CLAIMS

1. A microscope module for a microscope arrangement for imaging a sample, the microscope arrangement comprising:

- a light source for generating an illumination beam along an illumination beam path; and
- a detector for detecting emitted light along a detection beam path;

wherein the microscope module comprises:

- a sample holder, removably arranged in the microscope arrangement and adapted for holding the sample on top of the sample holder, and having a bottom transparent to the illumination beam and light emitted from the sample;
- at least one illumination objective, located below the sample holder and arranged in the microscope arrangement to direct the illumination beam through the bottom of the sample holder; and
- at least one detection objective, located below the sample holder and arranged in the microscope arrangement to collect the light emitted from the sample through the bottom of the sample holder along the detection path;

wherein the illumination objective and the detection objective are located in an immersion medium in contact with the at least partially transparent bottom of the sample holder.

2. The microscope module according to claim 1, wherein the angle of the detection path to the illumination beam path is substantially orthogonal.

3. The microscope module according to claim 1, wherein a refractive index of the immersion medium is substantially similar to a refractive index of the at least partially transparent bottom of the sample holder.

4. The microscope module according to claim 1, wherein the at least partially transparent bottom of the sample holder is made of a membrane.

5. The microscope module according to claim 1, wherein the sample is in a culture medium.

6. The microscope module according to claim 5, wherein the culture medium has a refractive index substantially similar to that of the at least partially transparent bottom of the sample holder.

7. The microscope module for a microscope arrangement for imaging a sample, the microscope arrangement comprising:

a light source for generating an illumination beam along an illumination beam path; and

a detector for detecting emitted light along a detection beam path;

wherein the microscope module comprises:

a sample holder, removably arranged in the microscope arrangement and adapted for holding the sample on top of the sample holder, and having a bottom transparent to the illumination beam and light emitted from the sample;

at least one illumination objective, located below the sample holder and arranged in the microscope arrangement to direct the illumination beam through the bottom of the sample holder; and

at least one detection objective, located below the sample holder and arranged in the microscope arrangement to collect the light emitted from the sample through the bottom of the sample holder along the detection path,

wherein the at least partially transparent bottom of the sample holder comprises a protrusion in which the sample is held.

8. The microscope module according to claim 7 wherein the illumination beam is arranged to illuminate the sample through a bottom of the protrusion.

9. The microscope module according to claim 8 wherein the protrusion is elongated.

10. The microscope module according to claim 1, wherein the illumination beam path is arranged at substantially 30° to horizontal.

11. A method of imaging one or more samples comprising:

- placing one or more samples onto a top of a sample holder with a partially transparent bottom;
- removably arranging the sample holder above an illumination objective and a detection objective, wherein the illumination objective and the detection objective are located in an immersion medium in contact with the at least partially transparent bottom of the sample holder;
- passing light from a light source through the illumination objective;
- illuminating through the partially transparent bottom of the sample holder the one or more samples with the illumination beam;

- detecting with the detection objective emitted light from the one or more samples through the partially transparent bottom of the sample holder; and
- creating an image of the one or more samples.

12. The method according to claim 11, further comprising selecting different ones of the one or more samples.

13. A microscope module for a microscope arrangement having a light source for generating an illumination beam along an illumination beam path and a detector for detecting emitted light along a detection beam path, the microscope module comprising:

- a sample holder, removably arranged in the microscope arrangement and adapted for holding the sample on top of the sample holder, and having a bottom transparent to the illumination beam and light emitted from the sample;
- at least one illumination objective, located below the sample holder and arranged in the microscope arrangement to direct the illumination beam through the bottom of the sample holder; and
- at least one detection objective, located below the sample holder and arranged in the microscope arrangement to collect the light emitted from the sample through the bottom of the sample holder along the detection path;

wherein the illumination objective and the detection objective are located in an immersion medium in contact with the at least partially transparent bottom of the sample holder.