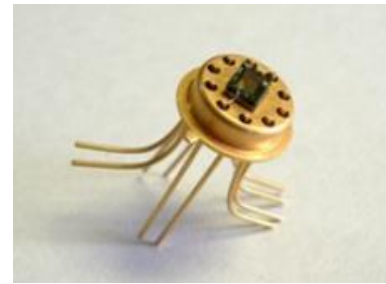


Hydrogen dispersion in a cylindrical vessel filled with air

RRC Kurchatov Institute in Russia

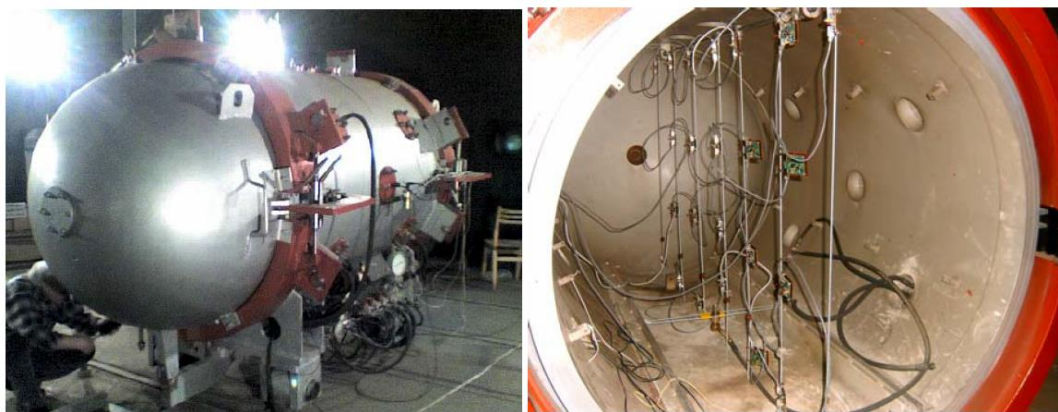
For rooms with a potential explosion hazard, it is necessary to take measures to reduce the explosion risk to an acceptable level. One of those measures is to place explosive-gas sensors inside the hazardous room. To avoid a formation of explosive gas mixtures, the sensor should activate emergency ventilation as soon as it will detect a critical gas mixture concentration.

To develop guidelines for sensor allocation, it is necessary to study the basic flow patterns during hydrogen release and dispersion inside of room for the representative hypothetical accident scenarios and to collect quantitative data on averaged speed propagation of the critical concentration front (envelop of explosive/flammable gas cloud) under well-controlled boundary and initial conditions.

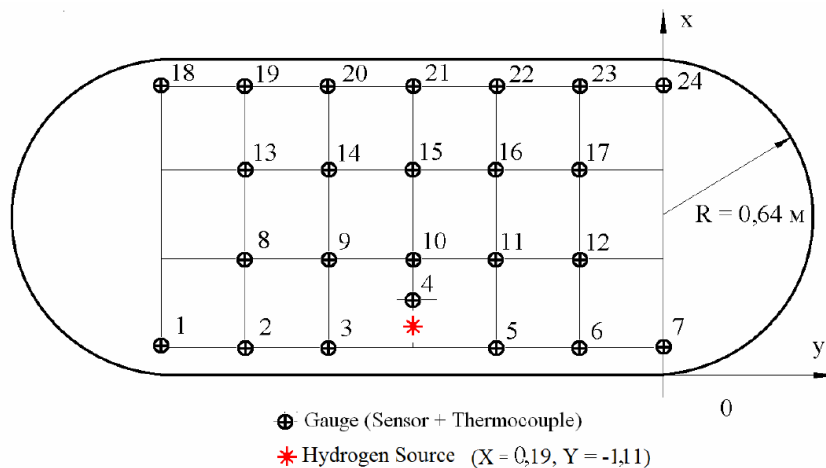


Thermal conductivity gauge
XEN-TCG3880

The thermal conductivity XEN-TCG3880 sensor from Xensor Integration and acoustic sensors were used within the experimental chamber to perform the necessary hydrogen concentration measurements.



External (left) and internal (right) views of the experimental chamber



Passages from original work are primarily used to illustrate the use of thermal conductivity gauges XEN-TCG3880 within an experimental application. Please contact the original authors or official distributor for the full publication.

Reference

Hydrogen subsonic upward release and dispersion experiments in closed cylindrical vessel

Denisenko V.P., Kirillov I.A., Korobtsev S.V., Nikolaev I.I., Kuznetsov A.V., Feldstein V.A., Ustinov V.V., International Conference on Hydrogen Safety, San Sebastian, Spain, September 11-13, 2007.



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