

Safety in chemistry and materials technologies

Issue no. 2 of 1. April 2009

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Joschka Fischer visits BAM to be informed about hydrogen storage in glass capillaries

Joschka Fischer visiting BAM

In November 2008 Mr. Joschka Fischer, former German vice-chancellor and minister of foreign affairs, visited BAM to be informed about an actual research project regarding hydrogen storage in glass capillary arrays. This promising project is supported by C.En Ltd. (www.cenh2go.com).

It is a well known fact that hydrogen is one of the most promising energy sources of the future. But until now the major problem which prevents its use in broad fields of our daily life is the storage of hydrogen in reasonable quantities. BAM is currently looking into hydrogen storage in glass capillaries. Using quartz glass capillaries which can be filled with hydrogen up to pressures of 1200 bar it is possible to store the gas repeatable in light weight storage systems.

Quartz glass has a three times higher tensile strength than steel at three times lower density. In preliminary tests a gravimetric storage capacity of 33 % at a comparable low storage pressure of only 400 bar was achieved. With a volumetric capacity of 28 % the target for the year 2010 announced by the US Department of Energy was already achieved without any changes to the capillaries regarding the material or wall thickness. Systematic test series have been started in BAM and it is to expect that the DOE's 2015 target will be achieved in the near future.



Visit of Joschka Fischer and the Israeli delegation

Later on such storage systems can be produced in every size and can therefore be used like batteries for many applications e.g. electronic devices or cars. The rich potential of such a storage system was shown with the first prototype.

During his visit Mr. Fischer was deeply impressed with the project.

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