based Reasoner for Diagnosing Multiple Intermittent Faults (I), pp. 146-151.

Singh, Satnam	General Motors R&D
Kodali, Anuradha	Univ. of connecticut
Pattipati, Krishna	Univ. of Connecticut

09:48-10:12 MoA2.3

Rule Extraction from Differential Evolution Trained Radial Basis Function Network Using Genetic Algorithms, pp. 152-157.

Nekuri, Naveen	Univ. of Hyderabad
Vadlamani, Ravi	IDRBT,
C, Raghavendra Rao	Univ. of Hyderabad

10:36-11:00   MoA2.5

An Automatic Decission Support System for Medical Instrument Suppliers Using Fuzzy Multifactor Based Approach, pp. 158-163.

Chaki, Ayan	Tata Consultancy Services Ltd.
Chattopadhyay, Tanushyam	Tata Consultancy Services Ltd.

MoA3   Convention A
Manufacturing Systems (Regular Session)

Chair: Tilbury, Dawn	Univ. of Michigan
Co-Chair: S G, Ponnambalam	Monash Univ.

09:00-09:24   MoA3.1

Formal Verification of PLC Controlled Systems Using Sensor Graphs, pp. 164-170.

Alenljung, Tord	Chalmers Univ. of Tech.
Lennartson, Bengt	Chalmers Univ. of Tech.

09:24-09:48   MoA3.2

Selection of a Machine Tool for FMS Using ELECTRE III – a Case Study, pp. 171-176.

Mohan Balaji, Ch	Tata Consultancy Services Limited
Gurumurthy, Anand	Birla Inst. of Tech. & Science (BITS), Pilani
Kodali, Rambabu	Birla Inst. of Tech. & Science (BITS)

09:48-10:12   MoA3.3

Multi-Rule Multi-Objective Ant Colony Optimization for Straight and U-Type Assembly Line Balancing Problem, pp. 177-182.

Khaw, Christopher	Monash Univ. Sun way Campus
S G, Ponnambalam	Monash Univ.

10:12-10:36   MoA3.4

Operation-Oriented Specification for Integrated Control Logic Development, pp. 183-190.

Bengtsson, Kristofer	Teamster
Lennartson, Bengt	Chalmers Univ. of Tech.
Yuan, Chengyin	General Motors Res. & Development Center
Falkman, Petter	Chalmers Univ. of Tech.
Biller, Stephan	General Motors Corp.

     MoA3.5

MoA4   Convention B
Image Processing and Machine Vision in Life Sciences and Laboratory Automation (Regular Session)

Chair: Makkapati, Vishnu	Philips Electronics India Limited
Co-Chair: Kumar, Vijay	Univ. of Pennsylvania

09:00-09:24   MoA4.1

Clump Splitting Based on Detection of Dominant Points from Contours, pp. 197-201.

Makkapati, Vishnu	Philips Electronics India Limited
Naik, Sarif	Philips Electronics India Limited

09:24-09:48   MoA4.2

Towards Fully Automated Phototransfection, pp. 202-207.

Cappelleri, David	Stevens Inst. of Tech.
Halasz, Adam	West Virginia Univ.
Sul, Jai-Yoon	Univ. of Pennsylvania
Kim, Tae Kyung	Univ. of Pennsylvania
Eberwine, James	Univ. of Pennsylvania
Kumar, Vijay	Univ. of Pennsylvania

09:48-10:12   MoA4.3

Improved Wavelet-Based Microscope Autofocusing for Blood Smears by Using Segmentation, pp. 208-211.

Makkapati, Vishnu	Philips Electronics India Limited

10:12-10:36   MoA4.4

Automated Modular Bacterial Filtering System with Embeddable Microfluidic Chips, pp. 212-216.

Saketi, Pooya	Tampere Univ. of Tech.
Kreutzer, Joose	Tampere Univ. of Tech.
Niemelä, Katja	Univ. of Turku
Välimaa, Lasse	Univ. of Turku
Kallio, Pasi Johannes	Tampere Univ. of Tech.

