



Glass strength program taking shape

I last addressed the topic of glass strength in the August 2009 *Bulletin* with a review of the June 2009 Vancouver workshop entitled, “The Future of Glass – A Society Changing Symposium.” (The reports from that day and most of the presentations are available for download from the “Strength in Glass” page on our website, www.gmic.org.)

The 100 or so participants in that workshop demonstrated to the GMIC, and the industry as a whole, the broad interest that the possibility of increasing glass strength has for many of you! One very positive sign is that the distribution list developed from among attendees who have an interest in being informed and potentially participating in the program going forward is now at more than 70 individuals from around the world. Besides developing globally, the effort is linked directly to the International Commission on Glass’s Technical Committee on Mechanical Properties: TC06, and to its chairman, Russell Hand of Sheffield University.

Following Vancouver, we began to implement the suggested actions and build an organization that will move this effort forward. Conference calls and meetings over the ensuing weeks and months have now given our industry a plan to move ahead. It should be noted that this has not been a closed process: We still welcome the involvement of anyone, anywhere, with an interest in accelerating the achievement of stronger glass of all types.

On Aug. 20, 2009, at Alfred University, representatives of glass companies, universities and glass users met to begin building a structure to support these efforts. Terms you will be seeing as we progress are “Core Research Team”

(CRT – yet another acronym!) and “Strength Steering Team” (SST).

The CRT’s overall coordinator is Chuck Kurkjian (adjunct professor at University of Southern Maine and Rutgers University). The CRT will focus on various perspectives that have an impact on glass strength. Seven “teams” were identified at the outset, each with its own “principal investigator”:

- Strength/Fatigue – Dick Brow (Missouri University of Science and Technology);
- Damage – Chuck Kurkjian;
- Coatings – Carlo Pantano (Pennsylvania State University);
- Modeling/Theory – Prabhat Gupta (Ohio State University);
- Theory and Practice – Suresh Gulati (Corning Inc.); and
- Strengthening – Arun Varshneya (Alfred University).

Each team will also have associated researchers. The CRT is drafting a proposal that will identify phases of research and areas of focus, along with an estimate of costs for various areas. Again, additional individuals and organizations are welcome to participate – we can put you directly in touch with the PI of the area that interests you the most.

The SST at present consists of representatives from four glass companies, one university and one user company. Its objective is to take the CRT proposal and devise a “white paper” that can be given to glass companies and government agencies. We want to obtain the support of the glass companies for the project and we hope the government agencies will assist with funding to accomplish the work. We would welcome committed individuals for this task as well.

One additional goal is to identify a professional writer to develop articles for popular and scientific magazines that

will give visibility to the issue of glass strength and demonstrate the enormous implications to society, the environment and the glass industry, itself, if substantial strength increases can be obtained.

A next step in this process is to convene a second glass-strength workshop as follow-up to the Vancouver event. The workshop will take place in Corning, N.Y., and it will occur at the end of ACerS Glass and Optical Materials Division’s Annual Conference. The likely date for the workshop is Thursday, May 20, 2010. See future ACerS announcements for details, or contact the GMIC if your interest is specifically this workshop alone.

In addition, Chuck Kurkjian, our strength-of-glass leader, has launched a new blog to further facilitate a broad-ranging discussion to take place on the web around the topic. Kirkjian says the purpose of his “Strength of Inorganic Glasses” is “to allow those interested in the strength of inorganic glasses and associated properties to easily share their data, experimental setups, theories, etc., with the rest of the scientific community interested in this subject.”

To visit the blog, go to www.glass-strength.blogspot.com. All visitors can view the “strings” that develop. If you would like to be a member of the blog – being a “member” allows you to submit comments or initiate new topics – you will need an invitation from Kurkjian. To obtain an invitation, email him at ckurkja@rci.rutgers.edu.

Interested parties may also visit my web site: www.glass-fracture.org.

I look forward to seeing all who are interested in this critical initiative in Corning in May 2010.

Michael Greenman, Executive Director
Glass Manufacturing Industry Council
tel 614-818-9423
fax 630-818-9485
mgreenman@gmic.org
www.gmic.org