



## FINAL PROGRAM

### 2<sup>nd</sup> International Symposium

on

## TOOLS AND METHODS FOR CONCURRENT ENGINEERING

### Sponsored by

The Manchester Metropolitan University, UK  
The University of Derby, UK  
Delft University, The Netherlands  
University of Budapest, Hungary

### Co-Sponsored by

The Institute of Mechanical Engineers  
The Institute of Electrical Engineers  
Hungarian Scientific Society of Mechanical Engineers - GTE  
Concurrent Engineering Research and Application Institute  
European Society of Concurrent Engineering

Manchester, 21 - 23 April, 1998

## VENUE OF SYMPOSIUM

The Symposium will be held in Manchester, in the Geffory Menton Building at the Manchester Metropolitan University's campus. The campus is just a few minutes walk from the Railway Station and Intercity bus station; and conveniently situated for public transport within the city.

Manchester is easily accessible by road and rail, with direct coach links from all main UK airports. Manchester International Airport is only 10 miles away.

London is 3.5 hours away from Manchester by rail and 4 hours away by coach.

## COMMUNICATIONS

The address of the TMCE '98 Symposium is:

TMCE '98 Secretariat,  
The Manchester Metropolitan University,  
Faculty Development Unit,  
John Dalton Building,  
Chester Street, Manchester M1 5GD, UK  
Phone: +44 - 161 - 247 1626 or +44 - 161 - 247 1628  
Fax: +44 - 161 - 247 6322 or +44 - 161 - 247 6326  
E-mail: azhar.latif@mmu.ac.uk  
Web: <http://www.csce.mmu.ac.uk/>

## LANGUAGE

The official language of the TMCE '98 Symposium and the Proceedings is English. No simultaneous translation into other languages will be available.

## CLOSING WORKSHOP

The closing workshop will take place at the Low Wood Conference centre where the TMCE '98 delegates will discuss open research issues on Concurrent Engineering, and debate new and future developments in tools and methods for concurrent engineering.

## SOCIAL PROGRAMS

A day trip to Windermere on Thursday 23 April 1998. This will be available at a small additional charge of £45. Coaches depart from the University at 08.00 am. The morning will begin with tea/coffee and then a trip on board of a steamer boat with wine and canapes along the Lake Windermere. This will be followed by a banquet at The Old England Conference Centre.

Windermere is England's longest lake, which stretches 11.5 miles from Waterhead near Ambleside to Lakeside at its narrow southern end. Wooded slopes dotted with villas line its shores while the water itself is nearly always busy with ferries, yachts, speed-boats and water-skiers. The cruise will end in Ambleside from where delegates will be taken to the banquet rooms of the Old England Conference Centre.

### CONDUCT OF SESSIONS

Session chairmen will be encouraged to guide their specified sessions to stimulate general discussions towards for instance the potential applications of presented tools and/or techniques for concurrent engineering in industry. Presenters of plenary papers will have 40 minutes for presentation followed by 5 minutes for discussions.

Presenters of topic papers will have 20 minutes for presentation and 5 minutes for discussions.

## TMCE '98 PROGRAMME AT A GLANCE

Tuesday, 21 April 1998	
09.00 - 10.00	<b>Registration</b> .....
10.00 - 11.20	<b>Welcome and Opening Session</b> .....
11.20 - 11.35	<b>Tea and Coffee Break</b> .....
11.35 - 1.00	<b>Plenary Session</b> .....
1.00 - 2.00	<b>Lunch</b> .....
14.00 - 15.40	<b>Topic Session One</b> <b>Topic Session Two</b>
15.40 - 15.55	<b>Tea and Coffee Break</b> .....
15.55 - 17.35	<b>Topic Session Three</b> <b>Topic Session Four</b>
19.00 - 22.00	<b>Evening Social Event</b> .....