10:36-11:00   MoA4.5

Segmentation and Classification of Tuberculosis Bacilli from ZN-Stained Sputum Smear Images, pp. 217-220.

Makkapati, Vishnu — Philips Electronics India Limited
Agrawal, Ravindra — Manipal Univ.
Acharya, Raviraja — Manipal Univ.

MoA5 Board Room
RFID Technologies and Applications in Monitoring, Diagnostics and Prognostics (Regular Session)

Chair: Kamarthi, Sagar — Northeastern Univ.
Co-Chair: Bukkapatnam, Satish — Oklahoma State Univ.

09:00-09:24 MoA5.1

Real-Time Monitoring of Container Stability Loss Using Wireless Vibration Sensor Tags (I), pp. 221-226.

Bukkapatnam, Satish — Oklahoma State Univ.

09:24-09:48 MoA5.2

Server Centric Authentication Protocol for a RFID System (I), pp. 227-232.

Kamarthi, Sagar — Northeastern Univ.
Zeid, Abe — Northeastern Univ.
Chavan, Kaushik — Northeastern Univ.

09:48-10:12 MoA5.3

An Efficient Algorithm for RFID Reader Positioning for Coverage of Irregularly-Shaped Areas, pp. 233-240.

Mysore, Nandakumar — Unisys Global Services India
Nenavat, Prakash — Unisys Global Services India
Unnithan, Rasmi — Unisys Global Services India
Mulukutla, Ravi — Unisys Global Services India
Rao, Shrisha — IIIT Bangalore

10:12-10:36 MoA5.4

Experimental Investigation of EMI on RFID in Manufacturing Facilities, pp. 241-245.

Cheng, Chen-Yang — Tunghai Univ.
Prabhu, Vittal — Penn State Univ.

10:36-11:00 MoA5.5

Assessment of Current Health of Hard Disk Drives (I), pp. 246-249.

Kamarthi, Sagar — Northeastern Univ.
Zeid, Abe — Northeastern Univ.
Bagul, Yogesh — Northeastern Univ.

MoB1 Chanakya A
Modeling, Assisting and Controlling the Human Behavior (Regular Session)

Chair: Desai, Jaydev P. — Univ. of Maryland
Co-Chair: Chang, Shi-Chung — National Taiwan Univ.

13:30-13:54 MoB1.1

Efficient Optimization of Building Emergency Evacuation Considering Social Bond of Evacuees, pp. 250-255.

Wang, Peng — Univ. of Connecticut, Storrs
Luh, Peter — Univ. of Connecticut
Chang, Shi-Chung — National Taiwan Univ.
Marsh, Kerry — Univ. of Connecticut

13:54-14:18 MoB1.2

Development of Robot Assisted Stroke Rehabilitation System of Human Upper Limb, pp. 256-261.

Subra, Parasuraman — Monash Univ. - Sunway Campus
Oyong, Arif Wicaksono — Monash Univ.
Velappa, Ganapathy — Monash Univ. Malaysia

14:18-14:42 MoB1.3

Towards a Sociable Robot Guide Which Respects and Supports the Human Activity, pp. 262-267.

Pandey, Amit Kumar — LAAS-CNRS
Alami, Rachid — CNRS

14:42-15:06 MoB1.4

Semi-Automated Soft-Tissue Acquisition and Modeling for Surgical Simulation, pp. 268-273.

Gao, Zhan — Univ. of Maryland
Kim, Theodore — Cornell Univ.
James, Doug L. — Cornell Univ.
Desai, Jaydev P. — Univ. of Maryland

15:06-15:30 MoB1.5

Automated Trajectory Synthesis from Animation Data Using Trajectory Optimization, pp. 274-279.

Johnson, Elliot — Northwestern Univ.
Murphey, Todd — Northwestern Univ.

