CLAIMS

1. A benchtop analytical device, comprising:

an enclosure having a lid and a body, the lid being movable, relative to the body, between an opened position and a closed position, wherein, when the lid is in the closed position, the enclosure encloses:

a probe mounted on the body of the enclosure to facilitate performing optical spectroscopy of a sample;

a sample presentation component to receive the sample for the performing of the optical spectroscopy;

an imaging component and an illumination component to illuminate and image the presentation of the sample to the probe and to enable remote viewing of the interior of the enclosure;

a processor; and

a memory storing executable instructions that, when executed by the processor, cause the benchtop analytical device to:

receive an indication that the lid of the enclosure is in the closed position;

determine that a rule is satisfied, wherein the rule relates to an operable configuration of the enclosure based on the indication that the lid of the enclosure is in the closed position;

determine that a group of rules comprising the rule and a second rule is concurrently satisfied, wherein the second rule relates to determining that the imaging component and the illumination component are configured to be switched to a non-illumination mode;

in response to determining that the group of rules is satisfied, cause emission of optical energy to perform the optical spectroscopy of the sample via the probe.

2. The benchtop analytical device of claim 1, wherein the sample presentation component comprises a sample plate to receive and support the sample within the enclosure.

3. The benchtop analytical device of claim 2, wherein:

a plate retaining area is defined in the body of the enclosure;

the probe is mounted within the plate retaining area;

the sample plate is removably disposed in the plate retaining area and has at least one of:

a sloped surface that slopes from a highest point at a periphery of the sample plate to a lowest point at a location adjacent to the probe when the sample plate is disposed on in the plate retaining area; or

a flat surface with a recessed area defined in the flat surface of the sample plate, a portion of the recessed area positioned at a location adjacent to the probe when the sample plate is disposed in the plate retaining area.

4. The benchtop analytical device of claim 3, wherein:

an aperture is defined in the sample plate at (i) the lowest point of the sloped surface or (ii) the portion of the recessed area; and

the probe is vertically oriented, pointing in an upward direction, and disposed within the aperture to interrogate the sample from underneath the sample when the sample plate is disposed in the plate retaining area and when the sample is supported on a topside of the sample plate over the aperture.

5. The benchtop analytical device of claim 4, wherein the sample plate has the sloped surface, and a tip of the probe extends above the lowest point of the sloped surface when the sample plate is disposed in the plate retaining area.

6. The benchtop analytical device of claim 3, wherein the sample plate has the flat surface and the recessed area is configured to receive the sample prior to closing the lid of the enclosure.

7. The benchtop analytical device of claim 3, wherein the sample plate is a first sample plate that is exchangeable with a second sample plate that is different from the first sample plate.

8. The benchtop analytical device of claim 3, wherein the plate retaining area has a sloped surface that slopes from a highest point at a periphery of the plate retaining area to a lowest point adjacent to the probe.

9. The benchtop analytical device of any of claims 1 to 8, further comprising the processor configured to (i) enable release of the optical energy via the probe in response to determining that the lid of the enclosure is in the closed position and (ii) to disable the releasee of the optical energy via the probe in response to determining that the lid of the enclosure is not in the closed position.

10. The benchtop analytical device of any of claims 1 to 9, wherein, when the lid of the enclosure is in the closed position, the enclosure further encloses an adjustment mechanism that is usable by an operator of the benchtop analytical device, while the lid of the enclosure is in the opened position, to adjust a position of the sample presentation component relative to the probe.

11. The benchtop analytical device of any of claims 1 to 10, wherein the performing of the optical spectroscopy of the sample includes performing Raman spectroscopy of the sample.