CLAIMS

1. A consumable part for use inside a chamber where plasma is used to process a semiconductor substrate, the consumable part comprising:

a body having a surface configured to be exposed to the plasma during processing in the chamber; and

a trigger feature integrated within the body, the trigger feature including a void that is disposed under the surface of the body, wherein the void is configured to become visible when the surface is eroded from exposure to the plasma over time, the void becoming visible being an identifiable feature on the surface of the body that indicates a wear level for the consumable part, the wear level being associated with an amount of processing time remaining for the consumable part and the wear level is associated to an amount of the void that is visible and present from exposure to the plasma.

2. The consumable part as recited in claim 1, wherein the consumable part is associated with the amount of processing time remaining as correlated to a predetermined period a first time that the void having a predefined dimension is visible by an inspection scope.

3. The consumable part as recited in claim 1, wherein the trigger feature further includes a capping element that is substantially coplanar with a surface of the body, the capping element being situated above the void, the capping element being of a same material as the consumable part to avoid process shift in the chamber while processing the substrate.

4. The consumable part as recited in claim 1, wherein the consumable part further includes:

one or more additional trigger features distributed over the consumable part.

5. The consumable part as recited in claim 4, wherein the one or more additional trigger features include capping elements of different depth.

6. The consumable part as recited in claim 4, wherein the one or more additional trigger features include respective voids of different depth.

7. The consumable part as recited in claim 1, wherein a capping element above the void is of a same material as the body.

8. A system comprising:

a chamber configured for generating plasma used to process a semiconductor substrate;

a consumable part for use inside the chamber, the consumable part including a body and a trigger feature, the body having a surface configured to be exposed to the plasma during processing in the chamber, the trigger feature being integrated within the body, wherein the trigger feature includes a void that is disposed under the surface of the body, wherein the void is configured to become visible when the surface is eroded from exposure to the plasma over time;

an inspection scope for inspecting the consumable part while the consumable part is in the chamber; and

a controller configured to determine if the void is visible based on information obtained by the inspection scope, the void becoming visible being an identifiable feature on the surface of the body that indicates a wear level for the consumable part, the wear level being associated with an amount of processing time remaining for the consumable part and the wear level is correlated to an amount that the void is visible to the inspection scope as the surface is eroded from exposure to the plasma over time, wherein a size of the void is configured to avoid process shift in the chamber when the void is exposed to the plasma after the surface is eroded.

9. The system as recited in claim 8, wherein the inspection scope is configured to inspect the consumable part utilizing one or more of images of the visible spectrum, infrared images, sound waves, ultrasound waves, and radiofrequency waves.

10. The system as recited in claim 8, wherein a depth of the trigger feature is about one half of a width of the body.

11. The system as recited in claim 8, wherein a depth of the trigger feature is in a range from 10% to 99% of a vertical width of the body.

12. The system as recited in claim 8, wherein a shape of the void is cylindrical.

13. The system as recited in claim 8, wherein a shape of the void is of a truncated cone.

14. The system as recited in claim 8, wherein the trigger feature further includes a capping element that is coplanar with a surface of the body, the capping element being situated above the void, wherein the capping element includes a protrusion ring configured to fit in a corresponding indention of the body.

15. A method for detecting wear on a consumable part, the method comprising:

placing the consumable part in a chamber for semiconductor manufacturing, wherein the consumable part includes a body and a trigger feature, the body having a surface configured to be exposed to plasma during processing in the chamber, the trigger feature integrated within the body, wherein the trigger feature includes a void that is disposed under the surface of the body, wherein the void is configured to become visible when the surface is eroded from exposure to the plasma over time, the void becoming visible being an identifiable feature on the surface of the body that indicates a wear level for the consumable part;

inserting an inspection scope in the chamber;

analyzing information obtained by the inspection scope to determine if the void is visible; and

determining an amount of time left before replacing the consumable part in the chamber when the void is visible and the wear level is correlated to an amount that the

void is visible using the inspection scope as the surface is eroded from exposure to the plasma over time.

16. The method as recited in claim 15, wherein the trigger feature further includes a capping element that is coplanar with a surface of the body, the capping element being situated above the void, wherein the capping element is circular.

17. The method as recited in claim 15, wherein a capping element above the void has a shape of a trench running along the body.

18. The method as recited in claim 15, wherein the trigger feature further includes one or more additional caps above corresponding additional voids.

19. The method as recited in claim 15, wherein the void has a shape of an inverted cone.

20. The method as recited in claim 15, wherein operations of the method are performed by a computer program when executed by one or more processors, the computer program being embedded in a non-transitory computer-readable storage medium.