

EUROMECH

EUROPEAN MECHANICS SOCIETY

Final Report

Please send this report to the Secretary-General of EUROMECH, within one month after the Colloquium.

EUROMECH Colloquium No: 370

Title: "Synthesis of Mechatronic Systems"

Dates and location: September 15-17, 1997
University of Duisburg / Germany

Chairman: Prof. Dr.-Ing. habil. M. Hiller / Germany / Duisburg

Co-Chairman: Prof. dr. ir. H. Van Brussel / Belgium / Leuven

Is there need of another Colloquium on the same or a related subject? Which year?

Full registration fee: 100 DM

What other funding was obtained? Deutsche Forschungsgemeinschaft (DFG)

What were the participants offered? Scientific Program (presentations, discussions)
Final support (travel costs and accomodation)
Social event (harbour ship tour)

Number of members of EUROMECH (reduced registration fee): 7

Number of non-members of EUROMECH (full registration fee): 27

Number of participants from each country:

Austria	<u>2</u>	Germany	<u>12</u>	Romania	<u>1</u>
Belgium	<u>6</u>	Great Britain	<u>1</u>	Russia	<u> </u>
Byelorussia	<u> </u>	Greece	<u> </u>	Slovakia	<u> </u>
Bosnia	<u> </u>	Hungary	<u> </u>	Slovenia	<u> </u>
Bulgaria	<u>3</u>	Ireland	<u> </u>	Spain	<u> </u>
Croatia	<u> </u>	Italy	<u>1</u>	Sweden	<u> </u>
Czech Republic	<u>3</u>	Latvia	<u> </u>	Switzerland	<u> </u>
Denmark	<u> </u>	Lithuania	<u> </u>	Ukraine	<u> </u>
Estonia	<u> </u>	Netherlands	<u>2</u>	Yugoslavia	<u> </u>
Finland	<u> </u>	Norway	<u> </u>	Others	<u>1</u>
France	<u> </u>	Poland	<u>2</u>	Total	<u>34</u>
Georgia	<u> </u>	Portugal	<u> </u>		

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January 15, 1998

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Scientific Report
Euromech Colloquium 370
'Synthesis of Mechatronic Systems'

Computer science and electronics are increasingly influencing traditional disciplines such as mechanical and electrical engineering. Hence, in future the design of new technical products will only be possible through the involvement of specialists from various overlapping fields in every phase of the development. This is the basic idea of *mechatronics*, which has emerged as a new paradigm for machine design and has become one of the corner stones of *concurrent engineering*. Mechatronics advocates a *systems-thinking approach to intelligent-machine design* by synergetically combining the previously mentioned disciplines in an integrated manner during the design cycle. The ultimate goal of mechatronics is to achieve a system performance superior to what can be achieved by traditional sequential design, characterized by a certain degree of intelligence.

The Euromech Colloquium 370 '*Synthesis of Mechatronic Systems*' brought together scientists and engineers, active in the field of mechatronics, to discuss recent evolutions and methodologies, underlying and supporting the process of designing complex multidisciplinary systems. It has indeed been felt that a generic overall design methodology for these complex systems, covering appropriately the interactions between the system components, is still lacking. Therefore, the organisers had considered it useful to organise the discussions around the central theme of design methodology issues, both on the system and component level. The following topics were covered:

- Design Methodologies of Mechatronic Systems,
- Design Software / Design Environments / Modelling & Simulation,
- Control & Measurement,
- Actuators & Sensors and
- System Design.