MoB2   Chanakya B

Planning, Scheduling and Coordination in Production Systems (Regular Session)

Chair: Li, Jingshan	Univ. of Kentucky
Co-Chair: S G, Ponnambalam	Monash Univ.

13:30-13:54   **MoB2.1**

ACO-Based Scheduling of Parallel Batch Processing Machines to Minimize the Total Weighted Tardiness, pp. 280-285.

Li, Li	Tongji Univ.
Qiao, Fei	Tongji Univ.
Wu, Qidi	Tongji Univ.

13:54-14:18   **MoB2.2**

A Path Planning Approach to (Dis)Assembly Sequencing, pp. 286-291.

Le, Duc Thanh	LAAS-CNRS
Cortes, Juan	LAAS-CNRS
Simeon, Thierry	LAAS-CNRS

14:18-14:42   **MoB2.3**

An Optimal Production/Maintenance Planning under Stochastic Random Demand, Service Level and Failure Rate, pp. 292-297.

Hajej, Zied	Univ. de Metz
Dellagi, Sofiene	Univ. Metz
Rezg, Nidhal	Metz Univ.

14:42-15:06   **MoB2.4**

A Particle Swarm Optimization Algorithm for Flexible Job Shop Scheduling Problem, pp. 298-303.

Girish, B S Girish	National Inst. of Tech. Calicut, India
Jawahar, Natarajan	Thiagarajar Coll. of Engineering

15:06-15:30   **MoB2.5**

Multi-Objective ACO for Integrated Scheduling of Machines and Material Handling Equipment in Flexible Manufacturing Systems, pp. 304-309.

Tan, Wei Yung	Monash Univ. Sun way Campus
S G, Ponnambalam	Monash Univ.
M, Yogeshwaran	Monash Univ. Malaysia

MoB3   Convention A

Forecasting and Planning Applications in Production and Service Systems (Regular Session)

Chair: Saitou, Kazuhiro	Univ. of Michigan
Co-Chair: S, Srinidhi	Indian Inst. of Science

13:30-13:54   **MoB3.1**

Robust Models for Manufacturing Capacity Planning under Demand Uncertainty, pp. 310-315.

Karnik, Aditya	General Motors
Tallichetty, Chandrashekar	General Motors R&D, India Science Lab.
Saroop, Atul	General Motors R&D, India Science Lab.

13:54-14:18   **MoB3.2**

Decision Support for Optimal Adaptation of Product and Supply Chain Systems Based on Real Options Theory, pp. 316-321.

Park, Chong Hyun	Univ. of Michigan
Patil, Lalit	Univ. of Michigan
Saitou, Kazuhiro	Univ. of Michigan
Romeijn, Edwin	Univ. of Michigan

14:18-14:42   **MoB3.3**

Performance Evaluation of Tool Condition Monitoring Method Using Cramer-Rao Lower Bound*.

Bhattacharyya, Prabir	Siemens Power Engineering (P) Limited
Sengupta, Debasis	Indian Statistical Inst.

14:42-15:06   **MoB3.4**

Development of an Airline Traffic Model on International Routes, pp. 322-327.

S, Srinidhi	Indian Inst. of Science

15:06-15:30   **MoB3.5**

The Potluck Problem with Consumers' Choice Behaviors (I), pp. 328-333.

Singh, Nidhi	IBM India Limited
Rao, Shrisha	IIIT Bangalore

MoB4   Convention B

Sensor Networks and Applications (Regular Session)

Chair: Giua, Alessandro	Univ. of Cagliari, Italy
Co-Chair: Bera, Tushar Kanti	Indian Inst. of Science

13:30-13:54   **MoB4.1**

Decentralized Fault Diagnosis for Sensor Networks, pp. 334-339.

Franceschelli, Mauro	Univ. of Cagliari, Italy
Giua, Alessandro	Univ. of Cagliari, Italy
Seatzu, Carla	Univ. of Cagliari

13:54-14:18   **MoB4.2**

Performance Evaluation of Wireless Networks for Factory Automation Applications, pp. 340-346.

