

ICPR 18<sup>th</sup> – International Conference on Production Research

University of Salerno – Fisciano Campus – Italy

July 31 – August 4, 2005

Final session scheduling

**Monday, August 1                      2:00 pm – 3:30 pm**  
**Nine Contemporaneous Oral Presentations**

**Session 1 – Conceptual Product Design – Room A**

A Study of Users' Complex Psychological Preference  
K. Chen, M.W. Shen, L.H. Chen

An Intelligent System for the Evaluation and Selection of Technology Projects  
K.H. Tan, C.P. Lim, K. Platts, H.S. Koay

A Product Definition and Customisation System for Product Conceptualisation  
C.-H. Chen, W. Yan, L.P. Khoo

A Generic Approach for Derivation of Design Equations at the Early Design Stage  
Y.-M. Deng

**Session 4 – Logistic Management 1 – Room D**

Using Simulations to Develop CONWIP/EPQ Production Control Systems  
S.M. Horng, C.L. Chao

Determining Safety Stock with Backlogging and Delivery Slack Time  
M.E. Nenni, M.M. Schiraldi, S.L. Van de Velde

Managing Stocks in Logistic Networks: A Robust Optimization Approach  
A. Ben Tal, B. Golany, D. Yona

Linking Purchasing Strategy to Supply Risk Management  
J. Hallikas, V. -M. Virolainen

**Session 7 – Workforce Management – Room G**

Leadership, Organizational Climate and Performance: An Experimental Study  
L. Ahoniemi, H.I. Kulmala, V. Nissinen

Worker Capability Management in Sewing Works  
J. Weng, M. Jinmyo, L. Huan, H. Okubo, H. Onari

Reorganization in a Telecommunication Enterprise. Case Study "Job for Employees"

K. Grzybowska, A.Ponikierska

Computer Based Expert Analysis of Forest Industry Strategies  
K. Elfvengren, J. Korpela, M. Tuominen, P. Sierilä

**Session 2 – Master Production Scheduling – Room B**

Gantt Chart Interface System for Production Scheduling Work  
S. Fujimura, K. Woo

Master Production Scheduling and a Comparison of Material Requirements and Planning and Cover-Time Planning  
A. Segerstedt

Understanding the Complexity in Master Production Scheduling Optimization  
G.E. Vieira, F. Favaretto

Basic Structure of Optimum Time Allowance for Master Scheduling in Case of Hierarchically Structured Products  
M. Kiuchi, S. Tagawa, K. Takeoka

**Session 5 – Supply Chain: Configuration – Room E**

Configuration of the After-Sales Service Supply Chain - An Empirical Research  
P. Johansson, N. Saccani, M. Perona

Flexibility Configurations for a Supply Chain: A Cost Analysis  
D. Aprile, A. C. Garavelli, I. Giannoccaro

Agent-Based Adaptive Coordination Mechanism for Virtual Supply Chain  
X. You

'Partial Evolutionary Multiplicity': An Approach to Managing the Dynamics of Supply Structures  
M. Binder, B.T. Clegg

**Session 8 – Performance Measurement Applications – Room L**

Computer Supported Group Work Process for Customer Need Assessment  
K. Elfvengren, H. Kärkkäinen, M. Tuominen

Evaluate the Manufacturing Performance for IC Production Line  
K.L. Hsieh, L.I. Tong

The impact of Internal Variations upon the Manufacturing Performance for the Production Seat Booking System

T. Uetake, D. Ito, M. Ohba, H. Yamamoto, S. Kobayashi, M. Sugawara

Becoming Agile – Achieving Agility in Machine Industry Companies  
A. Stachowiak, M. Fertsch

**Session 3 – Machining Accuracy – Room C**

Dimensional Accuracy in the Stereolithographic Technique through the Optimisation of Process Parameters

S. L. Campanelli, G. Cardano, R.Giannoccaro, A.D. Ludovico

Aspects Regarding New Ball Bearings Having Different Internal Geometry (Part I)  
D. Săvescu

Aspects Regarding New Ball Bearings Having Different Internal Geometry (Part II)  
D. Săvescu

Correction of the Rotations for Five-Axis Machining  
M. Munlin, S.S. Makhnanov

**Session 6 – Product/Service Design 1 – Room F**

Rapid Manufacturing and Design for Manufacturing and Assembly  
S. Mansour

On the Structure of New Product Development in Manufacturing Companies  
Y. Matsui, R. Filippini, H. Kitanaka, O. Sato

Design Methodology for Assembly and Disassembly Based on Rating Factors  
D. Shetty, V. Coimbatore, C. Campana

A Design Method for Service Systems  
R. Karni, M. Kaner

**Session 9 – Production Planning – Room M**

A Corporate Social Responsibility Plan Generation System  
J.A. Ceroni, T. Labra, R. Alfaro

Method of Implementation of the Crisis Management Procedures in Production Planning

P. Golinska, M. Fertsch, J. Oleskow

Dynamic Work Planning

J. Priese, P. Klemm

Aggregate Planning for a Large Food Manufacturer with High Seasonal Demand  
M.A. Mesquita, F.M. Takey

**Monday, August 1 4:00 pm – 6:00 pm**  
**Nine Contemporaneous Oral Presentations**

**Session 10 – Supply Chain Management 1 – Room A**

A Memetic Algorithm to Solve Multi-Facility Production Planning Problems in a Supply Chain  
S.-W. Jung, J. Park, C.-H. Jun

A proposal of Enterprise Match-Making Mechanism with Complex Systems Virtual Market in Supply Chain  
T. Kaihara, S. Fujii

Achieving Coordination by Option Contracts in a Downstreamer-Lead Supply Chain  
X. Wang, L. Liu

Relevant Features of Supply Chain Management in the Footwear Industry: A Case Study  
M. Bertolini, E. Bottani, A. Rizzi, M. Bevilacqua

Managing and Developing Suppliers: Can SCM be Adopted by SMEs?  
S.J. Williams

Advanced Production and Inventory Management  
T. Suguro

**Session 13 – CAD/CAT – Room D**

Creating Virtual Worlds  
K. Rafa

Mathematical Analysis of Three-dimensional Geometric Tolerance Chains of Mechanical Products  
N. Satonaka, N. Sugimura, Y. Tanimizu, K. Iwamura

Application of Mobile Agents in Interoperable STEP-NC Compliant Manufacturing  
A. Nassehi, R.D. Allen, S. T. Newman

Creation of Surface Models for Re-Engineering of Manufactured Parts  
A. Alrashdan, S. Motavalli, B. Bidanda

Intellectual Processing of CT Images  
A. Glaz, A. Lubans, A. Platkajis

An Integrated Approach for Virtual Prototyping of Manufactured Flexible Parts and Related Assemblies  
P. Chiabert, A. Conte, M. De Maddis, F. Lombardi, M. Orlando

**Session 16 – Management Issues 1 – Room G**

Assessing Organizational Agility with Fuzzy System  
G. Khoshsima

A Forecast-Based Economic Order-Point System  
Y. Hirakawa, A. Ishigaki

Differentiating Manufacturing Focus  
M. Hallgren, J. Ohlager

Organizational Knowledge Learning and Decision Support for Emergency and Security Challenges  
J.D. Velasquez, S.W. Yoon, B.K. Partridge, S.Y. Nof

Risk Management in Manufacturing Enterprises  
F. Steiner, J. Tupa, V. Skočil

A Model of Adding Relation between Two Units in an Organization Structure of a Complete Binary Tree  
K. Sawada

**Session 11 – Machining Issues 1 – Room B**

Tool Breakage Detection in CNC Machine Tools Based on Vibration Monitoring  
H.V. Sinh, T.X. Thai, N.T. Dong, E.L.J. Bohez, T. Lin, T.D. Tang

Improved Dry Cutting Tool Life by Air-Cooling  
B. Boswell, T.T. Chandratilleke

Prediction of Tool Flank Wear in End Milling by Using ANFIS System  
U. Zuperl, F. Cus, E. Kiker, M. Milfelner

Automatic System for Thermal Damage Detection in Manufacturing Process with Internet Monitoring  
P.R. de Aguiar, F.R.L. Dotto, E.C. Bianchi, P.J.A. Serni, R. Thomazella