Wednesday, 22 April 1998	
09.00 - 10.00	<b>Registration</b> .....
09.00 - 10.40	<b>Topic Session Five</b> <b>Topic Session Six</b>
10.40 - 10.55	<b>Tea and Coffee Break</b> .....
10.55 - 12.35	<b>Topic Session Seven</b> <b>Topic Session Eight</b>
12.35 - 13.30	<b>Lunch</b> .....
1.30 - 15.10	<b>Topic Session Nine</b> <b>Topic Session Ten</b>
15.10 - 15.25	<b>Tea and Coffee Break</b> .....
15.25 - 17.00	<b>Topic Session Eleven</b> <b>Topic Session Twelve</b>

## TMCE PROGRAM AT A GLANCE

Thursday, 23 April 1998	
08.00 – 13.00	Excursion to Lake Windemere .....
14.00 – 17.00	Closing Workshop

## DETAILED TMCE '98 SESSION PROGRAM

Monday	20 April 1998	Evening
15.00 - 20.00 <b>Pre-Registration</b>		
Tuesday	21 April 1998	Morning
09.00 - 10.00 <b>Registration</b>		
09.00 - 10.00 <b>Welcome and Opening Session</b> Chairpersons: <i>Prof. Imre Horváth,</i> <i>Dr. Taleb-Bendiab, A.</i>		
10.00 - 10.10 <b>Welcome to TMCE'98</b> <i>Dr. Taleb-Bendiab, A.</i> Head of Design and Manufacture, The University of Derby		
10.10 – 10.20 <b>Report on TMCE'98</b> <i>Prof. Horvath, I.</i>		
10.20 – 10.30 <b>Welcome to Manchester</b> <i>Prof. J. Mather</i> The Manchester Metropolitan Universtiy		
10.30 – 11.20 <b>Tools and Methods for Concurrent Engineering</b> <i>Mark Sealy</i> CSC Ltd, UK		
11.20 – 11.35 Coffee and Refreshment Break		

## PLENARY SESSION: TOOLS AND METHODS FOR CONCURRENT ENGINEERING

Tuesday	21 April 1998	Morning
11.35 – 1.00	<b>PS First Plenary Session</b> Chairman: <i>Imre Horvath, (NL)</i> <i>Professor</i>	
11.35 - 12.15	<b>Design of Products for the People</b> <i>Paul de Ruwe, professor (NL)</i>	
12.15 – 12.55	<b>Current Research Issues of Concurrent Engineering</b> <i>Frank-Lothar Krause, professor (D)</i>	
12.55 – 13.00	<b>Short Questions</b>	

1.00 - 14.00 Lunch

## FRAMEWORKS FOR CONCURRENT ENGINEERING

Tuesday	21 April 1998	Afternoon
14.00 – 15.40	<b>T1 First Topic Session</b> Chairman: <i>Ryszard Rohatyński, (P)</i> <i>professor</i>	
14.00 – 14.25	<b>Human Oriented Approach to Computer Support for Concurrent Engineering in Distributed Enterprises</b> <i>Ryszard Rohatyński, professor (P)</i>	
14.25 – 14.50	<b>Global Simultaneous Engineering</b> <i>Giminez, C. (BR)</i> <i>Telles, G.N. (BR)</i>	
14.50 – 15.15	<b>Concurrent Engineering Framework to Develop Industrial Automization Systems Based on STEP</b> <i>Garrido, J. (E)</i> <i>Marin, R. (E)</i> <i>Downie, B.R. (USA)</i>	
15.15 – 15.40	<b>Quality Function Deployment (QFD) – An Alternative Customer Focused Approach</b> <i>Price, L.C. (UK)</i>	