Anand, Dhananjay	Univ. of Michigan
Moyne, James	Univ. of Michigan

Tilbury, Dawn	Univ. of Michigan

14:18-14:42   **MoB4.3**

A Simple Instrumentation Calibration Technique for Electrical Impedance Tomography (EIT) Using a 16 Electrode Phantom, pp. 347-352.

Bera, Tushar Kanti	Indian Inst. of Science
Nagaraju, J.	Indian Inst. of Science

14:42-15:06   **MoB4.4**

Sensor Network Design for Smart Highways, pp. 353-360.

Ghosh, Shyamakshi	IIIT Bangalore
Rao, Shrisha	IIIT Bangalore

15:06-15:30   **MoB4.5**

Fault Detection of Air Intake Systems of SI Gasoline Engines Using Mean Value and within Cycle Models (I), pp. 361-366.

Sengupta, Somnath	Indian Inst. of Tech. Kharagpur
De, Soumen	General Motors
Bhattacharyya, Anirban Krishna	Indian Inst. of Tech.
Mukhopadyay, Siddhartha	Indian Inst. of Tech.
Deb, Alok Kanti	Indian Inst. of Tech.

MoB5   Board Room

Supportive Technologies for Health Care Delivery (Regular Session)

Chair: Fanti, Maria Pia	Pol. di Bari
Co-Chair: Xie, Xiaolan	Ec. des Mines de Saint Etienne

13:30-13:54   **MoB5.1**

Automated 3D Geometric Reasoning in Computer Assisted Joint Reconstructive Surgery, pp. 367-372.

K, Subburaj	Indian Inst. of Tech. Bombay
Bhallamudi, Ravi	Indian Inst. of Tech. Bombay
Agarwal, Manish	Tata Memorial Hospital

13:54-14:18   **MoB5.2**

HIV Model with Intracellular Delay a Mathematical Study, pp. 373-378.

Roy, Priti Kumar	Jadavpur Univ.
Bairagi, Nandadulal	jadavpur Univ.
Chattopadhyay, Joydev	Indian Statistical Inst.
Chattopadhyay, Biplab	Barasat Government Coll.

14:18-14:42   **MoB5.3**

Model-Based Controller for Anesthesia Automation, pp. 379-384.

Mendez, Juan	Univ. de La Laguna
Torres, Santiago	Univ. de La Laguna
Reboso, Jose	Hospital Univ. de Canarias
Reboso, Hector	Univ. de La Laguna

14:42-15:06   **MoB5.4**

Proactive Remote Healthcare Based on Multimedia and Home Automation Services, pp. 385-390.

Truong, Thi Bich Thanh	European Univ. of Britany France
Frizon de Lamotte, Florent	Univ. de Bretagne Sud
Diguet, Jean-Philippe	Lab. / CNRS

15:06-15:30   **MoB5.5**

MRI Reservation for Neurovascular Patients, pp. 391-396.

Geng, Na	Shanghai Jiao Tong Univ.
Augusto, Vincent	École Nationale Supérieure des Mines de Saint-Étienne
Xie, Xiaolan	Ec. des Mines de Saint Etienne
Jiang, Zhibin	Shanghai Jiao Tong Univ.

MoC1   Chanakya A

Testing and Verification of Embedded Control Systems (Invited Session)

Chair: Ramesh, S.	GM R&D
Co-Chair: Pappas, George J.	Univ. of Pennsylvania
Organizer: Kumar, Ratnesh	Iowa State Univ.
Organizer: Ramesh, S.	GM R&D

16:00-16:30   **MoC1.1**

Synthesis of Wireless Time-Triggered Embedded Networks for Networked Control Systems (I), pp. 397-402.

Pinto, Alessandro	United Tech. Res. Center
Kumar, Ratnesh	Iowa State Univ.
Xu, Songyan	Iowa State Univ.

16:30-17:00   **MoC1.2**

A DECOMSYS-Based Tool-Chain for Analyzing FlexRay-Based Automotive Control Applications (I), pp. 403-408.