Manufacturing Process Evaluation using Environmental Burden Analyzer for Machine Tool Operation  
H. Narita, H. Kawamura, T. Norihisa, L.Y. Chen, H. Fujimoto, T. Hasebe

Diminishing Set-Up Time of CNC Machine-Tools using Monitoring Systems  
M. Vieira Jr, I. Correr

**Session 14 – Inventory Models – Room E**

Analysis of a Method for Calculating an Economic Order Quantity in Inventory Models  
M. Sakaguchi, M. Kodama

A Hybrid Heuristic Method for the Combined Location Routing and Inventory Problem  
S.C. Liu, C.C. Lin

An expert System for the Design of a Multi-Echelon Inventory/Distribution Fulfillment System  
R. Manzini, E. Ferrari, A. Persona, A. Regattieri

Lead-Time and Cost in Stochastic Inventory System with Breakdown  
Y. Terashima, H. Ohta

Managing Expected Inventory Order Crossovers  
G.J.C. Gaalman, J. Riezebos

Analysis of Standard Ordering Policies within the Framework of MRP Theory  
R. W. Grubbström, T.T.T. Huynh

**Session 17 – Assembly Line Design – Room L**

An Integrated Design for Assembly Methodology  
Z. Anisic, I. Cosic

Integrating Inspection Policy Design in Assembly Line Balancing  
O. E. Carcano, A. Portioli-Staudacher

Front Loading Scenario for Genetic Algorithm Line Balancing  
D. Thilakawardana, J. Driscoll

Total Cost of Ownership Analysis for Modular Final Assembly Systems  
J. Heilala, K. Helin, J. Montonen

Safety Stock Optimization for ATO or MTO Production Systems  
A. Persona, D. Battini, M. Catena, R. Manzini, A. Pareschi

Combining Efficiency and High Variation in an Assembly Line System  
J. Lindér, A. Grzelec

**Session 12 – Machining Processes 1 – Room C**

Applying Data Mining Techniques to Improve Run by Run Control of Chemical-Mechanical Polishing  
C.-Y. Huang, R.-R. Huang

Robotic Milling for Rapid Ceramic Prototyping  
G. Han, H. Zhang, G. Wang

Innovative Production Processes for Porcelain Stoneware Tiles  
R. Gamberini, M. Gamberi, R. Manzini, A. Regattieri

Modeling, Analysis and Forecasting of Machining Process Based on Dimensional Inspection Data  
Z. Di, P. Xiaobin, Z. Rong, D. Yimin

Analysis of EDM Instability when Machining WC-Co Composite  
M. Tolouel-Rad, R. Mahdavi-Nejad

Machines Parts with Hybrid Material Structure  
J. Jirasek, J. Pohl, J. Talacko

**Session 15 – Logistic Systems – Room F**

An Optimization of Shipbuilding Mix in N-Number of Different Types of Docks  
Y.-M. Kim

A Multi-Agent Model for Distribution Problems in Logistics Systems  
L. Bianco, G. Confessore, G. Stecca

Demand Forecasting of Shipments and Receipts Data in Distribution Center using Grey Theory  
M. Kitaoka, J. Li, Y. Satou, J. Usuki

Economic Production and Remanufacturing Lot-Sizing for a Single Product System with Backlogging  
I. Konstantaras, S. Papachristos

Optimising Logistics Chain Network using Genetic Algorithms  
P. Pongcharoen, A. Khadwilard, A. Klakankhai

The Creation of a Model to Facilitate the Allocation of Materials Planning Resources in an Engineering Change Situation  
C. Wänström, O. Wintertidh, F. Lind

**Session 18 – Transducers 1 – Room M**

Efficiency of Electronic Manufacturing Control System Interfaces  
N. Bagdanavičius, P. Balaišis, A. Besakirskas

Systemic Research of Electronic Devices Value  
P. Balaisis, D. Eidukas, P. Tervydís

An AOI System for Microdrill Measurement  
D.-B. Perng, C.-Y. Hung, Y.-C. Chen

Life Cycle Analysis of a Hydraulic Gear Motor  
E. Pancaldi, M. Bevilacqua, R. Melloni, S. Gallo, M. Bertolini

Sensor Monitoring of Machining Based on Audible Sound Detection and Analysis  
R. Teti, I.L. Baciú, E.M. Rubio

**Tuesday, August 2                      10:30 am – 12:30 am**  
**Nine Contemporaneous Oral Presentations**

**Session 19 – Quality Management Models 1 – Room A**

Effectiveness of Product Quality Classifier  
E. Bashkansky, S. Dror, R. Ravid, P. Grabov

Development of Traceability System Using RF-ID and Spline Interpolation Algorithm  
R. Nakamura

Comparative Studies of the Kaizen Methodology in TQM and TPM: Toward Intelligent Manufacturing  
H. Kubota, S.-J. Song

On the Identification of Manufacturing Processes' Signature  
B.M. Colosimo, M. Pacella

An Hybrid Methodology for Performance Improvement of Manufacturing Processes Based on B.P.R. and T.Q.M.  
M. Dassisti

Analysis of the Maintenance in SMEs: Development of a Management Model  
J. R. León, G. A. Barcelli, M. A. Henrich

**Session 22 – Collaborative Design – Room D**

A Review of Environment-Oriented Research on Collaborative Design  
J. Ma, H.B.L. Duh, V.H.H. Chen

Adding Consumer Knowledge to Product Development Process  
D.M. Naveiro

Overcoming Communication Barriers in Product Design Teams  
V.H.H. Chen, H.B.L. Duh

Methodology for Connecting the Participants in the Process of Integrated Product Development in Internet Surroundings  
I. Fürstner, Z. Anišić, I. Cosic

Contributing to Management of Shared Projects in SMEs Clusters  
C.L. Villarreal Lizárraga, L. Dupont, D. Gourc, H. Pingaud

Enterprise Modeling to Evaluate Design and Development Process  
G. Guarino, F. Montagna

**Session 25 – Production Systems Management – Room G**

New Production Technology Selection: Linking the Perspectives from Production Strategy, Market Requirements and Manufacturing Attributes  
C.-T. Lin

Coping with Global Uncertainty: Strategic Devices for a Manufacturing Firm  
K. Kyläheiko, J. Sandström

Demand Uncertainty and Return Policies with Asymmetric Information  
O. Tang, D. Li, D.-B. Cao

Management System to Create New Value  
K. Ishii, T. Ichimura, S. Kondoh, S. Hiraki

Productivity Management Based on Productivity Science for Self-Recreative Organization (SRO)  
M. Nayuki, K. Abe

A Holistic Decision Support System for the Evaluation of ICTs: End User's Perspective Group Decision  
A. Kengpol, K. Elfvengren, M. Tuominen

The Aggregate Models of Production Units by using the Transient Queuing Networks  
A. Kengpol

**Session 20 – Agent-Based Scheduling – Room B**

Minimizing the Total Weighted Completion Time in a Two-Agent Scheduling Problem  
A. Agnetis, G. De Pascale, D. Pacciarelli

Agent System for Real Time Scheduling in Semiconductor Production  
K. Fujinaga, G. Takazawa, G. Sato

Developing Contingency-Driven Scheduling Diagnosis for Continuous Improvement of Shop Floor Control  
S.-J. Song, H. Kubota

Integrated Process Planning and Scheduling - An Agent-Based Approach  
T.N. Wong, C.W. Leung, K.L. Mak, R.Y.K. Fung

Real-time Scheduling for Holonic Manufacturing Systems Based on Estimation of Future Status  
K. Iwamura, N. Okubo, Y. Tanimizu, N. Sugimura

Optimization of Manufacturing Processes by Distributed Simulation  
G. Weigert, S. Horn, S. Werner

**Session 23 – Heuristic Scheduling – Room E**

A Comparative Study of Scheduling Algorithms for Batch Processing Machines  
S.-G. Koh, W.-S. Lee

A Heuristic for Flow-Shop Scheduling with Machine Bypass  
R. Gamberini, A. Grassi, C. Mora

List-Based Squeezing Branch and Bound Algorithm for Flowshop Scheduling Problems  
K. Morizawa, H. Nagasawa

An Online Approach to Dynamic Rescheduling for Production Planning Applications  
P. Caricato, A. Greco, A. Anglani

