CLAIMS

1. An apparatus for imaging comprising:

a processor; and

a memory coupled to the processor, the memory having stored therein instructions, which when executed by the processor, cause the processor to:

process a speckle image associated with an object with a plurality of point spreading functions to retrieve, for each point spreading function of the plurality of point spreading functions, information associated with the object from the speckle image,

wherein the each point spreading function is different from another point spreading function of the plurality of point spreading functions in at least one attribute, and

wherein the information is associated with a portion of the object at least substantially corresponding to the at least one attribute associated with the each point spreading function, and

wherein, for processing the speckle image with the plurality of point spreading functions, the instructions, which when executed by the processor, cause the processor to carry out a deconvolution process between the speckle image and the plurality of point spreading functions.

2. The apparatus as claimed in claim 1, further comprising a scattering medium for generating the speckle image and the plurality of point spreading functions.

3. The apparatus as claimed in claim 1 or 2, wherein the at least one attribute comprises at least one of a spectral attribute or a spatial attribute.

4. The apparatus as claimed in claim 3, wherein the at least one attribute comprises the spectral attribute, and wherein the each point spreading function and the other point spreading function are associated with different spectral bands.

5. The apparatus as claimed in claim 4, wherein the at least one attribute comprises the spatial attribute, and wherein the each point spreading function and the other point spreading function correspond to different parts of the object.

6. A method for imaging comprising:

processing a speckle image associated with an object with a plurality of point spreading functions to retrieve, for each point spreading function of the plurality of point spreading functions, information associated with the object from the speckle image,

wherein the each point spreading function is different from another point spreading function of the plurality of point spreading functions in at least one attribute,

wherein the information is associated with a portion of the object at least substantially corresponding to the at least one attribute associated with the each point spreading function, and

wherein processing the speckle image with the plurality of point spreading functions comprises carrying out a deconvolution process between the speckle image and the plurality of point spreading functions.

7. The method as claimed in claim 6, wherein the at least one attribute comprises at least one of a spectral attribute or a spatial attribute.

8. The method as claimed in claim 7, wherein the at least one attribute comprises the spectral attribute, and wherein the each point spreading function and the other point spreading function are associated with different spectral bands.

9. The method as claimed in claim 7, wherein the at least one attribute comprises the spatial attribute, and wherein the each point spreading function and the other point spreading function correspond to different parts of the object.

10. An apparatus for imaging comprising:

a processor; and

a memory coupled to the processor, the memory having stored therein instructions, which when executed by the processor, cause the processor to:

process a speckle image associated with an object with a plurality of point spreading functions to retrieve, for each point spreading function of the plurality of point spreading functions, information associated with the object from the speckle image,

wherein the each point spreading function is different from another point spreading function of the plurality of point spreading functions in a spectral attribute, and

wherein the information is associated with a portion of the object at least substantially corresponding to the spectral attribute associated with the each point spreading function, and

wherein, for processing the speckle image with the plurality of point spreading functions, the instructions, which when executed by the processor, cause the processor to carry out a deconvolution process between the speckle image and the plurality of point spreading functions.

11. A method for imaging comprising:

processing a speckle image associated with an object with a plurality of point spreading functions to retrieve, for each point spreading function of the plurality of point spreading functions, information associated with the object from the speckle image,

wherein the each point spreading function is different from another point spreading function of the plurality of point spreading functions in a spectral attribute,

wherein the information is associated with a portion of the object at least substantially corresponding to the spectral attribute associated with the each point spreading function, and

wherein processing the speckle image with the plurality of point spreading functions comprises carrying out a deconvolution process between the speckle image and the plurality of point spreading functions.

12. An apparatus for imaging comprising:

a processor; and

a memory coupled to the processor, the memory having stored therein instructions, which when executed by the processor, cause the processor to:

process a speckle image associated with an object with a plurality of point spreading functions to retrieve, for each point spreading function of the plurality of point spreading functions, information associated with the object from the speckle image,

wherein the each point spreading function is different from another point spreading function of the plurality of point spreading functions in a spatial attribute, and

wherein the information is associated with a portion of the object at least substantially corresponding to the spatial attribute associated with the each point spreading function, and

wherein, for processing the speckle image with the plurality of point spreading functions, the instructions, which when executed by the processor, cause the processor to carry out a deconvolution process between the speckle image and the plurality of point spreading functions.

13. A method for imaging comprising:

processing a speckle image associated with an object with a plurality of point spreading functions to retrieve, for each point spreading function of the plurality of point spreading functions, information associated with the object from the speckle image,

wherein the each point spreading function is different from another point spreading function of the plurality of point spreading functions in a spatial attribute,

wherein the information is associated with a portion of the object at least substantially corresponding to the spatial attribute associated with the each point spreading function, and

wherein processing the speckle image with the plurality of point spreading functions comprises carrying out a deconvolution process between the speckle image and the plurality of point spreading functions.

14. An apparatus for imaging comprising:

a processor; and

a memory coupled to the processor, the memory having stored therein instructions, which when executed by the processor, cause the processor to:

process a speckle image associated with an object with a plurality of point spreading functions to retrieve, for each point spreading function of the plurality of point spreading functions, information associated with the object from the speckle image,

wherein the each point spreading function is different from another point spreading function of the plurality of point spreading functions in an angular attribute, and

wherein the information is associated with a portion of the object at least substantially corresponding to the angular attribute associated with the each point spreading function, and

wherein, for processing the speckle image with the plurality of point spreading functions, the instructions, which when executed by the processor, cause the processor to carry out a deconvolution process between the speckle image and the plurality of point spreading functions.

15. The apparatus as claimed in claim 14, further comprising a scattering medium for generating the speckle image and the plurality of point spreading functions.

16. The apparatus as claimed in claim 14 or 15, wherein the each point spreading function and the other point spreading function are associated with different angles relative to a point source for generating the each point spreading function and the other point spreading function.

17. A method for imaging comprising:

processing a speckle image associated with an object with a plurality of point spreading functions to retrieve, for each point spreading function of the plurality of point spreading functions, information associated with the object from the speckle image,

wherein the each point spreading function is different from another point spreading function of the plurality of point spreading functions in an angular attribute, and

wherein the information is associated with a portion of the object at least substantially corresponding to the angular attribute associated with the each point spreading function, and

wherein processing the speckle image with the plurality of point spreading functions comprises carrying out a deconvolution process between the speckle image and the plurality of point spreading functions.

18. A computer program or a computer program product comprising instructions which, when executed by a computing device, cause the computing device to carry out a method as claimed in any one of claims 6 to 9, 11, 13 and 17.