Goswami, Dip	National Univ. of Singapore
Seshadri, Pradeep	NUS
Bordoloi, Unmesh	Verimag
Chakraborty, Samarjit	TU Munich, Germany

17:00-17:30   **MoC1.3**

Scalable Scheduling Algorithms for Wireless Networked Control Systems (I), pp. 409-414.

D'Innocenzo, Alessandro	Univ. of L'Aquila
Weiss, Gera	Univ. of Pennsylvania

Alur, Rajeev	Univ. of Pennsylvania
Isaksson, Alf J.	ABB Corp. Res.
Johansson, Karl H.	Royal Inst. of Tech.
Pappas, George J.	Univ. of Pennsylvania

17:30-18:00   **MoC1.4**

Verification of Process Operations Using Model Checking (I), pp. 415-420.

Voronov, Alexey	Chalmers Univ. of Tech.
Akesson, Knut	Chalmers Univ. of Tech.

MoC2   Chanakya B

Automation for Yield Symptom Identification in Semiconductor Manufacturing (Invited Session)

Chair: Chang, Shi-Chung	National Taiwan Univ.
Co-Chair: Chen, Argon	National Taiwan Univ.
Organizer: Chang, Shi-Chung	National Taiwan Univ.

16:00-16:30   **MoC2.1**

Advanced Studies of Selection Schemes for Dual Virtual-Metrology Outputs (I), pp. 421-426.

Wu, Wei-Ming	National Cheng Kung Univ.
Cheng, Fan-Tien	National Cheng Kung Univ.
Lin, Tung-Ho	National Cheng Kung Univ.
Zeng, Deng-Lin	National Cheng Kung Univ.
Chen, Jyun-fang	National Cheng Kung Univ.
Hung, Min-Hsiung	Chung Cheng Inst. of Tech.

16:30-17:00   **MoC2.2**

A Bayesian Ranking Scheme for Supporting Cost-Effective Yield Diagnosis Services (I), pp. 427-432.

Fan, Chih-Min	Yuan Ze Univ.

17:00-17:30   **MoC2.3**

A Novel Ontology-Based Knowledge Engineering Approach for Yield Symptom Identification in Semiconductor Manufacturing (I), pp. 433-438

Su, Fang-Hsiang; Chang, Shi-Chung; Fan, Chih-Min; Tsai, Ya-Jung; Jheng, Jethro;
Kao, Ching-Pin; Lu, Chun-Yao

17:30-18:00   **MoC2.4**

Optimum Sampling for Track PEB CD Integrated Metrology (I), pp. 439-442.

	National Taiwan Univ.
	National Taiwan Univ.
Chen, Argon; Sean Hsueh, Hsueh; Blue, Jakey	National Taiwan Univ.

MoC3   Convention A

Analytical Models for Warehouse Design and Operations (Invited Session)

Chair: Heragu, Sunderesh	Univ. of Louisville
Co-Chair: Bukkapatnam, Satish	Oklahoma State Univ.
Organizer: Heragu, Sunderesh	Univ. of Louisville

16:00-16:30   **MoC3.1**

A Partially Observable Markov Decision Process (POMDP) Model of RFID-Directed Search for Misplaced Items (I), pp. 443-448.

Bukkapatnam, Satish	Oklahoma State Univ.

16:30-17:00   **MoC3.2**

Impact of Zones on Throughput and Cycle Times in Warehouses with Autonomous Vehicles (I), pp. 449-454.

Roy, Debjit	UW-Madison
Krishnamurthy, Ananth	Univ. of Wisconsin-Madison
Heragu, Sunderesh	Univ. of Louisville
Malmborg, Charles	RPI

17:00-17:30   **MoC3.3**

Analysis of Autonomous Vehicle Storage and Retrieval System by Open Queueing Network (I), pp. 455-459.