New Efficient Heuristic for Resource Constrained Project Scheduling  
Y. Cohen, A. Sadeh, O. Zwikael

**Session 26 – Education – eLearning – Room L**

A Formal and Empirical Evaluation Model of Human-Computer Interface  
Y.-L. Lee, S.-L. Hwang, E.M.-Y. Wang

The Establishment of Dimension-Estimating Models for Elementary and High School Students in Taiwan  
C.Y.-C. Lin, H.-C. Wu

Development of e-Learning Educational Programs for "Cyber Manufacturing" in Management of Technology (MOT)  
K. Tamaki

Possibilities of a University to Support Continuing Professional Development (CPD) of Engineers  
L. Hirvonen, V. Orpana

Sustainable Education for Sustainable Development  
G. Belforte, D. Del Corso, A. Villa

Optimal Course Design Method for e-Learning Systems  
L. Feng, I. Koshijima, M. Nishio

**Session 21 – Machining Technologies – Room C**

A Practical Setup Planning Automation of Turned Parts  
G. Valiño, D. Blanco, B.J. Álvarez, S. Mateos, J.C. Rico

Prototype Expert System for Performing the Plasma Cutting Process  
A. Lazarevic, M. Manic, D. Lazarevic

Emerging Technologies for Interoperable CNC  
X.W. Xu, L. Wang, Y. Rong

Laser Beam Manufacturing of Aluminum Alloys – Simulation and Technological Aspects  
M. S. Popa, C. Rus, D. Preja

A Data Driven Methodology for Supporting the Design Phase of Forming Tools  
M. De Maddis, D. Basuc, F. Lombardi

Creating Design Rules for Incremental Sheet Forming  
L. Lamminen, J. Tuomi

**Session 24 – Supply Chain Coordination – Room F**

Detecting Disturbances in a Supply Chain Echelon via Spectral PCA  
M.M. Naim, N.F. Thornhill

Determination of when a Little Bullwhip may be Helpful  
A. Potter, D.R. Towill, S.M. Disney

Measure of Bullwhip Effect in Supply Chain the Case of AR(2) Demand Process  
H.T. Luong, N.H. Phien

Investigating the Bullwhip Effect of a Hybrid Stochastic Manufacturing/Remanufacturing System  
S. Zaroni, I. Ferretti, L. Zavanella, O. Tang

Decentralized Coordination Strategies in a Non Linear Supply Chain  
F. Costantino, G. Di Gravio, M. Tronci

Variance Amplification: the Equivalence of Discrete and Continuous Time Analysis  
R.D.H. Warburton, S.M. Disney

**Session 27 – Complex Manufacturing Systems – Room M**

Distributed Production Planning and Control Agent Based System  
R.M. Lima, R.M. Sousa, P.J. Martins

High Quality Lower Bound for a Generalized Transfer Line Balancing Problem  
A. Dolgui, I. Ichnatsenka

A Generic Workload Control Model for Order Release and Workflow Control  
N.O. Fernandes, S.C. Silva

Application of Uncertain Variables to Knowledge-Based Decision Making in a Class of Production Systems  
Z. Bubnicki

A New Value Stream Mapping Approach for Complex Production Systems  
M. Braglia, G. Carmignani, F. Zammori

Optimal Production in a Hybrid Manufacturing/Remanufacturing System  
O. Tang, R.W. Grubbström

**Tuesday, August 2                      2:00 pm – 3:30 pm**  
**Nine Contemporaneous Oral Presentations**

**Session 28 – Mass Customization – Room A**

Design for Validation Based on Petri Nets and EPC Network  
J.J.P.Z.S. Tavares

Mass Customization in Process Industries "From Mass Production to Mass Customization"  
W. Schweizer

Implications of Customer Differences and Reconfiguration Flexibility on Fulfillment Performance in a Virtual-Build-to-Order System  
P.G. Brabazon, B.L. MacCarthy, R.W. Hawkins

Modeling Process Platform-Based Production Configuration  
L. Zhang, J. (Roger) Jiao, S. Pokharel

**Session 31 – Enterprise Structure – Room D**

Design of a Production Conflict and Error Detection Model with Active Protocols and Agents  
C.L. Yang, X. Chen, S.Y. Nof

A Study of Enterprise Structures in Toyota  
B.T. Clegg, A.B. Sharma

The Evolving Production Enterprise  
K.M. Gardiner

Production System Planning in Competence-Cell-Based Networks  
E. Müller, S. Horbach, J. Ackermann

**Session 34 – Supply Chain Simulation – Room G**

Modelling Analysis and Simulation of a Supply Chain Devoted to Support Pharmaceutical Business Retail  
F. Longo, G. Mirabelli, E. Papoff

A Formal Method for Analyzing and Assessing Operational Risk in Supply Chains  
T. Rossi, C. Noé, F. Dallari

Data-Driven Simulation of the Extended Enterprise  
B. Cao, R. Farr, M. Byrne, J. Tannock

A Discrete Time Event Simulator for Distribution Supply Chain  
F. Cannavò, A. Costa, S. Fichera, V. Nunnari

**Session 29 – Value Chain – Room B**

Value Chain Modeling: Integration of a Competitiveness Matrix and Target Cost Curve  
M.S.M. Pirttilä, M.T. Kainusalmi, T.J. Kärri, J.P. Varis

Inter-Organizational Operations in Value Chains – Experiences from Networked Advertising Agencies  
H.I. Kulmala, A. Vahteristo, E. Uusi-Rauva

Empirical Study on the Policy and Management of Wages, Prices, Profit and Productivity  
T. Tanaka, K. Abe

Effective Direction of Production Systems  
P. Stančík, M. Šimon

**Session 32 – Supply Chain Performance – Room E**

Evaluating Performance of Supply Chain Partners by Data Envelopment Analysis  
E. Ada, Y. Kazançoğlu, G. Özkan

Analysis of Manufacturing Performance for Different Due-Date Estimation Policies in Make-to-Order Production  
M. Kuroda, M. Kida

Auditing Supply Chain Performance  
K.F. Salama, D.R. Towill

Internationalising the Quick Scan Audit Methodology  
R. Banomyong, C. Basnet, P. Childerhouse, E. Deakins, S.M. Disney, M.M. Naim, D.R. Towill

**Session 35 – Management Issues 2 – Room L**

The Content and Use of Automation Strategies  
K. Säfsten, M. Winroth, J. Stahre

The Analysis of Consumers Selection Behavior Using Huff Model and Entropy Model  
H. Yamada, T. Usami, K. Teramoto

A Mutual Use of Management Simulation via the Internet  
K. Fujita, S. Murahara, Y. Kobayashi

BPR in Load up and Facing Process of Wide-Spread Goods: A Proposal of a Simulation Model  
S.A. Gallo, R. Melloni, E. Pancaldi, L. Rossi

**Session 30 – Scheduling Applications 1 – Room C**

Advanced Planning and Scheduling Concepts for Application in the Consumer Goods Industry  
H.-O. Günther, M. Grunow, U. Neuhaus

Computer Aids for Production Systems Management in Iron Ore Mining  
J.E. Everett

A Dynamic Re-Scheduling System for an Underground Mine  
L.E. Quezada, F. M. Cordova, V. Olivares, J.M. Sepulveda, L.R. Atero

A Constraint-Programming Model for Scheduling Vehicles in Underground Mining Operations  
J.M. Sepulveda, F.M. Cordova, L.E. Quezada, V.E. Olivares, L.A. Hernandez, L.R. Atero

**Session 33 – Scheduling Applications 2 – Room F**

Capacity Analysis Tool to Support Sales Decisions  
L.C.A. Rodrigues, J.L.S. Riechi

Single-Machine Scheduling with Time-Dependent Processing Times and Repair Options  
M. Kaspi, Z. Jerbi

Designing of a Transportation Scheduling System for the ICGCPS  
S. Hiraki, T. Ichimura, K. Ishii

A New When-to-Schedule Policy in Online Scheduling Based on Cumulative Task Delays  
H. Suwa

**Session 36 – Simulations 1 – Room M**

A Simulation Model Based on Petri Nets for the Operation of an Underground Mine  
F.M. Cordova, J. Sepulveda, L.E. Quezada, V. Olivares, L.R. Atero

