



**Press Release No. 6/98**  
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## **100 years of liquid hydrogen**

### ***DWV and DKV look back and ahead at Wuerzburg***

100 years ago hydrogen was for the first time cooled so far down that it liquefied. In the Royal Institution at London James Dewar presented to an illustrious audience a clear, light, slightly sparkling and very cold liquid (-253 °C, just 20° above absolute zero).

DWV and the German Society for Refrigeration and Air Conditioning (DKV) will remind this historical event during an event to be held on 19. and 20. November 1998 at Wuerzburg, and they will also take a look into the future of hydrogen technology - where there is certainly a lot to be seen.

Renewable energies will establish themselves in our energy economy in the long run. They need an equally clean and sustainable energy carrier which should be easy to store and transport. The prime candidate for this is hydrogen. For many purposes its liquid phase is used because it has the highest energy density of all its states. The Wuerzburg event will deal not only with the cold liquid, however, but also with safety and economical aspects as well as with its use in fuel cells.

Hydrogen liquefaction was James Dewar's greatest and remained his last scientific triumph. The last permanent gas, helium, was liquefied in 1908 at Leiden (The Netherlands), but this was so difficult that down to the 50s liquid helium remained inaccessible for most scientists. Liquid hydrogen remained the workhorse for all fields of research where cryogenic temperatures were used. Among these were chemical reaction technology, solid state physics (superconductivity, electronics), quantum, atomic, and nuclear physics, and many more. It was used for other purposes as well. Elementary particle physics used it in large amounts to fill bubble chamber detectors until about 1980. Space flight, finally, would have been impossible without liquid hydrogen as fuel. James Dewar's pioneer achievement 100 years ago was thus a milestone for science and technology.

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