Heragu, Sunderesh	Univ. of Louisville
Cai, Xiao	Univ. of Louisville
Krishnamurthy, Ananth	Univ. of Wisconsin-Madison
Malmborg, Charles	RPI

17:30-18:00   **MoC3.4**

Analysis of Two-Loop Closed Production Systems, pp. 460-465.

Na, Li	Shanghai Jiaotong Univ.
Zheng, Li	Tsinghua Univ.
Feng, Wei	Tsinghua Univ.

MoC4   Convention B

The Role of ICT in Sustainable Manufacturing Systems (Invited Session)

Chair: Sriram, Ram	NIST
Co-Chair: Fanti, Maria Pia	Pol. di Bari

Organizer: Sriram, Ram	NIST
Organizer: Sudarsan, Rachuri	NIST

16:00-16:30 — MoC4.1

Towards a Method for Harmonizing Information Standards (extended Abstract) (I), pp. 466-471.

Sriram, Ram	NIST
Rachuri, Sudarsan	National Inst. of Standards and Tech.
Fiorentini, Xenia	NIST
Ray, Steven	Steve Ray Consulting

17:00-17:30 — MoC4.2

Metrics, Standards, and Industry Best Practices for Sustainable Manufacturing Systems (extended Abstract) (I), pp. 472-477.

Rachuri, Sudarsan	National Inst. of Standards and Tech.
Sarkar, Prabir	National Inst. of Standards and Tech.
Sriram, Ram	NIST

17:30-18:00 — MoC4.4

Sustaining Manufacturing Assets through Smarter Utilization of Information and Communication Technologies (I), pp. 478-482.

Sriram, Ram	NIST
Srinivasan, Vijay	Columbia Univ.
Sarkar, Prabir	National Inst. of Standards and Tech.

MoC5 — Board Room

Supply Chain Management and Coordination (Regular Session)

Chair: Raghavan, N.R. Srinivasa	General Motors
Co-Chair: Sampath, Kameshwaran	Indian School of Business

16:00-16:30 — MoC5.1

A New Heuristic Method for Capacitated Multi-Level Lot Sizing Problem with Backlogging, pp. 483-488.

Wu, Tao	Univ. of Wisconsin - Madison
Shi, Leyuan	Univ. of Wisconsin-Madison

16:30-17:00 — MoC5.2

Stability Considerations and Service Level Measures in Production - Inventory Systems: A Simulation Study, pp. 489-494.

Bijulal, D.	Indian Inst. of Tech. Bombay
Venkateswaran, Jayendran	Indian Inst. of Tech. Bombay
Nandyala, Hemachandra	Indian Inst. of Tech. Bombay

17:00-17:30 — MoC5.3

Providing Production Planning and Control Functionality by Web Services: State of the Art and Experiences with Prototypes, pp. 495-500.

Moench, Lars	Univ. of Hagen
Zimmermann, Jens	Univ. of Hagen

17:30-18:00 — MoC5.4

Orchestrating a Network of Activities in the Value Chain, pp. 501-506.

Nukala, Viswanadham	Indian School of Business
Sampath, Kameshwaran	Indian School of Business

TuA1 — Chanakya A

Modeling and Analysis of Work and Information Flows (Regular Session)

Chair: Banerjee, Amarnath	Texas A&M Univ.
Co-Chair: Fanti, Maria Pia	Pol. di Bari

09:00-09:24 — TuA1.1

Reliable Ring Based Multicast Routing Scheme in MANET: An Agent Based Approach, pp. 507-512.

Biradar, Rajashekhar	Reva Inst. of Tech. and Management
Manvi, Sunilkumar	REVA Inst. of Tech. and Management, Bangalore

09:24-09:48 — TuA1.2

The Impact of ICT on an Intermodal Transportation System: An Analysis by Petri Nets, pp. 513-518.