A Simulation Study of the Body Shop Design in an Automotive Factory  
D.H. Moon, H.I. Cho, H.S. Kim, H. Sunwoo

Simulation of the Future Development of a Chilean Port  
C. Montt Veas, K. Lattut

A Study for Forecasting Water Supply Demand in the Kanagawa Prefectural Waterworks Service Area  
Y. Maruyama, H. Yamamoto, M. Tanabe, H. Goto, K. Shingyochi

**Tuesday, August 2**                      **4:00 pm – 6:00 pm**  
**Nine Contemporaneous Oral Presentations**

**Session 37 – Product/Service Design 2 – Room A**

SERVLAB: A Laboratory for the Support Services Research  
R. Karni, T. Meiren  
Class Content Design about Collaborative Learning for "Design for Production System" using e-Learning  
M. Takehi, T. Yamada, I. Watanabe  
A Robust Eco-Design of Factory Stacks  
R. Katz, I. Ben-Gal, Y. Bukchin

A Method for Constructing Products' Form from Multi-KANSEI Images  
Y.-M. Chang, I. Chuan  
A Methodology to Support the Physical Distribution of Offices: Theory and Illustration  
P. Palominos, L. Quezada, L. Solís  
Computer Aided Engineering for IT Enabled Services  
K.-P. Fährnich, K. Meyer

**Session 40 – Sustainability – Room D**

A People-Centred Conceptual Model for a Sustainable Lean Manufacturing Environment  
J.R. Beale  
Supporting Lean Production through Waste Minimization: The Unseen Costs Issue  
E. Cagno, F. Magalini, G. Micheli, P. Trucco  
Evaluation of Environmental Impacts of Industrial Products: An Overview and a Comparison  
S. Manmek, H. Kaebernick  
Developing Sustainability Strategies and Tools for Engineering and Manufacturing SMEs  
S. Burke, W.F. Gaughran  
A New Approach to Environmental Performance Evaluation  
K. Nakashima, T. Nose, S. Kuriyama  
Environmental Conflicts Management and Production Facilities Location  
F. Marciano, D. Rossi, G. Tomasoni

**Session 43 – Quality Management Models 2 – Room G**

The Impact of Market Globalisation on Control Processes  
E. Gentili, F. Aggogeri  
  
Learning and Forgetting in Maintenance  
H. Shtub, E.M. Dar-EI, Y.T. Herer  
Value Characteristic Approach to Increase Customer Satisfaction  
K. Ishii, T. Ichimura, S. Hiraki  
  
International Accreditation-Related Activities in Engineering  
R.D. Dryden, H.C.M. Erzurumlu  
  
House of Strategy (HOS) – From Strategic Objectives to Competitive Priorities  
S. Dror, M. Barad

**Session 38 – Genetic Algorithm – Room B**

Evolutional Reactive Scheduling for Agile Manufacturing Systems  
Y. Tanimizu, T. Sakaguchi, K. Iwamura, N. Sugimura  
GA Based Heuristic Flexible Flow Shop Scheduling Method - Splitting Job across Multiple Machines  
M. Fuyuki, M. Arakawa, H. Sekine, I. Inoue  
Manufacturing System Scheduling using Genetic Algorithms and Heuristics  
V. Millas, G.C. Vosniakos

A Genetic Algorithm for Scheduling Jobs on Unrelated Parallel Machines  
M.A. Al-Fawzan, I.M. Al-Harkan  
Multiobjective Genetic Algorithms in Production Optimization Problems  
M. Fertsch, P. Golińska, J. Oleśków  
  
A Genetic Algorithm for Multi-Mode Resource Allocations and Leveling Problem  
C.C. Tseng, J.K. Lin

**Session 41 – Product Design – Room E**

A Concurrent Car Product Detail Design and Production Design Based on BOM  
C. Ooami, H. Nagaoka, O. Yoshie  
  
Using Flexible Systematic Strategy of Thinking within Mathematical Modelling of the Gear Systems.  
V. Vanek, S. Hosnedl, L. Nemeč  
Evolving Jewelry Design Based on IFS Fractals and Condensation Sets  
S. Wannarumon, E.L.J. Bohez, K. Annanon  
  
Concurrent Package and Warehouse Design in the Case of Random Storage Policy  
R. Gamberini, A. Grassi, C. Mora, B. Rimini  
Web-Based Collaborative Customized Product Development  
J. Jiao, M. Helander  
The New Methodic of Rational Self-Compacting Concrete Composition Design  
Z. Rudžionis, E. Ivanauskas

**Session 44 – Performance Measurements – Room L**

Evaluating Productivity by Combining Characteristics of BSC and QFD  
Y. Cohen, G. Vitner  
  
Measuring Efficiency of the Service Production using the AHP-Model  
J. Pennanen, J. Takala  
The Implementation and Utilization of Management Systems in Knowledge-Based Organizations  
H. Rantanen, L. Ahoniemi  
Managing and Sustaining Outsourcing Activities: Case Discussion and Presentation of Lessons Learned in Thailand and Finland  
K. Phusavat, J. Takala  
Analyzing Information from AHP in a more Reliable Way: A Case Study of Competitive Priorities  
S. Kyllönen, J. Takala  
Developing a New Performance Measure for Supply Chain using Concept of Momentum  
M.K. Cho, Y.H. Lee

**Session 39 – Assembly Line 1 – Room C**

Hybrid Modeling for Allocating Human Resource in Assembly Lines  
S. Digiesi, G. Mossa, L. Ranieri  
Improving Manufacturing Quality by Re-Sequencing Assembly Operations: A Data-Mining Approach  
C. da Cunha, B. Agard, A. Kusiak  
A Fundamental Study of a Method in Designing 3-Dimensional Computer Graphics of Assembly-Type Works  
S. Shinoda, A. Niwa  
Debugging and Maintenance of Automated Assembly Equipment with Reliability  
T. Kusayanagi, T. Kumagai, M. Kitaoka  
Advantages of Assembly Lines in Sheltered Work Centres for Disabled. A Case Study.  
C. Miralles, J.P. García-Sabater, C. Andrés, M. Cardós  
Prevention of Machine Stop of the Parts Feeder by Pattern Recognition  
K. Kameda, M. Takeuchi, K. Yoshida, M. Kitaoka

**Session 42 – Human Resources – Room F**

Workforce Cross-Training with Learning in Production and Reworks  
M.Y. Jaber, H.V. Kher  
  
Performance Measurement Impacts on Management and Leadership - Perspectives of Management and Employees  
J. Ukko, J. Tenhunen, H. Rantanen  
A Research on the Personnel Evaluation System Related with the Ability Merit Rating  
K. Haneishi, K. Mori, N. Jidai  
The Analysis of Difference in the Skill Development Process by the Type of Job  
T. Yamamoto, K. Mori  
  
Self production: Human Re-Engineering for Action  
O. García de La Cerda  
Neural Network in Construction Labor Productivity Estimation  
I. Završki, M. Radujković, M. Vukomanović

**Session 45 – Cellular Manufacturing – Room M**

Development of Digital Manual Presentation System Equipped with Operation Data Collection  
M. Arakawa, A. Tabushi, M. Fuyuki  
A Framework for the Design of Cell Production Systems  
K. Mori, C. Shinobu  
A Novel Approach for the Solution of the Multiobjective Cell-Formation Problem  
C. Dimopoulos  
  
A Cell Formation Problem for Practical Application in Cellular Manufacturing  
L. Hu, K. Yasuda  
  
Lot Streaming and Operation Regrouping Considering Alternative Process Routes and Production Quality  
D. Cao, M. Chen, F.M. Defersha

**Wednesday, August 3      10:30 am – 12:30 am**  
**Nine Contemporaneous Oral Presentations**

**Session 46 – Robot Application – Room A**

KISS Human-Robot Interfaces

A. Eliav, T. Lavie, Y. Parmet, H. Stern, J. Wachs, Y. Edan

Influence of Operational Costs on Human-Robotic Performance in Target Recognition Tasks

A. Bechar, Y. Edan, J. Meyer

Conception of Adaptive Robot Systems  
B. Kuhlenkoetter

Implementation of Distributed Control Architecture for Robotic Manufacturing Systems using Petri Nets

G. Yasuda

Three-Dimensional Computer Graphic Human Model Representation of Asymmetric Lifting

