

# 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: 388

Title: Modelling of Glass Forming Processes

Dates and location: 13-15 October 98, Valenciennes, FRANCE

Chairman: PR LOCHEGNIES Dominique

Co-Chairman: PR Jérôme Oudin

Is there need of another Colloquium on the same or a related subject? Which year? NO-

Full registration fee: 700 DM Full / 350 DM Reduced.

What other funding was obtained? University of Valenciennes 7000 DM.

What were the participants offered? All participants: Proceedings, Coffee Breaks, Lunches, Dinners, Traveling, Members of Scientific Committee and Invited Speakers: + hotel fees, Arrival Dinner.

Number of members of EUROMECH (reduced registration fee): 2

Number of non-members of EUROMECH (full registration fee): 60

Number of participants from each country:

Austria	<u>   </u>	Germany	<u>7</u>	Romania	<u>   </u>
Belgium	<u>4</u>	Great Britain	<u>4</u>	Russia	<u>1</u>
Byelorussia	<u>   </u>	Greece	<u>   </u>	Slovakia	<u>3</u>
Bosnia	<u>   </u>	Hungary	<u>   </u>	Slovenia	<u>   </u>
Bulgaria	<u>   </u>	Ireland	<u>   </u>	Spain	<u>1</u>
Croatia	<u>   </u>	Italy	<u>6</u>	Sweden	<u>   </u>
Czech Republic	<u>1</u>	Latvia	<u>   </u>	Switzerland	<u>   </u>
Denmark	<u>   </u>	Lithuania	<u>   </u>	Ukraine	<u>   </u>
Estonia	<u>   </u>	Netherlands	<u>8</u>	Yugoslavia	<u>   </u>
Finland	<u>1</u>	Norway	<u>   </u>	Others	<u>13</u>
France	<u>12</u>	Poland	<u>   </u>	Total	<u>62</u>
Georgia	<u>   </u>	Portugal	<u>1</u>		

Please turn

**Euromech 388 :      *Modelling of Glass Forming Processes***

**Chairmen : D. LOCHEGNIES and J. OUDIN (LAMIH-UMR CNRS 8530, Valenciennes, France)**

The glass processing industry is mainly divided into two distinct parts, the production of hollow glass items and the manufacturing of flat glass products. With the current design evolution, the new market's needs and the objective of reducing the manufacturing costs, the glass manufacturer has to obtain a better control and knowledge of his production means, and his limits to respond quickly to the new specifications of the designer. In this way, the introduction of the numerical modelling is a very powerful mean of solving complex glass forming problems, reducing the trial and errors.

The Colloquium Euromech 388 took place in the new Theatre of Valenciennes "Le Phenix", from October 13th-20th, 1998. There were 62 participants from 17 countries. The main scope of this International Colloquium has been to survey the art in the development of scientific modelling of glass forming processes, even in hollow and flat glass production with a particular emphasis to the latest in numerical techniques, their validation and application in industrial glass forming practice. With 28 presentations from international industrial and research groups, the Colloquium was divided into the following seven sessions: Trends/Outlook, Glass Properties, Heat Transfer, Theoretical Formulations and Applications, Flat Glass Forming, Hollow Glass Forming, Residual Stresses and Fracture in Glass, and Particular Industrial Applications.

From these presentations and discussions, the main subjects of interest seems to be the following : identification of glass properties, treatment of radiative heat-flow, optimisation techniques used for the research of the process parameters, computation and prediction of the residual stresses in the glass after tempering or annealing procedures.

In conclusions, according to the presentations and discussions of these specialists of the glass industry, it becomes more and more evident that numerical simulation is the most promising approach to solve problems with regard to glass forming processes in the future. At this moment, the integration of these modelling approaches, when it is effective, exists only in the large glass companies and many university speakers mentioned a substantial lack of support by the glass industry. In fact, it is often hard to obtain the necessary data to be introduced in the different numerical models of glass forming processes and after that, comparison data on the real processes. Obviously these data are hardly available and experimentations remain expensive. For glass producing companies and research institutes, one of the next main efforts will be the validation and the effective integration of these numerical models inside the design and manufacture of the glass products.

 18/12/98 -  
PR. D. LOCHEGNIES