

EXPERT MEETING ON INNOVATIVE GLASS MELTING PROCESSES FOR THE YEAR 2020

By initiative of the International Commission on Glass (ICG), a group of 16 experts in the field of glass melt technology, from 8 different countries, met in Brig, Switzerland from 26. till 29. March 2008 to discuss the current state-of-the-art of industrial glass melting processes and future challenges and constraints for the glass industry.

The experts have been invited to present a paper on fundamentals of glass melting and possible routes to develop more energy-efficient, environmentally sound and compact glass melting concepts. These presentations are considered as a starting point for further discussions and future R&D activities in this field.

In this issue of the journal *Ceramics-Silikáty*, the first 4 of the 14 presented papers are published.

During this expert meeting, the most important directions for research and technology developments have been selected by the expert group and the meeting was guided by the Fraunhofer Institute for System- und Innovationsforschung in Germany in order to derive clear conclusions for future work (roadmap process).

The four chosen main directions for further development activities include:

- development of new glass furnace designs with dedicated sections for batch heating, melting-in, gas removal and homogenization of the melt;
- research on laboratory test methods for developing more reactive raw material batches or developing batch compositions with lower energy demand upon melting;

- engineering of flue gas heat recovery installations to be demonstrated for exhaust gases from glass furnaces to reduce effectively the energy consumption of industrial glass melting;
- development of robust glass melt or combustion sensors in combination with advanced control of the melting and combustion process in glass furnaces.

Four teams have been established in Brig, to elaborate separate project plans for these 4 topics.

These plans will be the first step for an ambitious international project to be submitted for funding in 2009.

Furthermore, it has been recognized that there should be a clear characterization of glass quality and there should be standard glass quality analysis methods in terms of seed count, homogeneity of glass, color specification etcetera. The expert group proposed to the International Commission on Glass to initiate a Technical Committee or Sub-Committee addressing this issue.

A need for improved training programs and student textbooks describing the glass melting processes and including thermodynamics of melting of glass and the chemical engineering aspects of glass melt processes has been identified.

The expert meeting in Brig was organized by Prof. Wolfram Höland from IVOCLAR and Prof. Ruud Beerkens from TNO and this event was funded by the European Forum on Glass Applications (EFONGA) project sponsored by the European Union.

Ruud Beerkens



Bringing together Research on Innovative Glass melting - B.R.I.G.