J. Balingit, M. Kitaoka, H. Iwase, H. Takeda

Internet-based Messaging and Team Workplace Software for Remote Robot Control

T. Borangiu, F.D. Anton, S. Tunaru, M. Manu

**Session 49 – Manufacturing Systems – Room D**

A Simulation Model for Grade Change Costs of Paper Machine

T. Puonti, T. Kärrri

Efficient Manufacturing System Implementation Based on Combination between Real and Virtual Factory

H. Hibino, T. Inukai, Y. Fukuda

On-Line Simulation Support for a Virtual Supervisory Control of Underground Mine Operation

J. M. Sepulveda, F.M. Cordova, L.E. Quezada, V.E. Olivares

Manufacturing and Assembly Influences on the Design of Miniaturized Parts  
K. Gayk

A Model for Parallel Levels of Automation within Manufacturing

J. Frohm, V. Lindström, M. Bellgran

Flexible Process Planning System Considering Designers' Intentions and Manufacturing Conditions

E. Arai, H. Wakamatsu, A. Tsumaya

**Session 52 – Virtual Enterprise – Room G**

XML-Based Integrated Enterprise Modeling Framework

J. Zhang, D.Z. Ma, Y. Jin

Evaluation Model of Dynamic Risk for Single Procedure in VE

M. Huang, J. Gong, G. Jiang, W.H. Ip, X. Wang

Organizing Production in Virtual Enterprises: Cooperation, Coordination and Change

V. Corvello, P. Migliarese

Defining Manufacturing Fitness for the Virtual Enterprise

E.A. Hadzilas

Structurated Database of the Manipulation Transportation Facilities for Virtual Enterprise

M. Tolnay, Š. Valčuha, M. Hajduk, P. Mrázik, A. Guniš

Model of Cooperation among Small and Medium Enterprises within Virtual Enterprise

D. Somora, J. Šišlák, M. Tolnay, Š. Valčuha

**Session 47 – Job Shop Scheduling – Room B**

Dynamic Job Shop Scheduling using the Mixture of a Genetic Algorithm and a Priority Rule

T. Eguchi, M. Dougakiuchi, F. Oba, T. Murayama

An Immune Based Scheduling Algorithm for Solving Multi-Objective Job-Shop Problem

J.G. Yang, Y.Q. Zhou, B.Z. Li

A Modified PSO Based on New Information Sharing Mechanism for JSP

L. Gao, C. Zhou, H.B. Gao

Branch and Bound Based Makespan Minimization in Job Shops Guided by Search History

K. Morikawa, K. Takahashi, K. Tabata

From Ants Colony to Artificial Ants: A Nature Inspired Algorithm to Solve Job Scheduling Problems

F. Fruggiero, C. Lovaglio, S. Miranda, S. Riemma

Design and Operation of Dynamic Assembly Lines Using Work Sharing

Y. Bukchin, R. Anuar

**Session 50 – Recycling – Room E**

Development of an Analysis Tool at Reverse Process

H. Suzuki, Y. Tanoue, H. Ito, T. Ono, S. Takata

Life Cycle Analysis of Reverse Supply Chain of a Refrigerator

R. Gamberini, A. Grassi, C. Mora, B. Rimini

Optimal Layout Design of the System for Dismantling End-of-Life-Vehicles

M.-W. Park, Y.-T. Sohn

Location of Conditioning PET Recycling Points in the Chilean MSW Stream

E. Salazar, J. Neugebauer, F. Radon, A. Berg, E. Vásquez

Environmental Impacts of Product Refurbishment Systems

K. Yura

Research on Knowledge-Reuse Based Textile Process Intelligent Decision Model

Z.-J. Lv, Q. Xiang, X.-G. Yin, J.-G Yang

**Session 53 – Performance Evaluations – Room L**

Performance Evaluation of Multi-product Two-Machine Lines

M. Colledani, A. Matta, T. Tollo

Performance Parameters in Fuzzy Discrete Event Simulation

A. Grieco, F. Nucci

An ERP System Performance Evaluation Framework

C.-C. Wei

Improvement of the Production Systems of a Small and Medium-Sized Enterprise

T. Nomura, M. Matsumaru, H. Yamashita

Comparing the Performance of KCS and DBR via Markov Analysis

Y. Chen, K. Morikawa, K. Takahashi

Information Theoretic Consideration of Multi-Layered Inventory Process

M. Goto, T. Masui, S. Hirasawa, N. Tawara

**Session 48 – Supply Chain Management 2 – Room C**

Breaking the Uncertainty Circle in the Supply Chain: Redesign Strategies

S. Lodola, T. Sorimachi, K. Yoshimoto

Capacity Decision of Supply Chain with Flexibility of Backward Integration

L. Wang, L. Liu, Y. Wang

An Optimal Flow Control Mechanism for Multistage Manufacturing Processes

A. Ishigaki, Y. Hirakawa

Cumulative Curve Analysis in the Supply Chain using Grey Method

Y. Sato, K. Yoshida, J. Usuki, M. Kitaoka

Negotiation in Distributed Production Planning Environments

G. Lo Nigro, M. Bruccoleri, G. Perrone

A Fuzzy Multiobjective Supplier Selection with Nonlinear Membership Function

A. Amid, S.H. Ghodspour, C. O'Brien

**Session 51 – Team Work – Room F**

Worldwide Survey on Teamwork Awareness in The Japanese-Localized Plants

M. Nowatari

Labour Flexibility – Utopia or Bust?

R. Rae, C. O'Brien

Teamwork Awareness on Workers and Their Staff on The Electric Tool Company in Germany

A. Takeda, M. Nowatari

Optimum Rest Time of Workers using Biomechanical Analysis

Y. Okumoto

Making an Interorganizational Team More Effective - Case Public Construction

P. Haapalainen, M. Naaranoja

Development of a Measurement Instrument to Assess Organisational Quality Culture

L.A. Davison, K. Al-Shaghana

**Session 54 – Optimization: Theoretical Models – Room M**

A Fuzzy Graph Model for Multiobjective QAP Problem

M.R. Gholamian, S.M.T. Fatemi Ghomi, M. Ghazanfari

A Geometrical Approach to Integer Programming

I. Derpich, J. Vera

Efficient Algorithm for the System State Distribution of Multi-State Consecutive-k-out-of-n:G System

H. Yamamoto, T. Akiba, M.J. Zuo, Z. Tian, Y. Tsujimura

Evaluation of Preferences Using Hernerit Model

K. Teramoto, T. Usami, H. Yamada, K. Koketsu

Sample-Efficient Regression Tree

A. Chen, T.-J. Ho, C.-W. Liu

A Multicriteria Approach to Support the Design of Complex Systems

G.B. Amata, G. Fasano, F. Montagna, M.F. Norese, S. Riva

**Wednesday, August 3**

**2:00 pm – 3:30 pm**

**Nine Contemporaneous Oral Presentations**

**Session 55 – Web-based Design – Room A**

Building a Customer Oriented Web-Based Evaluation System  
Z. Luo, W. Fang, H.B.L. Duh

Knowledge and Learning in a Web-Based Collaborative Design Environment  
R.M. Naveiro, R. S. Filho, M. Borges

Web Based Business Framework for Collaborative Product Development  
M.C. Pritchard, S.J. Passey, T. Lange, P.L. Wong

Integrated Co-Design of Software and Services  
C. van Husen, K. Meyer

**Session 58 – Supply Chain: Optimization – Room D**

MIP Optimisation for Large-Scale Transfer Line Balancing Problems using Decomposition

A. Dolgui, B. Finel, N. Guschinsky, G. Levin, F. Vernadat

Supply Optimization for the Production of Raw Sugar

M. Grunow, H.-O. Günther, R. Westinner

Supply Chain Coordination under Rebate with Dynamic Target

W. Yongjie, L. Liwen

A Design Study of Stochastic Mixed Lines with Control Factors

T. Yamada, K. Abe, M. Matsui

**Session 61 – Management 1 – Room G**

Determining the Most Appropriate Set of Weekly Working Hours for Planning Annualised Working Time

A. Corominas, A. Lusa, R. Pastor

Optimal Allocation of Heterogeneous Workers in a U-Shaped Production Line

K. Nakade, R. Nishiwaki

Optimal Utilization of Human Resources in Surgical Instruments Distribution in Hospitals

