

Independent Claim 27

27. A method of etching a substrate in the manufacture of a device, the method comprising:

heating a substrate holder to a first substrate holder temperature with a heat transfer device, the substrate holder having at least one temperature sensing unit, placing a substrate having a film thereon on the substrate holder in a chamber;

etching a first portion of the film at a selected first substrate temperature; and

etching a second portion of the film at a selected second substrate temperature, the selected second substrate temperature being different from the selected first substrate temperature;

wherein substrate temperature is changed from the selected first substrate temperature to the selected second substrate temperature, using a measured substrate temperature, within a preselected time interval for processing, and at least the first substrate temperature or the second substrate temperature, in single or in combination, is above room temperature.

Independent Claim 37

37. A method of processing a substrate during the manufacture of a device, the method comprising:

placing a substrate having a film thereon on a substrate holder within a chamber of a plasma discharge apparatus, the plasma discharge apparatus comprising: a substrate temperature control system comprising a substrate temperature sensor and a substrate temperature control circuit operable to adjust the substrate temperature to a predetermined substrate temperature value with a first heat transfer process; and a substrate holder temperature control system comprising a substrate holder temperature sensor and a substrate holder temperature control circuit operable to adjust the substrate holder temperature to a predetermined substrate holder temperature value with a second heat transfer process;

performing a first film treatment of a first portion of the film at a selected first substrate temperature;

with the substrate temperature control circuit, changing from the selected first substrate temperature to a selected second substrate temperature, the selected second substrate temperature being different from the selected first substrate temperature; and

performing a second film treatment of a second portion of the film at the selected second substrate temperature;

wherein the substrate holder is heated above room temperature during at least one of the first or the second film treatments, and the substrate temperature control circuit is operable to change the substrate temperature from the selected first substrate temperature to the selected second substrate temperature within a preselected

Independent Claim 51

51. A method of processing a substrate in the manufacture of a device, the method comprising:

placing a substrate having a film thereon on a substrate holder in a processing chamber; the processing chamber comprising the substrate holder, a substrate control circuit operable to adjust the substrate temperature, a substrate holder temperature sensor, and a substrate holder control circuit operable to maintain the substrate holder temperature;

performing a first etching of a first portion of the film at a selected first substrate temperature;

performing a second etching of a second portion of the film at a selected second substrate temperature, the second temperature being different from the first temperature;

wherein at least one of the film portions is etched while heat is being transferred to the substrate holder with the substrate holder control circuit; and

the substrate temperature control circuit effectuates the change from the first substrate temperature to the second substrate temperature within a preselected time period.

Independent Claim 56

56. A method for processing layers which are included in a stack of layers positioned on a substrate, the method comprising:

placing the substrate on a substrate holder;

sensing a substrate holder temperature,

etching at least a portion of a first silicon-containing

layer in a chamber while the substrate is maintained at a selected first substrate temperature; and

etching at least a portion of a second silicon-containing layer in the chamber while the substrate is maintained at a selected second substrate temperature;

wherein the substrate holder is heated to a temperature operable to maintain at least one of the selected first and the selected second substrate temperatures above 49° C., and the substrate temperature is changed from the first substrate temperature to the second substrate temperature with a control circuit operable to effectuate the changing within a preselected time period that is less than the overall process time associated with the etching the first silicon-containing layer and the second silicon-containing layer.

Independent Claim 60

60. A method for manufacturing a device comprising an integrated circuit, the method comprising:

- transferring a substrate comprising a stack of layers including a silicide layer into a chamber, the chamber comprising a substrate holder;
- sensing the substrate holder temperature;
- heating the substrate holder with a substrate holder control circuit and a heating device to maintain the substrate holder at a temperature that is operable to effectuate a substrate temperature above room temperature while processing the substrate;
- processing the substrate on the substrate holder at a first substrate temperature; and
- processing the substrate on the substrate holder at a second substrate temperature to etch at least a portion of the silicide layer;

wherein the first substrate temperature is different from the second substrate temperature and the first substrate temperature is changed to the second substrate temperature with a substrate temperature control circuit within a preselected time to etch the silicide layer.

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