# Solid hydrogen micro spheres for laser proton acceleration

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Solid hydrogen micro spheres have been used as internal targets for storage rings since the 1990ies (e.g. [1]). But due to their dimensions and low spatial stability, these pellet generators are of low value for laser plasma interaction experiments, where high spatial and temporal stability of the hydrogen droplets is required.

Here we present our approach of a compact cryogenic source [2] for laser plasma interaction experiments. The cryogenic source is delivering 9 µm sized hydrogen pellets at a repetition rate of 2 MHz with high spatial and temporal stability.

[1] Ekström *et al*., ”Hydrogen pellet targets for circulating particle beams”, Nucl. Instrum. Meth., **371,** 572-574 (1996)
[2] Costa Fraga *et al*., Rev. Sci. Instrum. **83**, 025102 (2012)