A. Kumar, S.J. Shim

An Information-Based Approach for Predicting Motor Learning

O. Benedettini, G. Mummolo

**Session 56 – Machining Dynamics Analysis – Room B**

High Strain Rate Testing at Elevated Temperatures: Part 4: Testing of Grade 2 Titanium

M.F. Quinlan, M.T. Hillery, P. Phelan

New Medium- and High-Temperature Plastic Lubricants for Heavy-Loaded

Components of Rolling and Sliding Friction

A.P. Avdeenko, V.A. Fedorinov, S.A. Konovalova

Dynamic Analysis for Sizing Accumulators in a Strip Processing Line

P. Bobig, M. De Monte, E. Padoano, D. Pozzetto

Deformation Effects on the Interface between X2CrNi 19 11 Stainless Steel and

HiPed NiTi Coating in Machining

J.A. Paro, T.E. Gustafsson, J. Koskinen

**Session 59 – Supply Chain Management 3 – Room E**

Utility of the Inventory Information Sharing in a Supply Chain

H. Ohta, R. Ikena

Integrated Process Modeling in Dynamic B2B Collaboration

J.Y. Oh, J.Y. Jung, S. Kim, H.T. Kim, S.H. Kang

Manufacturing Policy in Supply Chain with Uncertain Delivery Lead-Time

M. Fujii, E. Kusakawa, H. Ohta

Dynamic Pricing through AutoID-Enabled Product Tracing in Food Supply Chains

D. Li, O. Tang, C. O'Brien

**Session 62 – Economic Aspects – Room L**

Finding Optimal Leasing Parameters when there are Inventory Clearance Constraints

J. Pascual, R. Gatica

Capabilities for Integrated Solutions: Empirical Evidence from the IT Sector

F. Ceci

Role of 3rd Party Integrator in the Inter-Firm Business Process Integration

J. Papinniemi, J. Hallikas, H. Kärkkäinen

**Session 57 – Information Integration in Manufacturing – Room C**

Generation of Integrated Page from Web-Based Production Information Systems  
Y. Oda, C. Otani, M. Kanazawa, O. Yoshie

Design of Protocols for Wireless MEMS Sensor Network Systems in Industrial Applications

W. Jeong, S.Y. Nof

Study of Increasing Productivity in Industry with Mobile IT

M. Strand

Applications of Wireless Communication in Automated Manufacturing Systems

Y.-J. Chang, C.-Y. Huang

**Session 60 – Logistic Systems Comparison – Room F**

Comparison of ELV Systems in Mature and Rapid Growth Markets

S. Xu, B. Waller, L. Zhou, S.M. Disney

Changes of Production and Logistics Management by ICT and Their Influence on Energy Consumption in Japan

Y. Yano, K. Hayashi

The Impact of Material Feeding on Assembly Systems Performance - A

Comparative Study between Japan and Sweden

C. Wänström, L. Medbo

Environmental Logistics Management in Italian Socially Responsible Companies

F. Ciliberti, P. Pontrandolfo, B. Scozzi

**Session 63 – Simulations 2 – Room M**

Virtual Simulation of Glass Forming Cycle

I. Matoušek

Simulation of LOCOS Technology

D. Eidukas, R. Anilionis, T. Keršys

Simulation-Based Due-Date Performance Evaluation in CONWIP Systems

M.C. Santoro, M.A. Mesquita

Reliability of Posture Observation in Posture Recording

T. Hasegawa, Y. Higuchi, M. Kumashiro

**Wednesday, August 3**

**4:00 pm – 6:00 pm**

**Nine Contemporaneous Oral Presentations**

**Session 64 – Machining Issues 2 – Room A**

An Empirical Model on the Selection of Wear Resistant Steels  
C. Löwgren, V. Orpana, G. Löwgren

The Influence of Metalworking Fluid on Tribological Processes  
R. Rakić, Z. Rakić

Turning of an Aluminum Matrix Composite with CVD Diamond and PCD  
E. Uhlmann, J. König

Using Torque Motors in Machine Tools  
P. Domša, P. Souček

Redesign of Main Spindle Housing Made of Polymer Concrete  
G. Vrtanoski, V. Dukovski

Autonomous Line Formation of Square Arrayed Machining Cells by Self-Organization Mechanism  
S. Fujii, T. Kaihara, K. Sashio, N. Seki

**Session 67 – Machining Processes 2 – Room D**

Development of a CEMS Platform Based on MUMPS Process  
N. Scuor, P. Gallina, M. Nicolich, O. Sbaizero, V. Sergio

A Modern Manufacturing Process for Producing Rigid Lightweight Cell Structures  
J.S. Lepistö, J.P. Varis, M. Lohtander

Modelling of the Spring-Back of PM Compact  
D. Drndarevic

Chip Formation Mechanisms in Bandsaw Metal Cutting  
M. Sarwar, M. Persson, H. Hellbergh

A New Procedure Based on an Expert System Software for Roll Pass Design in Square and Round Rebar Rolling  
F. Lambiase, M. Durante, A. Langella, F. Capece Minutolo, C. Morra  
Operation Breakdown of a New Weight Compensation System for High Speed Robot Arms  
J. Schlattmann, H. Böhm

**Session 70 – QC Industrial Application 1 – Room G**

Troubleshooting in MES of a Semiconductor Factory  
K. Kabitzsch, V. Vasyutynskyy, G. Kotte

The Implementation of a Quality Cost System: A Case Study in a Brazilian Machine Tool Manufacturer  
J.R.C. Papa, F.A. Calarge

The Complexity Management Model (CMM) Applied to Automotive Companies in the United Kingdom  
M. Villegas, J. Kempson, T. Burden

Integrated Indicator for Total Product Quality in Industrial Enterprises (an Intelligent Knowledgebase)  
R. Lebon, M.Nashat Fors, O. Rashed

Intelligence TPS, Key to Global Production Strategy Advanced Science TQM: TPS-LAS Model using Process Layout CAE System at Toyota  
H. Sakai, K. Amasaka

Advanced Science TQM, a New Japan Quality Management Model: Development of a Global Production Strategy in Toyota  
K. Amasaka

**Session 65 – Layout Design – Room B**

Mathematical Modelling of the Design Process for the Layout of a Rotor Type Multi-Layered Assembling Machine  
N. Vodolazskaya, G. Petropoulos

An Integrated Approach for the Design of Plant Layout and Material Flows  
G. Confessore, P. De Luca, G. Liotta, A. Pacifici

Multiple Machines Plant Location Problems: Model Development  
S. Soegiharto

Virtual Simulation Tools: Problem Solving by Abduction in New Product Development  
M. C. Becker, M. Caputo, F. Zirpoli

Manufacturing System Design Decomposition: a New Approach for Competitiveness  
F. Tonelli, R. Melioli, R. Castello

**Session 68 – Networked Enterprise – Room E**

Analysis and Design of Holonic Manufacturing Systems  
A. Giret, V. Botti

Development of a Collaborative Decision-Making Model for a Network of Manufacturing SMEs  
H.W. Lin, S.V. Nagalingam, M. Chiu

Framework to Draw Cartographies of Co-Ordination Modes within SMEs Network  
M. Benali, P. Burlat

Autocorrelation in Queuing Network Type Production Systems - Revisited  
E.H. Nielsen

Swarm Based Systems of Systems Behavior Simulation for Network-Centric Enterprise  
L. Meyyappan, C.H. Dagli

Global Network Design of Manufacturing Companies  
E. Abele, H. Schulz, T. Liebeck

**Session 71 – Optimization Applications – Room L**

Large Scale Inventory Optimization using Spreadsheets  
M. Sauer, F. Paredes

A Metaheuristic Approach for Solving Vehicle Routing in the Distribution of Bulk Gas  
M.D. Alfaro, J.M. Sepulveda, R. Vilches

The Real-Time Buffer Management for DBR Scheduling  
K. Woo, S. Park, S. Fujimura

Proposal of a New Decision Making Multi-Criteria Methodology Applied to the Reengineering of the Layout in an Electromechanical Company: The Score Analytic Hierarchy Process  
D. Falcone, F. De Felice, A. Silvestri, L. Pettillo

