CLAIMS

1. 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), and
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.

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

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

4. The generator according to claim 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).

5. The generator according to any of claims 1 to 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).

6. The generator according to any of claims 1 to 5, 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 the controllable valve (37) alternatively

to the environment or to a point upstream of the pump (5).

7. The generator according to any of claims 1 to 6, characterized in that the exhaust products outlet (32) opens via the controllable valve (37) to a container open to atmosphere that accumulates the reaction exhaust products (31).

8. A method of operating the hydrogen generator according to claim 4 or any of claims 5 to 7 if referred to claim 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

9. A method of operating the hydrogen generator according to claim 5 or according to any of claims 6 to 8 if referred to claim 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).

10. A method of operating the hydrogen generator according to claim 6 or according to any of claims 7 to 9 if referred to claim 7, 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).