Dotoli, Mariagrazia	Pol. di Bari
Fanti, Maria Pia	Pol. di Bari
Mangini, Agostino Marcello	Pol. di Bari
Stecco, Gabriella	Univ. of Trieste
Ukovich, Walter	Univ. of Trieste

09:48-10:12 — TuA1.3

STEP to DMIS: Automated Generation of Inspection Plans from CAD Data, pp. 519-524.

Sathi, S Venkata Bhaskar	IIT Delhi
Rao, P.V.M.	Indian Inst. of Tech. Delhi

10:12-10:36 — TuA1.4

A Modular Petri Net Based Architecture to Model Manufacturing Systems Exhibiting Resource and Timing Uncertainties, pp. 525-530.

Lee, Hyunsoo	Texas A&M Univ.
Banerjee, Amarnath	Texas A&M Univ.

TuA2 — Chanakya B

Safety and Coordination Problems in Production and Service Systems (Regular Session)

Chair: Basile, Francesco	Univ. di Salerno
Co-Chair: Wu, Naiqi	Guangdong Univ. of Tech.

09:00-09:24   TuA2.1

Profiling Primitives of Networked Embedded Automation, pp. 531-536.

Sastry, Shivakumar	The Univ. of Akron
Rajkumar, Ragunathan (Raj)	Carnegie Mellon Univ.
Archer, Branden	The Univ. of Akron
Rowe, Anthony	Carnegie Mellon Univ.

09:24-09:48   TuA2.2

Safety Design and Development of Human-Robot Collaboration in Cellular Manufacturing, pp. 537-542.

Tan, Jeffrey Too Chuan	The Univ. of Tokyo
Duan, Feng	The Univ. of Tokyo
Zhang, Ye	ARAI Lab. Department of Precision Engineering, SchoolofEngineeri
Kato, Ryu	The Univ. of Tokyo
Arai, Tamio	Univ. of Tokyo

09:48-10:12   TuA2.3

Heuristic for Lane Reservation Problem in Time Constrained Transportation, pp. 543-548.

Wu, Yingfeng	Guangdong Univ. of Tech.
Chu, Chengbin	Univ. de Tech. de Troyes
Chu, Feng	Univ. de Tech. de Troyes
Wu, Naiqi	Guangdong Univ. of Tech.

10:12-10:36   TuA2.4

Dynamic Priority Allocation for Conflict Free Coordinated Manipulation of Multiple Agents, pp. 549-554.

N, Ramesh Babu	Indian Inst. of Tech. Madras
Chiddarwar, Shital	Indian Inst. of Tech. Madras

10:36-11:00   TuA2.5

Supervisory Control for Real-Time Systems Based on Conflict-Tolerant Controllers (I), pp. 555-560.

D' Souza, Deepak	Indian Inst. of Science
Gopinathan, Madhu	Indian Inst. of Sciences
S, Ramesh	GM R&D
Sampath, Prahladavaradan	GM India Science Lab.

TuA3   Convention A

Automation in Meso, Micro and Nano-Scale (Regular Session)

Chair: Zhou, MengChu	New Jersey Inst. of Tech.
Co-Chair: Morrison, James	KAIST

09:00-09:24   TuA3.1

Regular FlowLine Models for Semiconductor Cluster Tools: A Case of Lot Dependent Process Times, pp. 561-566.

Morrison, James	KAIST

09:24-09:48   TuA3.2

A Novel Approach to Scheduling of Single-Arm Cluster Tools with Wafer Revisiting, pp. 567-572.

Wu, Naiqi	Guangdong Univ. of Tech.
Chu, Feng	Univ. de Tech. de Troyes
Chu, Chengbin	Univ. de Tech. de Troyes
Zhou, MengChu	New Jersey Inst. of Tech.

09:48-10:12   TuA3.3

Micro-Nano-Integration Based on Automated Serial Assembly, pp. 573-578.

Wich, Thomas	Univ. of Oldenburg
Edeler, Christoph	Univ. of Oldenburg
Stolle, Christian	Univ. of Oldenburg
Fatikow, Sergej	Univ. of Oldenburg

10:12-10:36   TuA3.4

Micro-Mixing of Highly Viscous Bio-Samples Using Orbital Shaking, pp. 579-584.

