CLAIMS

1.

Reactor for production of silicon, comprising a reactor volume, c h a r a c t e r i s e d i n that the reactor comprises or is operatively arranged to at least one ~~means~~ motor for setting a silicon-containing reaction gas for chemical vapor deposition (CVD) into rotation inside the reactor volume, the reactor comprising an outlet for silicon-poor gas arranged coaxially to the cylinder axis in at least one end, at least one inlet for silicon rich reaction gas, at least one heating device operatively arranged on the outside or on the inside of the reactor, with or without inert gas and/or cooling gas protection.

2.

Reactor according to claim 1 c h a r a c t e r i s e d i n that the reactor volume is made of silicon or has an inner silicon layer so that a silicon surface forms the inner surface against at least a part of the reactor volume.

3.

Reactor according to claim 1 and/or 2, characterized in that the reactor comprises a shape as a cylinder with a circular or in substance circular cross-section, the cylinder is vertically orientated the sidewalls are made of silicon of metallurgical quality or purer, and one or more inlets are angularly arranged in a bottom, so that silicon-containing gas is guided in a helical path upwardly along the wall towards an outlet in the top of the reactor, wherein the orientation of the inlet and the gas contains a direction component parallel to the cylinder axis and a direction component parallel to the circumference of the inner cylindrical wall.

4.

Reactor according to one of claim 1-3, characterized in that the reactor comprises or is operatively arranged to a heating device outside the reactor.

~~5.~~

~~Reactor according to claim 1, characterized in that the reactor comprises a shape as a cylinder with a circular inner cross-section, a motor for rotating the reactor operatively connected to the reactor, a outlet for silicon-poor gas arranged coaxially to the cylinder axis in at least one end, at least one inlet for silicon rich reaction gas, at least one heating device operatively arranged on the outside or on the inside of the reactor, with or without inert gas and/or cooling gas protection.~~

~~6.~~5.

Reactor according to claim 1, characterized in that a motor is operatively connected to the reactor for rotating said reactor, the reactor comprising at least one end plate rotating with the reactor, which end plate is equipped with at least one but preferably several inlets for silicon-containing reaction gas and the end plates are preferably made of a material having lower thermal conductivity than the rest of the reactor, such as a composite construction of materials of different thermal conductivity in order to avoid deposition in the inlets as well as minimizing thermal losses.

~~7.~~6.

Method for production of silicon by vapor deposition and/or cleaning of a silicon containing gas, in a reactor according to ~~the invention~~ any one of claims 1-5, characterised by setting a silicon-containing reaction gas for chemical vapor deposition (CVD) into rotation inside the reactor volume, by operating at least one ~~means~~ motor for achieving such rotation.

~~8.~~7.

Method according to claim ~~7~~ 6, characterized in that silicon deliberately is deposited onto the reactor wall by chemical vapor deposition in such a way that the cross-section of the reactor principally grows tight, whereupon the contents of said reactor or the contents of said reactor as well as the reactor wall is utilized in further stages in a process for production of silicon for solar cell and/or electronic purposes.

~~9.~~8.

Use of a reactor according to any one of claims ~~1-6~~ 1-5, for producing silicon and/or cleaning silicon containing reaction gas supplied from other reactors according to the claims ~~1-6~~ 1-5 or other types of CVD reactors, or the gas is originating from other sources.

~~10.~~9.

Reactor according to claim 1, characterised in that the wall of the reactor is made of any material withstanding the operating conditions, preferably a low-contaminating material such as quartz, silicon-nitride or graphite.