WHAT IS CLAIMED IS:

1. A reaction chamber of a semiconductor process device, applied to a plasma enhanced atomic layer deposition process, comprising: ~~a chamber body,~~ a monitoring module, a deposition module, and a control module connected to the monitoring module; wherein,

the deposition module is configured to execute multiple deposition steps within a deposition period ~~in the chamber body~~, each of the multiple deposition steps comprising: introducing a precursor into the reaction chamber and applying a radio frequency electric field to the reaction chamber so as to form a plasma light source in the reaction chamber, and depositing a target film layer on a work piece to be processed through the plasma light source;

the monitoring module is ~~connected with the chamber body, and~~ configured to monitor brightness of ~~a~~ the plasma light source ~~generated~~ in the reaction chamber ~~body~~ when the deposition module executes each deposition step, and generate a first signal according to the brightness of the plasma light source; and

the control module is ~~connected with the monitoring module, and~~ configured to judge whether a thickness of ~~a~~ the target film layer ~~obtained after executing the multiple deposition steps~~deposited through the deposition module is abnormal according to the first signal ~~corresponding~~ generated ~~to~~ in at least one of the deposition steps, and if yes, ~~execute an abnormality processing flow~~send an abnormality alerting signal, thereby performing a compensation operation.

2. The reaction chamber according to claim 1, wherein the ~~abnormality processing flow comprises:~~

~~sending, by the~~ control module~~, an abnormality alerting signal; and/or,~~ is further configured to, when it is judged that the thickness of the target film layer is abnormal, control~~ling~~ the deposition module to complementally execute at least one of the deposition steps.

3. The reaction chamber according to claim 1 ~~or 2~~, wherein the control module is configured to:

judge whether a plasma ignition abnormality occurs ~~in the deposition step~~when the radio frequency electric field is applied by the deposition module, according to the first signal generated ~~corresponding to~~in at least one of the deposition steps, and if yes, determine that the thickness of the target film layer is abnormal~~, and execute the abnormality processing flow~~.

4. The reaction chamber according to claim 3, wherein the monitoring module comprises a photoresistor or a photosensitive diode, and the first signal is a voltage signal negatively

correlated with the brightness of the plasma light source in the reaction chamber.

45. The reaction chamber according to claim 34, wherein the control module comprises: a processing submodule and a control submodule, and the monitoring module and the control submodule are both connected with the processing submodule; wherein,

the processing submodule is configured to judge whether the first signal corresponding to each deposition step exceeds a preset range, and if yes, generate a second signal corresponding to that deposition step; and

the control submodule is configured to count the number of times of generating, by the processing submodule, the second signal within the deposition period, and when the number of times of generating, by the processing submodule, the second signal within the deposition period is greater than 0, determine that the plasma ignition abnormality occurs when the radio frequency electric field is appliedthe thickness of the target film layer is abnormal, and execute the abnormality processing flow.

56. The reaction chamber according to claim 45, wherein the abnormality processing flow comprises:the deposition module is connected with the control submodule,

controlling, by the control submodule, is further configured to control the deposition module to complementally execute at least one of the deposition steps according to the number of times of generating, by the processing submodule, the second signal within the deposition period, when the number of times of generating, by the processing submodule, the second signal within the deposition period is greater than 0.

67. The reaction chamber according to claim 56, wherein the number of times of complementally executing, by the deposition module, the deposition step is the same as the number of times of generating, by the processing submodule, the second signal within the deposition period.

7. The reaction chamber according to claim 1, wherein the monitoring module comprises a photoresistor or a photosensitive diode, and the first signal is a voltage signal negatively correlated with the brightness of the plasma light source.

8. The reaction chamber according to claim 1, wherein a monitoring opening is formed in a side wall of the reaction chamber body, the monitoring module is located outside the reaction chamber body, and the monitoring module monitors the brightness of the plasma light source in the reaction chamber body through the monitoring opening.

9. The reaction chamber according to claim 1, 7 or 8, wherein at least one of the monitoring

~~module and the control module is integrated on a printed circuit board, and the printed circuit board is arranged on the chamber body, and is located outside the chamber body; and~~

~~the reaction chamber further comprises a protective shell, and the protective shell is arranged on a periphery of the printed circuit board in a covering mode, and configured to separate the printed circuit board from the outside; and a port used for transmitting a signal is formed in the protective shell~~a support base for bearing the work piece to be processed is arranged in the reaction chamber, the deposition module comprises an upper electrode arranged at a top of the reaction chamber and a lower electrode arranged in the support base, the upper electrode and the lower electrode are configured to apply the radio frequency electric field in response to a driving signal, and the monitoring opening is located between the lower electrode and the upper electrode.

10. A semiconductor process device, comprising the reaction chamber according to any one of claims 1-9~~, wherein a deposition module comprises an air inlet apparatus and an upper electrode apparatus, and a support base used for bearing a wafer is arranged in a chamber body; the air inlet apparatus is configured to introduce a precursor into the chamber body; and the upper electrode apparatus is configured to motivate the precursor to form plasma~~.

~~11. The semiconductor process device according to claim 10, wherein the semiconductor process device is applied to a plasma enhanced atomic layer deposition device.~~

~~12~~11. A film layer deposition method, applied to the reaction chamber of the semiconductor process device according to any one of claims 1-9, and comprising:

executing~~, by a deposition module,~~ multiple deposition steps within a deposition period, each of the multiple deposition steps comprising: introducing a precursor into the reaction chamber and applying a radio frequency electric field to the reaction chamber so as to form a plasma light source in the reaction chamber, and depositing a target film layer on a work piece to be processed through the plasma light source~~in a chamber body~~;

when each deposition step is executed, monitoring~~, when the deposition module executes each deposition step,~~ brightness of ~~a~~ the plasma light source ~~generated~~ in the reaction chamber ~~body~~, and generating a first signal according to the brightness of the plasma light source; and

judging, according to the first signal ~~corresponding to~~ generated in at least one of the deposition steps, whether a thickness of ~~a~~ the deposited target film layer ~~obtained after executing the multiple deposition steps~~ is abnormal, and if yes, sending an abnormality alerting signal~~executing an abnormality processing flow~~.

~~13~~12. The film layer deposition method according to claim ~~12~~11, ~~wherein the abnormality processing flows comprises~~further comprising:

~~sending an abnormality alerting signal; and/or, controlling the reaction chamber to~~ complementally executinge at least one of the deposition steps when the thickness of the target film layer is abnormal.