Yuan, Liang	The Ohio State Univ.
Zheng, Yuan F.	The Ohio State Univ.

10:36-11:00   TuA3.5

Presentation and Improvement of an AFM-Based System for the Measurement of Adhesion Forces, pp. 585-590.

Rakotondrabe, Micky	FEMTO-st Inst.
Rougeot, Patrick	Univ. of Franche-Comté, FEMTO-ST Inst.

TuA4   Convention B

Automation in Life Sciences (Regular Session)

Chair: Caldwell, Darwin G.	Italian Inst. of Tech.
Co-Chair: Low, K. H.	Nanyang Tech. Univ.

09:00-09:24   TuA4.1

Towards Enhancing the Understanding of Human Motor Learning by Means of Robotic Technology, pp. 591-596.

Solis, Jorge	Waseda Univ.
Takanishi, Atsuo	Waseda Univ.

09:24-09:48   TuA4.2

A Multi-Disciplinary Approach for Effective Hand Rehabilitation with Clinical-Based Assessment Outcomes, pp. 597-603.

Huang, Y.Y.	Nanyang Tech. Univ.
Low, K. H.	Nanyang Tech. Univ.

09:48-10:12   TuA4.3

A Fuzzy Filtering Based System for Maximal Oxygen Uptake Prediction Using Heart Rate Variability Analysis, pp. 604-608.

Kumar, Mohit	Center for Life Science Automation
Weippert, Matthias	Rostock Univ.
Kreuzfeld, Steffi	Rostock Univ.
Stoll, Norbert	Univ. of Rostock
Stoll, Regina	Univ. of Rostock

10:12-10:36   TuA4.4

A Fast and Precise Micropipette Positioning System Based on Continuous Camera-Robot Recalibration and Visual Servoing, pp. 609-614.

Mattos, Leonardo	Fondazione Istituto Italiano di Tecnologia
Caldwell, Darwin G.	Italian Inst. of Tech.

10:36-11:00   TuA4.5

Field-Tests of a Redundantly Actuated Cable-Driven Robot for Environmental Sampling Application, pp. 615-620.

Borgstrom, Per Henrik	UCLA
Jordan, Brett	UCLA, CENS
Batalin, Maxim	CENS, UCLA
Sukhatme, Gaurav	Univ. of Southern California
Kaiser, William	UCLA

TuA5   Board Room

Knowledge Sciences & Automation (Regular Session)

Chair: Garg, Dinesh	Yahoo Lab.
Co-Chair: Subrahmanya, S V	Infosys Tech. Ltd.

09:00-09:24   TuA5.1

RACK: RApid Clustering Using K-Means Algorithm, pp. 621-626.

Garg, Vikas	Indian Inst. of Science
M, Narasimha Murty	Indian Inst. of Science

09:24-09:48   TuA5.2

Customized Learning Algorithms for Episodic Tasks with Acyclic State Spaces, pp. 627-634.

Bountourelis, Theologos	Georgia Inst. of Tech.
Reveliotis, Spiridon	Georgia Inst. of Tech.

09:48-10:12   TuA5.3

MDP Based Active Localization Using Multiple Robots, pp. 635-640.

Bahuguna, Jyotika	IIIT Hyderabad
Ravindran, Balaraman	IIT Madras
Krishna, Madhava	IIIT Hyderabad

10:12-10:36   TuA5.4

Achieving 'Handoff' Traceability for Complex System Improvement, pp. 641-646.

Ramanathan, Jayashree	The Ohio State Univ.
Ramnath, Rajiv	The Ohio State Univ.
Ramakrishnan, Sreeram	IBM

10:36-11:00   TuA5.5

Intent Based Clustering of Search Engine Query Log, pp. 647-652.

Veilumuthu, Ashok	Indian Inst. of Science
Ramachandran, P	Indian Inst. of Science

AUTHOR INDEX