15.40 – 15.55 Coffee and Refreshment Break

## MANAGEMENT ISSUES IN CONCURRENT ENGINEERING

Tuesday	21 April 1998	Afternoon
14.00 – 15.40	<b>T2 Second Topic Session</b> Chairman: <i>Swift, K.G., (UK)</i> <i>professor</i>	
14.00 - 14.25	<b>Risk Management and Product Integrity – A Simple Approach to Concurrent Engineering</b> <i>Gatzen, H.H. (DE)</i> <i>Toenshoff, H.K. (DE)</i>	
14.25 – 14.50	<b>Appraisal Methods in a Concurrent Engineering Environment</b> <i>Yazdani, B. and Holmes, C.(UK)</i>	
14.50 – 15.15	<b>Introduction to Enabling Technologies to Support the Virtual New Product Development Activities: A Conceptual Framework</b> <i>Abul-Wahab, D.(UK)</i> <i>Taleb-Bendiab, A. (UK)</i>	
15.15 – 15.40	<b>Tools for Client Requirements Processing in Concurrent Engineering Life-Cycle Design and Construction</b> <i>Kamara, J.M., Anumbe, C.J. and Evbuomwan, N.F.O. (UK)</i>	
15.40 – 15.55	Coffee and Refreshment Break	

## GLOBAL PRODUCT DATA MANAGEMENT

Tuesday	21 April 1998	Afternoon
15.55 – 17.35	<b>T3 Third Topic Session</b> Chairman: <i>Krause, F.L. (D)</i> <i>professor</i>	
15.55 – 16.20	<b>Multiple Viewpoint Support for the Product Data Management of Complex Assemblies</b> <i>Baxter, J.E., Henson, B.W., Juster, N.P. and Sherwin, G. (UK)</i>	
16.20 - 16.45	<b>Global Product Data Management</b> <i>Krause, F.L. and Doblies, M. (D)</i>	
16.45 – 17.10	<b>GEOS-Based Analysis to Determine The Feasibility of Engineering Data Sharing</b> <i>Vergeest, J.S.M. and Horvath, I. (NL)</i>	
17.10 - 17.35	<b>Using PDM as a Tool to Support a Concurrent Engineering Application in a Mexican Company</b> <i>Al-Ashaab, A.H.S. and Ruiz, S.R. (MX)</i>	
Evening	Social Event	

## INTEGRATED DESIGN METHODS

Tuesday	21 April 1998	Afternoon
15.55 – 17.35	<b>T4 Fourth Topic Session</b> Chairman: <i>Swift, K.G. (UK)</i> <i>professor</i>	
15.55 – 16.20	<b>Extensive Satisfactory Design Method for Actual Product Design</b> <i>Adachi, E. (J)</i>	
16.20 - 16.45	<b>An Eco-Design Framework for Small and Medium Sized Manufacturing Enterprises</b> <i>Duckworth, A.P., Baines, R.W., and Taleb-Bendiab, A., (UK)</i>	
16.45 - 17.10	<b>A Structured Approach to Successful Design for the Environment</b> <i>Santos-Reyes, D. and Lawlor-Wright, T.(UK)</i>	
17.10 – 17.35	<b>Supporting the Integration of Ergonomics in an Engineering Design Environment</b> <i>Woodcock, A. and Margaret Galer Flyte (UK)</i>	
Evening	Social Event	

## DECISION MAKING IN CONCURRENT ENGINEERING

Wednesday	22 April 1998	Morning
09.00 – 10.40	<b>T5 Fifth Topic Session</b> Chairman: <i>Tony Medland, (UK)</i> <i>professor</i>	
09.00 – 09.25	<b>Design Decision Consequences: Key to “Design for Multi-X” Support</b> <i>Borg. J (M)</i> <i>Yan, X.T. (UK)</i>	
09.25 – 09.50	<b>Decision Based Communications in Design</b> <i>Medland, A.J. (UK)</i>	
09.50 – 10.15	<b>A Generic Library to Guide Decision Making in Concurrent Engineering</b> <i>Matta, N., Ros, C. and Corby, O. (F)</i>	
10.15 – 10.40	<b>Co-Design: Design Decision Support System</b> <i>Hague, M.J. and Taleb-Bendiab, A. (UK)</i>	
10.40 – 10.55	Coffee and Refreshment Break	

