# CLAIMS

What is claimed is:

1. An apparatus comprising:

a photon emitter configured to emit photons onto a surface of an article;

a photon detector configured to receive photons scattered from surface features of the article;

mirrors configured to redirect photons reflected off the surface of the article back onto the surface of the article to recycle photons;

a mapping means for generating a map of the locations of surface features of the article based on information received from the photon detector; and

a surface feature manager configured to utilize, at least in part, the map of the surface feature locations to locate and irradiate photons onto a surface feature preselected from the mapped surface features,

wherein the photon detector is further configured to receive the irradiating photons scattered from the preselected surface feature.

2. The apparatus of Claim 1, wherein the preselected surface feature is a single surface feature of the article.

3. The apparatus of Claim 1, wherein the surface feature manager includes one or more reflective surfaces configured to controllably direct the irradiating photons to the location of the preselected surface feature.

4. The apparatus of Claim 1, wherein:

the mapping means transmits location coordinates of the preselected surface feature to the surface feature manager; and

the surface feature manager locates the preselected surface feature based on the location coordinates received from the mapping means.

5. The apparatus of Claim 1, wherein:

the photon detector is further configured to receive the irradiating photons scattered from the preselected surface feature; and

the mapping means is further configured to analyze and classify the preselected surface feature based on information received from the photon detector.

6. The apparatus of Claim 1, wherein the surface feature manager is further configured to remove the preselected surface feature.

7. The apparatus of Claim 1 further comprising a telecentric lens coupled to the photon detector.

8. The apparatus of Claim 1, wherein the photon detector comprises a complementary metal-oxide semiconductor ("CMOS"), a scientific complementary metal-oxide semiconductor ("sCMOS"), or a charge-coupled device ("CCD").

9. An apparatus comprising:

a photon emitter configured to emit photons onto a surface of an article;

a mapping means for generating a map of locations of surface features of an the article based on photon-detector signals corresponding to photons emitted from the photons emitter that are scattered from the surface features of the article, wherein the photon emitter is synchronized with a photon-detector; and

a surface feature manager configured to:

locate a predetermined surface feature of the surface features of the article based, at least in part, on the map of the surface features locations,

irradiate photons of a first power onto the location of the predetermined surface feature to analyze the predetermined surface feature, and

irradiate photons of a second power onto the location of the predetermined surface feature to remove the predetermined surface feature.

10. The apparatus of Claim 9, wherein the first and second powers are different.

11. The apparatus of Claim 9, wherein the surface feature manager includes one or more reflective surfaces configured to controllably direct the irradiating photons to the location of the preselected surface feature.

12. The apparatus of Claim 9, wherein:

the mapping means transmits location coordinates of the preselected surface feature to the surface feature manager; and

the surface feature manager locates the preselected surface feature based on the location coordinates received from the mapping means.

13. The apparatus of Claim 9 further comprising ~~a~~ the photon detector configured to receive photons emitted from the photon emitter that are scattered from surface features of the article and transmit photon-detector signals to the mapping means.

14. An apparatus comprising:

a photon emitter configured to emit photons onto a surface of an article;

a processing means configured to~~:~~ select, for removal, a surface feature from a surface features map of surface features of an article, wherein the surface features map includes location coordinates of the surface features of the article based on photon-detector signals corresponding to photons scattered from the surface features,~~;~~ and wherein the processing means is further configured to determine chemical characterization associated with the surface features; and

a surface feature manager configured to:

locate ~~the~~ a selected surface feature based on the location coordinates of the selected surface feature received from the processing means, ~~and~~

irradiate photons onto a location of the selected surface feature to analyze the selected surface feature, and

irradiate photons onto the selected surface feature to remove the selected surface feature from the article.

15. The apparatus of Claim 14, wherein the surface feature manager includes one or more reflective surfaces configured to controllably direct the irradiating photons to the location of the preselected surface feature.

16. The apparatus of Claim 14, wherein the surface feature manager is further configured to irradiate photons onto the location of the selected surface feature to analyze the selected surface feature prior to irradiating photons to remove the selected surface feature.

17. The apparatus of Claim ~~16~~14, wherein:

the surface feature manager is further configured to irradiate photons of a first power onto the location of the selected surface feature to analyze the selected surface feature; and

the surface feature manager is further configured to irradiate~~s~~ photons of a second power to remove the selected surface feature.

18. The apparatus of Claim 17, wherein the first and second powers are different.

19. The apparatus of Claim 14 further comprising a photon detector configured to receive photons scattered from surface features of the article and transmit photon-detector signals to the processing means.

20. The apparatus of Claim 19, wherein the photon detector comprises a complementary metal-oxide semiconductor ("CMOS"), a scientific complementary metal-oxide semiconductor ("sCMOS"), or a charge-coupled device ("CCD").