

SUPPORTING INFORMATION

Catalytic production of hydrogen from glucose and other carbohydrates under exceptionally mild reaction conditions

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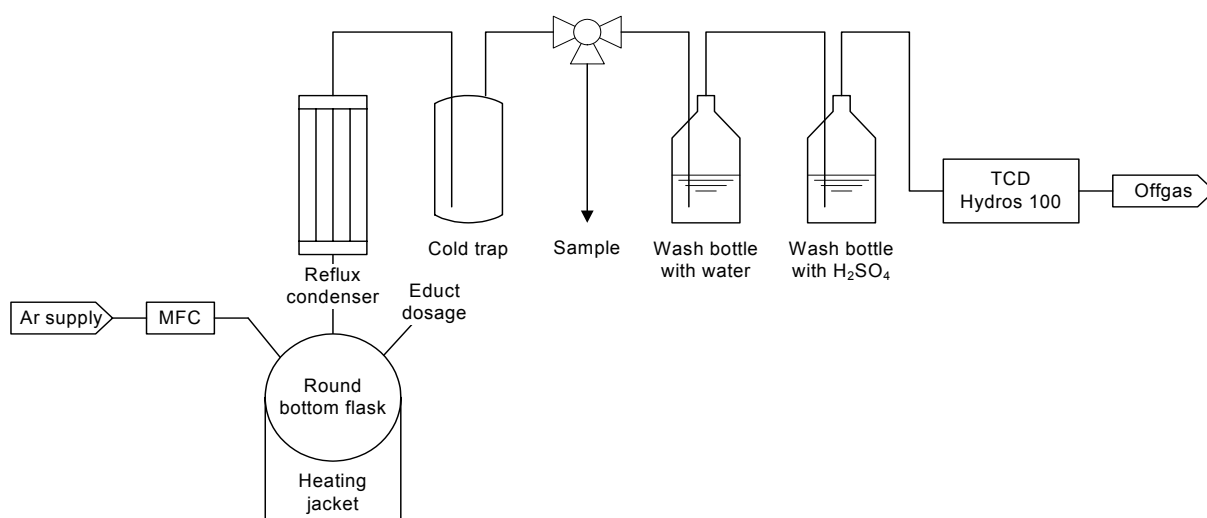


Figure S1: Schematic view of the pressure-less glass reactor set-up as used for the hydrogen production experiments of this work.

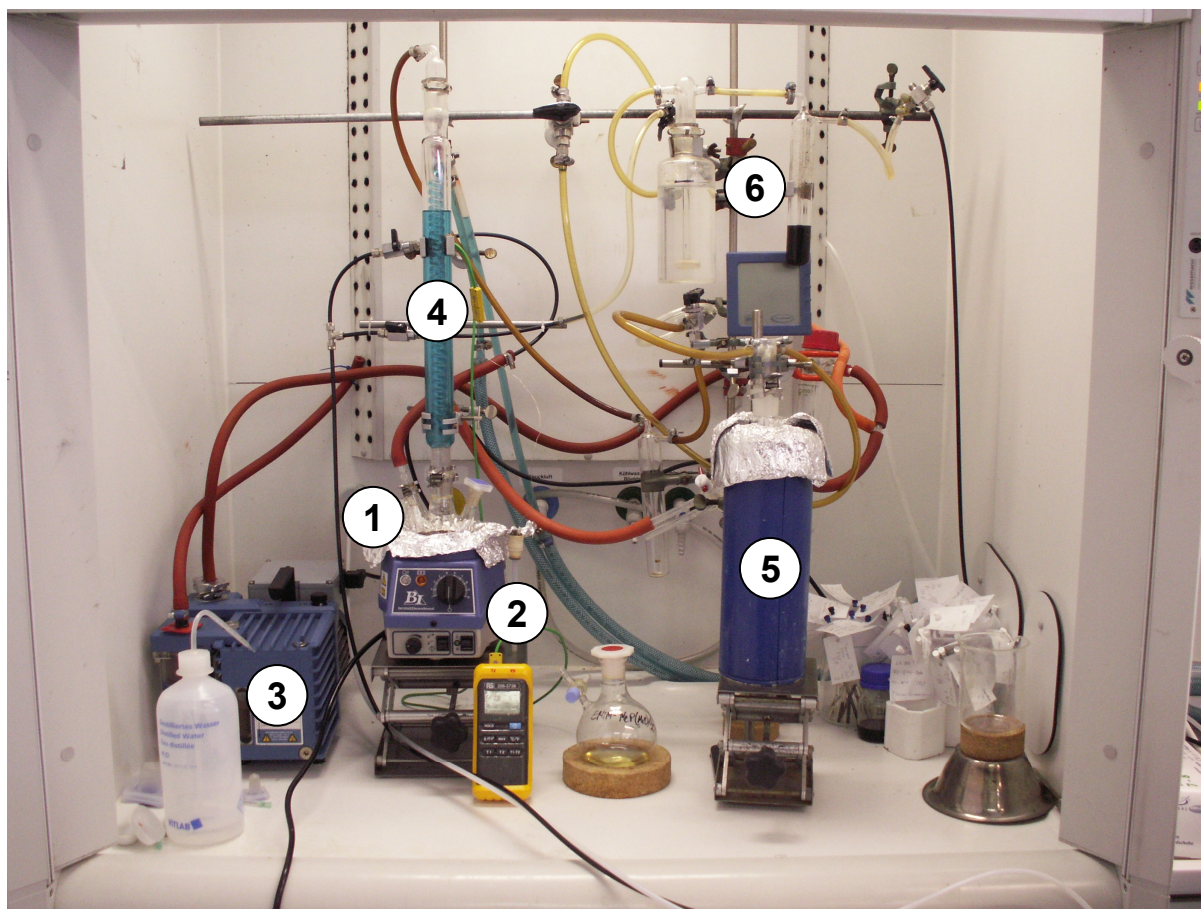


Figure S2: Photograph of the pressure-less glass reactor set-up as used for the hydrogen production experiments of this work.

Detailed description of a typical hydrogen production experiment:

The hydrogen production experiments were carried out in a three-neck round bottom flask (1) heated and stirred by an electrical heating jacket (2). Temperature was checked and adjusted manually using a Pt 100 thermocouple. Before start-up, the system was evacuated by a vacuum pump (3) and purged three times with argon. To ensure proper hydrogen analysis, the reaction system was swept permanently by an argon inert gas stream of 200 mL/min, controlled by a BRONKHORST mass flow controller (MFC). Attached to the flask, a reflux condenser (4) cooled to 1°C provided trapping of volatile products. A cold trap (5) using ethanol and liquid nitrogen as cooling media was used to freeze out further low boilers in the gas flow. To eliminate organic volatiles with detrimental effects on the hydrogen analysis, two washing bottles (6) filled with water and sulphuric acid were used. The following hydrogen analysis was performed by a thermal conductivity detector (TCD) EMERSON Hydros 100. The measured volume fraction of hydrogen in the off-gas was logged by a personal computer in an interval of five seconds.