Modeling and Optimization of Integrated Flexible Manufacturing, Assembly and Disassembly by Petri Net  
R. Pisuchpen, E.L.J. Bohez

**Session 66 – Info & Communication Needs – Room C**

Communication Principles for Collaborative Production  
C.-C. Huang, C.-Y. Huang

Information and Knowledge Related to Production Requirements During Changes  
U. Harlin, M. Berglund, P. Gullander, J. Stahre

Selection of Number of Control Levels of Manufacturing System  
P. Balaišis, D. Eidukas, N. Bagdanavičius, E. Keras, A. Žickis

Support of Information Systems to Decision Making: Case Analysis of Information Needs and Factors in Forest Industry  
M. Suominen, J. Takala

Knowledge Creation by Information Sharing and Verification of Causal Relation with Organizational Effectiveness  
F. Miyashita, E. Sato, T. Izui

**Session 69 – Special Machining Processes – Room F**

Process Parameters Effects in Pultrusion: Numerical Analysis  
P. Carlone, G.S. Palazzo, R. Pasquino

An Estimate Expert System Technology for Burrless Rubber Moulding Focused on the Special Bush Products  
S.-B. Park

Finite Element Modeling of Aluminum Extrusion  
P. Tiernan, B. Draganescu, M.T. Hillery

Thermo-Mechanical Treatments on Aluminum Alloys for Microstructure Improvements  
A. Barcellona, D. Palmeri, R. Riccobono

Analysis and Optimization of a Die-Casting Process by Means of a Simulation System  
G. D'Urso, C. Ravasio, G. Pellegreni, G. Maccarini

The Design of a Holonic Workstation for STEP-NC Manufacturing  
R. Liu, S. T. Newman, R. D. Allen, A. Nassehi, S. Rhimifard

**Session 72 – Economic Analysis – Room M**

The Promoting Factors to Reduce Business Impact on the Environment  
M. Takahashi

Strategic Choices Behind Variations in Success, Case: European Steel Industry  
A. Tervonen, J. Sandström, S. Tilli

Economic Analysis of an n-unit Parallel Redundant System against a Single Unit System  
T. Koide, H. Sandoh, N. Igaki

AMT Economic/Financial Justification: a Rationale Model, Using Resource-Based View  
L.A. Borges, S.E. Gouvea da Costa, E. Pinheiro de Lima

Cost-Reliability Models for Technical Systems with Hazardous Failures  
A. Ben-Yair, D. Golenko-Ginzburg, Z. Laslo, A. Malisheva

Binomial Real Options Valuation Model for Skewed Value Distribution  
T. Hahtela

**Thursday, August 4                      9:00 am – 10:30 am**  
**Nine Contemporaneous Oral Presentations**

**Session 73 – Logistics Management 2 – Room A**

Utility of Outsourcing Services Agency for Return Processing Operations  
E. Kusukawa, T. Furukawa, H. Ohta

Structuring Customer Demands for Logistic Systems in Production Plants  
H.-A. Crostack, H.H. Holzmüller, R. Refflinghaus, M. Stolper

Control of Operations and the Order Entry Point  
R. Dekkers

Outsourcing Revisited  
R. Dekkers

**Session 76 – CAD – Room D**

CAD of Drives for Numerically Controlled Machine Tools  
Z. Pandilov, V. Dukovski

Socio-Technical Knowledge Management – Connecting 3D-CAD Design Tools and Designers' Social Environment  
R.V. Björkstrand, J.A. Lallimo

VD&T Approach a Tool to CAD/CAM Integration  
A. Saka, M. Carrard

A New Database Approach to Improve STL Files Correction Algorithms  
S. Mansour, P. Jamshidi, M. Haddad

**Session 79 – Management 2 – Room G**

A Multi Objective Genetic Approach to Strategic Resource Management for Staff Oriented Projects  
G. Aiello, T. Lupo

Ergonomic and Inclusive Design Strategies Improve Workshop Productivity  
W.F. Gaughran, E.H. Billett

Standards: Overlapping and Complementarity in Ergonomics and Occupational Health and Safety  
D.A. Coelho, J.C.O. Matias

Caregiver's Workload in Facility for Person with Severe Motor Intellectual Disabilities  
Y. Higuchi, T. Hasegawa

**Session 74 – Scheduling Applications 3 – Room B**

Transformation of Aggregate Production Plans into Detailed Schedules in Make-to-Order Manufacturing  
E. Niemi, V. Toivonen, K. Ikkala

Minimizing Earliness and Tardiness Costs Using an Ant System Approach  
G. Galante, E. Panascia, G. Passannanti

Cardboard Box Production Scheduling with the Cutting Stock Problem  
H. Misawa, M. Kanezashi

**Session 77 – Logistics Applications – Room E**

Analysis of Automated Order Picking Systems in High Rotation - High Volume Warehousing  
A.C. Caputo, P.M. Pelagagge

The Inventory Management Study by using Radio Frequency Identification System  
J.H. Kuan, G.L. Lai, H.L. Fu, S.W. Huang

Development, Implementation and Testing of a Saving-Matrix Based on Heuristic Procedure to Manage Delivery Activities in a Food Company  
P. Lunghi, M. Calamita, L. Paolini

Automated Materials Handling Systems: A Way to Increase Efficiency of Distribution Networks?  
F. Dallari, G. Marchet, M. Melacini

**Session 80 – QC Industrial Applications 2 – Room L**

On Line Monitoring and Fault Diagnosis System for Piercing Mill  
F.R. Kong, Z.H. Feng

Application of Taguchi Method to High Power Diode Laser Welding of Ti6Al4V Metal Sheet  
G. Casalino, F. Curcio, F. Memola Capece Minutolo

Detection of Abnormal Condition of the Parts Feeder by Time Series Control Chart and Neural Network  
A. Ohta, S. Uchida, M. Kitaoka

Lifetime Prediction of Insulating Materials by Fuzzy-Neural Networks and Expert Systems  
M. Hammer, Z. Riha, P. Latina

**Session 75 – Data Mining – Room C**

Optimization of a Large Manufacturing Process using the Patient Rule Induction Method  
I.-G. Chong, C.-H. Jun

Data Mining: Manufacturing and Service Applications  
A. Kusiak

Manufacturing Quality Data Mining through Decision-Tree-Based MSQIM  
H. Mizuyama

**Session 78 – Transportation Systems – Room F**

A Modal Shift Model for the Logistics Network System in Japan  
S. Yun, N. Katayama, S. Yurimoto

Intelligent Transportation Systems  
A. Marma, M. Zilys, D. Eidukas, A. Valinevicius

An Optimization Study for an Urban Public Transport System  
Ö. Yalçinkaya, G. M. Bayhan

Development and Evaluation of a New Concept for Distribution Vehicles  
P. Bark

**Session 81 – Assembly Line 2 – Room M**

A Linear Programming Model for Optimal Subassembly Level Determination in Shipbuilding Industry  
G. Aiello, T. Lupo, A. Masnata

A Study on Workload of Automobile Assembly Line  
S. Nakayama, H. Nakayama, K. Mikami, K. Nakayama

Computer-Controlled Flexible Line for Auto Engines  
K. Jiancheng, C. Shikang, X. Fengxian, L. Ming, D. Jie

A Hybrid Design Approach of Unpaced Fork and Join Open Assembly Systems by Metamodeling and Stochastic Search  
A.A. Bulgak

**Thursday, August 4                      11:00 am – 1:00 pm**  
**Five Contemporaneous Oral Presentations**

**Session 82 – MRP/ERP – Room D**

The Outline of Master Production Scheduling System Based on TOC  
T. Matsuda

Identification of Critical Success Factors in ERP Implementation Projects  
A. Yokota, K. Yasuda

Responsiveness of Enterprise Resource Planning to Production Uncertainty  
S.C. Lenny Koh, S.M. Saad

Business Strategy Driven IT Systems: A Process Orientated Approach to  
Enterprise Systems Design  
P.D. Denton

Resource Planning for Collaborative Manufacturing using Case-Based Reasoning  
T.-M. Cheng, Y.-C. Liu

Business Process Oriented Design of ERP Systems for Small and Medium  
Enterprises  
M. Quiescenti, M. Bruccoleri, U. La Commare, G. Lo Nigro, S. Noto La Diega, G.  
Perrone

