CLAIMS

1. (previously presented)

Hydrogen generator (1) comprising a container (2) for containing an aqueous solution of at least one metal hydride, a reaction chamber (7) containing a catalyst (10), a pump (5) for pumping the aqueous solution from the container to the reactor chamber, a first liquid collecting area (30) communicating with the reactor chamber for collecting the reaction exhaust products (31), an exhaust products outlet (32) exiting from the collecting area and a gas outlet (13) for extracting the gaseous products, characterized in that the exhaust products outlet opens to the environment via a controllable valve (37).

~~2.~~ (cancelled)

~~Hydrogen generator (1) comprising a container (2) for containing a liquid reaction agent, a reaction chamber (7) containing at least one metal hydride in solid form (52), a pump (5) for pumping the liquid reaction agent from the container to the reaction chamber, a first liquid collecting area (30) communicating with the reactor chamber for collecting the reaction exhaust products (31), an exhaust products outlet (32) exiting from the collecting area and a gas outlet (13) for extracting the gaseous products, characterized in that the exhaust products outlet opens to the environment via a controllable valve (37).~~

~~3.~~ 2. (previously presented)

The generator according to claim 1 ~~or 2~~, characterized in that the reaction chamber (7) contains temperature (28) and pressure sensors (27).

~~4.~~ 3. (previously presented)

The generator according to claim ~~3~~ 2, characterized in that the reaction chamber (7) is coupled to temperature adjusting devices (11, 12).

~~5.~~ 4. (previously presented)

The generator according to claim ~~4~~ 3, characterized in that the sensors (27, 28) are connected to a control unit (29) controlling the pump (5) and the temperature adjusting devices (11, 12).

~~6.~~ 5. (previously presented)

The generator according to any of claims 1 to ~~5~~ 4, characterized in that the first liquid collecting area (30) contains first liquid level sensors (39, 40) coupled to a control unit (29) controlling the controllable valve (37).

~~7.~~ 6. (previously presented)

The generator according to any of claims 1 to ~~6~~ 5, characterized in that a conduit (36) extending from the exhaust products outlet (32) via the controllable valve (37) to a conduit end (38) carries heating devices at least along part of its length.

~~8.~~ 7. (previously presented)

The generator according to any of claims 1 to ~~7~~ 6 characterized in that the gas outlet (13) is coupled via a cooling device (14) to a gas/ liquid separator (19) containing a second liquid collecting area (45) including second liquid level sensors (47, 48), to said area a discharging conduit (46) is connected which leads via a controllable valve (37) alternatively to the environment or to a point upstream of the pump (5).

~~9.~~ 8. (previously presented)

The generator according to any of claims 1 to ~~8~~ 7, characterized in that the exhaust products outlet (32) opens via a controllable valve (37) to a container open to atmosphere that accumulates the reaction exhaust products (31).

~~10.~~ 9. (previously presented)

A method of operating the hydrogen generator according to claim ~~5~~ 4 or any of claims ~~6~~ 5 to ~~9~~ 8 if referred to claim ~~5~~ 4, characterized in that the reaction in the reaction chamber (7) is carried out at a temperature, the minimum temperature being defined by a curve (60) connecting the points of the following table:

Temperature (°C)	70	85	100	115
Pressure (kPa)	100	300	800	1200

~~11.~~ 10. (previously presented)

The method of claim ~~10~~ 9 ~~if referred to claim 1~~, characterized in that when using a 25% sodium borohydride ($NaBH_4$) solution in water (H_2O) the pressure in the reaction chamber (7) is controlled by the pump (5) dependent on the maximum temperature according to a curve (61) connecting the points of the following table:

Temperature (°C)	85	100	115	130
Pressure (kPa)	300	550	800	1050

~~12.~~ 11. (previously presented)

The method of claim ~~10~~ 9 ~~if referred to claim 1~~, characterized in that when using a 20% sodium borohydride ($NaBH_4$) solution in water (H_2O) the pressure in the reaction chamber (7) is controlled by the pump (5) dependent on the maximum temperature according to a curve (62) connecting the points of the following table:

Temperature (°C)	70	85	100	115	130
Pressure (kPa)	100	150	230	350	500

~~13.~~ 12. (previously presented)

A method of operating the hydrogen generator according to claim ~~6~~ 5 or according to any of claims ~~7~~ 6 to ~~12~~ 11 if referred to claim ~~6~~ 5, characterized in that the controllable valve (37) connected to the exhaust products outlet (32) of the first liquid collecting area (30) opens and closes in intervals controlled by the first liquid level sensors (39, 40).

~~14.~~ 13. (previously presented)

A method of operating the hydrogen generator according to claim ~~8~~ 7 or according to any of claims ~~9~~ 8 to ~~13~~ 12 if referred to claim 8, characterized in that the controllable valve (37) connected to the discharging conduit (46) outlet of the second liquid collecting area (45) opens and closes in intervals controlled by the second liquid level sensors (47, 48).