## VIRTUAL TECHNOLOGIES FOR CONCURRENT ENGINEERING

Wednesday	22 April 1998	Morning
09.00 – 10.40	<b>T7 Seventh Topic Session</b> Chairman: <i>Stig Ottosson, (S)</i> <i>Professor</i>	
09.00 – 09.25	<b>Spatial Behavioral Simulation of Mechanical Objects</b> <i>Horvath, I. (NL) and Kuczogi, Gy (NL), Staub, G. (D)</i>	
09.25 – 09.50	<b>Virtual Reality in Product Development</b> <i>Stig Ottosson (S)</i>	
09.50 – 10.15	<b>Reactivity and Pro-Activness in Virtual Prototyping</b> <i>Gomes, C.P.R., Feijo, B., Cerqueira, R.F. de G. and Lerusalimschy, R. (BR)</i>	
10.15 – 10.40	<b>Producing Physical Prototypes Using a Sculpturing Robot</b> <i>Tangelder, J.W.H., Vergeest, J.S.M., and van de Belt, H.T. (NL)</i>	

10.40 – 10.55      Coffee and Refreshment Break

## INTELLIGENT DESIGN SUPPORT SYSTEMS

Wednesday	22 April 1998	Morning
10.55 – 12.35	<b>T6 Sixth Topic Session</b> Chairman: <i>Esat, I.I., (UK)</i> <i>Professor</i>	
10.55 – 11.20	<b>Intelligent Engineering Design Support Systems</b> <i>Chuang, W.K., and Esat, I.I. (UK)</i>	
11.20 – 11.45	<b>Multi-Agents System to Support Decision Making in Concurrent Engineering</b> <i>Cointe, Ch., and Matta, N. (F)</i>	
11.45 – 12.10	<b>Geometrical Interpretation and Construction of Multi-Layered Perceptrons</b> <i>Esat, I.I (UK)</i>	
12.10 – 12.35	<b>An Intelligent Optimum Design Method for Structural Systems Dealing with Multiple Objectives and Fuzziness</b> <i>Sadajii Ohkubo and Dissanayake (J)</i>	

12.35 – 1.30      Lunch

## DESIGN FOR ASSEMBLY AND DISASSEMBLY

Wednesday	22 April 1998	Morning
10.55 – 12.35	<b>T8</b>	<b>Eighth Topic Session</b> Chairman: <i>Gadah, R., (USA)</i> <i>Professor</i>
10.55 – 11.20		<b>The Design for Assembly within the Conceptual Design Phase</b> <i>de Sousa, A.G., Forcellini, F.A., and Back, N. (BR)</i>
11.20 – 11.45		<b>Computer Support for Proactive DFA</b> <i>Swift, K.G., Dalgleish., G.F., Barnes, C.J., Jared, G.E.M., and Tate, S.J. (UK)</i>
11.45 – 12.10		<b>A Methodology to Design for Selective Disassembly</b> <i>Srinivasan, H. and Gadh, R. (USA)</i>
12.10 – 12.35		<b>The Role of Staged Data Release in a Concurrent Engineering Environment</b> <i>Holmes, C. and Yazdani, B. (UK)</i>
12.35 – 1.30		Lunch

## CONTROL AND VISUALIZATION OF ENGINEERING PROCESSES

Wednesday	22 April 1998	Afternoon
13.30 – 15-10	<b>T9</b>	<b>Ninth Topic Session</b> Chairman: <i>Brissaud, D., (F)</i> <i>professor</i>
13.30 – 13.55		<b>Domain Systems Models and Concurrent Engineering</b> <i>Katai, F., Yoon, T.S., Tanaka, H., and Lu. M.L. (J)</i>
13.55 – 14.20		<b>Feed-back to Design from Knowledge on Process Planning by Indicators</b> <i>Brissaud, D. and Blondaz, L. (F)</i>
14.20 – 14.45		<b>Visualisation of Engineering Progress to Support Monitoring and Control of Design Processes</b> <i>Weigers, T. and Knoop, W.G. (NL)</i>
14.45 – 15.10		<b>A High-Level Control Mechanism for Managing Conflict Resolution in Concurrent Product Design</b> <i>Cooper, S.J. and Taleb-Bendiab, A. (UK)</i>
15.10 – 15.25		Coffee and Refreshment Break

