CLAIMS

1. An assembly for preparing a specimen for determining the presence of at least one microorganism specie in the specimen, the assembly comprising:

a pipette configured to acquire a specimen from a sample, wherein the pipette comprises an inlet, a sampling chamber, and a shaft disposed therebetween; and

an imaging cartridge configured to couple to the pipette such that the specimen is bio-contained therein,

characterized in that the imaging cartridge further comprises:

a pipette dock configured to at least partially receive the pipette shaft;

an imaging chamber configured to be in fluid communication with the pipette; and

a spreading mechanism disposed within the imaging chamber for preparing the specimen for imaging, wherein the spreading mechanism is configured to spread the specimen within the imaging chamber, the spreading mechanism being either a magnet or a ball bearing.

2. The assembly according to Claim 1, wherein the microorganism specie includes an acid-fast bacillus.

3. The assembly according to Claim 1, wherein the pipette is configured to be in fluid communication with the imaging cartridge upon depression of the sampling chamber.

4. The assembly according to Claim 1, wherein the imaging cartridge further comprises: at least one valve disposed between the imaging chamber and the pipette, the at least one valve configured to allow a specimen to flow from the pipette to the imaging cartridge when the pipette is coupled to the imaging cartridge.

5. The assembly according to Claim 1, wherein the imaging cartridge further comprises: at least one channel defined between the imaging chamber and the pipette, the channel configured to provide for fluid communication therebetween.

6. The assembly according to Claim 1, wherein the imaging catridge further comprises: a cartridge blister chamber in fluid communication with the imaging chamber, wherein the cartridge blister chamber further comprises a cartridge blister comprising at least one decolorizer reagent therein, and wherein the cartridge blister is configured to

release the at least one decolorizer reagent therein when a force is applied to the cartridge blister.

7. The assembly according to Claim 1, wherein the imaging cartridge further comprises: a wicking chamber in fluid communication with the imaging chamber, the wicking chamber configured to remove excess decolorizer reagent from the imaging chamber.

8. The assembly according to Claim 1, wherein the imaging cartridge further comprises: a porous imaging chamber cover, the porous imaging chamber cover configured to permit the specimen within the imaging chamber to dry and prevent bio-contaminants in the specimen from passing through the imaging chamber cover, and preferably, wherein the imaging chamber cover comprises a hydrophobic membrane material.

9. The assembly according to Claim 1, wherein the magnet configured to move from one end of the imaging chamber to an opposite end of the imaging chamber for spreading the specimen therein.

10. The assembly according to Claim 9, wherein the imaging cartridge further comprises: a plurality of rails disposed within the imaging chamber, wherein the rails are configured to support the magnet thereon.

11. The assembly according to claim 1 wherein the pipette comprises:
a pipette sachet is disposed within the sampling chamber, wherein the pipette sachet comprises at least one rehydrating reagent; and at least one staining reagent contained within the sampling chamber, wherein the pipette is configured to draw in a specimen through the inlet and the shaft and into the sampling chamber upon actuation of the sampling chamber.

12. The assembly according to Claim 1, wherein the at least one staining reagent is disposed on an interior surface of the sampling chamber and is a dehydrated film of material that comprises at least one of sodium hydroxide, trisodium citrate, N-acetyl-L-cysteine, and Auramine O powder.

13. The assembly according to Claim 11, wherein the pipette sachet comprises at least one rehydrating reagent configured to rehydrate the staining compound upon mixing.

14. The assembly according to claim 11, wherein the pipette sachet is configured to release the rehydrating reagent when a force is applied thereto, the force causing the pipette sachet to at least partially rupture.

15. A method of preparing a specimen for determining the presence of at least one microorganism specie in the specimen, the method comprising:
obtaining a specimen with a pipette;
coupling the pipette with a pipette dock of an imaging cartridge to create a fluid seal such that the specimen is bio-contained therein;
staining the specimen with a staining compound disposed within the pipette,
dispensing a desired amount of the stained specimen from the pipette into an imaging chamber defined in the imaging cartridge characterized by:
spreading the stained specimen within the imaging chamber by moving a spreading mechanism disposed within the imaging chamber from one end of the imaging chamber to an opposite end of the imaging chamber, the spreading mechanism being either a magnet or a ball bearing.

16. The method according to Claim 15, wherein the spreading mechanism is a magnet configured to move from one end of the imaging chamber to an opposite end of the imaging chamber for spreading the specimen therein.

17. The method according to Claim 15, further comprising drying the stained specimen within the imaging chamber.

18. The method according to Claim 17, further comprising dispensing a decolorizer reagent into the imaging chamber.

19. The method according to Claim 18, further comprising removing excess decolorizer reagent from the imaging chamber.

20. The method of Claim 15, further comprising acquiring an image of the specimen in the imaging chamber.

21. The method of Claim 15, further comprising determining whether an acid-fast bacilli is present in the specimen.

22. The assembly of any one of claims 1 to 14 or the method of any one of claims 15 to 21 wherein the imaging cartridge is coupled with the pipette via (i) a threaded connection, (ii) a snap-fit connection, (iii) a force-fit connection, (iv) a ratchet mechanism, (v) a retention washer and detent, or (vi) a "star" shaped clamping washer.