**Session 85 – Transducers 2 – Room G**

Dynamics of Piezodrives used in the Adaptive Optical Systems

L. Patasiene, G. Bauriene, A. Fedaravicius

Motor-Driven Conveyor System of SYT Type

X. Fengxian, L. Ming, X. Yunlong, Z. Keyu

Vacuum Grippers Optimisation in Automatic Flat Glass Production

M. Horák, F. Novotný

Software Package for Electronic Optical System Modeling

V. Čepulis, V. Markevičius, D. Navikas, P. Tarvydas, A. Noreika, V. Zabarskas, G.  
Vanagas

Command Transfer Method with Characteristic Analysis using Optical Flow

J. Usuki, D.Ito, K. Komiya, M. Kitaoka

**Session 83 – Facility Planning – Room E**

Dynamic Layout Method using Evolution Strategies in Case of Different Areas of  
Facilities

N. Hirabayashi, H. Nagasawa

Manufacturing Facility Layout for Re-Manufacturing and Quality Improvement

X. Yi, M. Chen, A. Bulgak

A Fuzzy Rule Based System to Measure Facility Layout Flexibility

D. Raman, S. Nagalingam, M. Chiu

Simultaneous Design of Block and Detailed Layout Based on Location Matrix

T. Irohara, T. Yamada

Considering Designer's Intention for the Extraction of Manufacturing Features

H. Muljadi, K. Ando, H. Takeda

An Impact of Virtual Reality on Designing Machines and Manufacturing Systems

K. Okulicz

**Session 86 – Supply Chain: Economic Issues – Room N**

Supply Chain, Vertical Product Differentiation, and Price Competition

S. Kobayashi, M. Ohba

Service Modeling for Intelligent Products in the Supply Chain Processes

A. Cea, E. Bajic

Influence of Information Flows on the Performance of Supply Chain: A

Methodological Approach

G. Capaldo, L. Raffa, P. Rippa

A Game Theory Analysis of Partnerships in a Supply Chain

Y. Okuyama, H. Ohta

**Session 84 – ICT Applications – Room F**

Construction of Common Data System on World Wide Web (WWW) using  
Evidential Dominance

Z.A.H. Maung, Y. Kume

Correspondence of Concept Hierarchies in Semantic Web Based upon Global

Instances and its Application to Facility Management Database

H. Takahashi, Y. Nishi, T. Gion, S. Minami, O. Yoshie

A Study on Necessity of Non-Semantic Code in Global Distribution of Information  
for Business Integration

H. Hasegawa, M. Nishio

Modeling of the Integrated Security System

A. Valinevicius, M. Zilys, D. Eidukas, S. Kilius

Network Traffic Control System of Multimedia Contents in Network

T. Takahashi, J. Usuki, K. Komiya, M. Kitaoka

A Methodological Approach for the Analysis of Interaction between Human  
Factors and ICT in KBF

G. Capaldo, L. Raffa, P. Rippa

# SPECIAL SESSIONS

## Monday, August 1

## Special Session 1 – Promise – Room N

### 2:00 pm – 3:30 pm

Managing Product Life-Cycle Information with GRIDs  
C. Hans, M. Schnatmeyer, J. Schumacher  
A Process Oriented Software Architecture for Product Lifecycle Management  
G. Hackenbroich, Z. Nochta  
Research Issues on Closed Loop PLM: Promise Approach  
H.B. Jun, D. Kiritsis, P. Xirouchakis

### 4:00 pm – 6:00 pm

Adaptive Production Systems to React to Product Changes  
A. Matta, M. Tomasella  
Closing the Product Lifecycle Information Loops  
C.C. Røstad, O. Myklebust, B. Moseng  
EOL Information Management for Tracking and Tracing of Products  
M. Schnatmeyer, J. Schumacher, K.-D. Thoben  
Maintenance Data Analysis for Use in Design for Maintainability  
M. Ruibal, A. Bufardi, D. Kiritsis, P. Xirouchakis  
Design Patterns for Managing Product Lifecycle Information  
K. Främling, J. Holmström

## Tuesday, August 2

## Special Session 2 – Innovation in Production Cluster – Room N

### 10:30 am – 12:30 am

Trust-Use of Potentials in Respect of Knowledge Networking and Problem Solving Processes in Production  
K. Wagner  
Competitive Advantages within Production Clusters through Competence Services  
C. Speth  
Innovation in the Slovenian High-Tech Cluster - An Approach to Distributed Manufacturing Systems  
P. Butala, B. Rihtaršič, A. Sluga  
The Automobile Cluster in the Emilia Romagna: Company Strategies and Organisational Evolution  
A. Bardi, F. Garibaldo

## Tuesday, August 2

## Special Session 3 – Human and Organisational Factors in Industrial Planning and Scheduling – HOPS – Room N

### 2:00 pm – 3:30 pm

Prochart Toolkit to Re-design Production Planning, Scheduling and Control Process  
J.E. Guinery, B.L. MacCarthy  
Production Planning and Actual Decisions: an Empirical Study  
J.C. Fransoo, V.C.S. Wiers  
A Foundation for Analysis of Human Cooperation in Multi-Party Scheduling  
K. Nezamirad, P. G. Higgins, S. Dunstall

### 4:00 pm – 6:00 pm

Cultural Aspects in Production Management  
R. Riedel  
Design of Integrated Management Systems for the Extended Shop-floor  
P. G. Moscoso, A. Lago  
Algorithmic Support for Human Rail Shunting Planners  
W.M.C. van Wezel, J. Riezebos  
Human, Technological and Organizational Aspects Influencing the Production Scheduling Process  
M. Berglund, J. Karlton  
Human Factors in Shopfloor Planning, Scheduling and Control  
T. Wäfler

## Wednesday, August 3

## Special Session 4 – Interop – Room N

**10:30 am – 12:30 am**

Manufacturing Software Interoperability Through Capability Profiling: An ISO 16100 Proposal  
M. Matsuda  
Model Driven Enterprise Interoperability  
T. Neple A. J. Berre, B. Elvesaeter

## Wednesday, August 3

## Special Session 5 – CO-DESNET – Room N

**2:00 pm – 3:30 pm**

Requirements for a Simulation-Based Tool to Aid in the Contract-Costing Process  
J. Byrne, C. Heavey, PJ Byrne  
Extension of Multi-Level, Multi-Stage Capacity-Constrained Production-Inventory Systems with Non-Zero Lead Times to Continuous Time  
R.W. Grubbström, T.T.T. Huynh  
The Adaptive Business Labour Organisation – a New Concept for Production Competiveness  
D. Spath, M. Richter, M. Becker  
From Supply Chain needs to improvement activities- A QFD Approach  
M. Barad

**4:00 pm – 6:00 pm**

Dynamic Scenario-Based Approach of Service Chains  
L. Wang, Y.S. Han, N. Vosselen, F. Vandamme  
Industrial Performance Measurement: an Approach Based on Information Aggregation  
L. Berrah, G. Mauris, F. Vernadat  
The Triple Algorithm for Optimal Dynamic Lotsizing in Discrete and Continuous Time  
R.W. Grubbström  
Extending the PFA Approach to the Identification and the Analysis of Enterprises Networks  
D. Antonelli, I. Cassarino, A. Villa  
Contract Costing in Outsourcing Enterprises: the Role of Simulation  
P. Liston, PJ Byrne, C. Heavey, L. Brown

## POSTER SESSION

Tuesday, August 2 – Wednesday, August 3

10:30 am – 6:00 pm

On self leadership behaviour and circle commitment in the small group activity

F. Miyashita, T. Arakawa, T. Izui

A Study of the Work Load in Clinical Technician

I. Yoshimura

Design of a Product Configuration System by the Object-Oriented Approach

D. Antonelli, N. Pasquino, V. Sergi, A. Villa

ISO 15530: Comparison between the two procedures for the uncertainty evaluation

F. Caiazza, E. Del Giorno, R. Pasquino, V. Sergi

Application of Taguchi Method to Diode Laser Welding of Ti6Al4V Metal Sheet

F. Memola Capece Minutolo, G. Casalino, F. Curcio

Freezing the MPS in Single-Level MRP Systems Under Unpredictable Orders Conditions

L. D'Alonzo, K. Fahmy Salama, A. Sianesi