## EDUCATION FOR INTEGRATED PRODUCT DEVELOPMENT

Wednesday	22 April 1998	Afternoon
13.30 – 15-10	<b>T10 Tenth Topic Session</b> Chairman: <i>Vajna, S. (D)</i> <i>professor</i>	
13.30 – 13.55	<b>Integrated Product Development Curriculum</b> <i>Vajna, S. and Burchardt, C. (D)</i>	
13.55 – 14.20	<b>Industrial Product Development Projects in University Environment</b> <i>Bjork, E. (S)</i>	
14.20 – 14.45	<b>Education in Concurrent Engineering is a Must</b> <i>van Kollenburg, P.A.M. and Punt, G. (NL)</i>	
14.20 – 14.45	<b>Discussion:</b> <b>How to comply to the challenges.</b>	
15.10 – 15.25	Coffee and Refreshment Break	

## FEATURE TECHNOLOGY IN CONCURRENT ENGINEERING

Wednesday	22 April 1998	Afternoon
15.25 – 17.05	<b>T11 Eleventh Topic Session</b> Chairman: <i>Imre Horvath (NL)</i> <i>professor</i>	
15.25 – 15.50	<b>Integrated Feature-Based Modelling in Concurrent Engineering</b> <i>De Martino, T., Falcidieno, B. and Giannini, F.(I)</i>	
15.50 – 16.15	<b>Theoretical Fundamentals of Natural Representation of Shapes Generated with Gestural Devices</b> <i>Horvath, I. and Vergeest, J.S.M. (NL)</i>	
16.15 – 16.40	<b>Feature-Based Approach to CAD/CAM/CNC Integration</b> <i>Sharmazanashvili, A.N. and Megrelishvili, L. (G)</i>	
16.40 – 17.05	<b>Feature-Based System for Manufacturing Process Optimisation</b> <i>Gayretli,A. and Abdalla, H.S. (UK)</i>	
Evening	Social Event	

## ENABLING TECHNOLOGY FOR CONCURRENT ENGINEERING

Wednesday	22 April 1998	Afternoon
15.25 – 17.00	<b>T12 Twelfth Topic Session</b> Chairman: <i>Merabti, M. (UK)</i> <i>Professor</i>	
15.25 – 15.50	<b>A Critical Review of the Application of CSCW in the Product Design Lifecycle: Past, Present and Future</b> <i>Woodcock, A. and Scrivener, S.A.R. (UK)</i>	
15.50 – 16.15	<b>CONCERT: A Middleware-Based Support Environment for Concurrent Engineering</b> <i>Hanneghan, M., Merabti, M. and Colquhoun, G. (UK)</i>	
16.15 – 16.40	<b>Software Support for Agile Manufacturing Systems and Virtual Enterprises Through the Use of Multi-Agent Systems</b> <i>Williams, M.J. and Taleb-Bendiab, A. (UK)</i>	
16.40 – 15.05	<b>Parallel Synthesis using Genetic Algorithms in a Concurrent Workstation Environment</b> <i>Falkenberg, A. (DE)</i>	

Evening

Social Event

## DEBATE AND SOCIAL EVENT

Thursday	23 April 1998

08.00 – 18.00      Trip to Lake Windemere.

The closing workshop will take place at the Low Wood Conference centre where the TMCE '98 delegates will discuss open research issues on Concurrent Engineering, and debate new and future developments in tools and methods for concurrent engineering.

Coaches depart from the University at 08.00 am. The morning will begin with tea/coffee and then a trip on board of a steamer boat with wine and canapes along the Lake Windermere. This will be followed by a banquet at The Old England Conference Centre. The cruise will end in Ambleside from where delegates will be taken to the banquet rooms of the Old England Conference Centre for the Closing Workshop.