Claims

1. An otoscope device configured to be manipulated and used by a layperson, comprising:

   - a portion configured to be introduced in an ear canal of a patient's outer ear; and

   - an electronic imaging unit configured for capturing at least one image of the patient's outer ear,

   wherein the otoscope device further comprises electronic and/or optic means comprising a logic unit or a processing unit, the electronic and/or optic means configured for determining spatially resolved spectral information by evaluating a ratio of reflected radiation in the spectrum below 480nm to the reflected radiation in the spectrum above 480nm, with respect to an intensity of emitted radiation, and configured for identifying and/or locating an eardrum shown in the at least one image and locating and identifying objects within the ear canal depending on the ratio.

2. An otoscope device configured to be manipulated and used by a layperson, comprising:

   - a radiation sensing unit configured for detecting radiation reflected by a patient's outer ear;

   wherein the otoscope device further comprises electronic and/or optic means comprising a logic unit or a processing unit, the electronic and/or optic means configured for determining spectral information of reflected radiation with respect to wavelengths shorter than 480nm, configured for determining a ratio of radiation in the spectrum below 480nm to radiation in the spectrum above 480nm based on a specific intensity of reflected radiation within the spectrum of blue light and/or UV radiation, and configured for identifying and/or locating an eardrum of the patient and locating and identifying objects within an ear canal of the patient's outer ear depending on the determined ratio of radiation in the spectrum below 480nm to radiation in the spectrum above 480nm.

3. The otoscope device according to claim 1, wherein the electronic and/or optic means are configured for determining spatially resolved spectral information with respect to specific sections of the patient’s outer ear or of the at least one image.

4. The otoscope device according to claim 1, further comprising at least one source of radiation configured for illuminating the patient's outer ear at defined intensities in defined spectral bands.

5. The otoscope device according to claim 4, wherein the at least one source of radiation is configured for emitting blue light and/or UV radiation.

6. The otoscope device according to claim 4, wherein the electronic and/or optic means are configured for adjusting a spectral composition of radiation emitted by the at least one source of radiation.

7. The otoscope device according to claim 4, wherein the electronic and/or optic means are configured for calibration of a spectral composition of radiation emitted by the at least one source of radiation, and for comparing a determined spectral composition of reflected radiation with the calibrated spectral composition of emitted radiation.

8. The otoscope device according to claim 4, wherein the electronic and/or optic means are configured for adjusting the intensity of radiation of the at least one source of radiation, configured for reducing the intensity of radiation in case the at least one image exhibits a spectral composition which is outside a specific amount of spectral components having wavelengths longer than 480nm, or blue spectral components to red spectral components falls below a specific minimum level or rises above a specific maximum level.

9. The otoscope device according to claim 1, comprising at least one combined or two or more separate sources of radiation, said sources of radiation emitting radiation in the spectrum below 480nm, and said sources of radiation emitting radiation in the spectrum above 480nm, wherein said sources of radiation are connected to the electronic and/or optic means.

10. The otoscope device according to claim 1, comprising at least one source of radiation, said at least one source of radiation being configured for emitting the entire visible light spectrum and/ or UV radiation.

11. The otoscope device according to claim 1, wherein the electronic and/or optic means of the otoscope device are configured for evaluating [[a]] the ratio or shift of ratios of radiation in the spectrum below 480nm to radiation in the spectrum above 480nm.

12. An otoscope device comprising a radiation sensing unit configured for detecting radiation reflected by a patient's outer ear;

wherein the otoscope device further comprises:

- at least one source of radiation, selected form the group consisting of a source of radiation emitting radiation in the spectrum below 480nm, a source of radiation emitting radiation in the spectrum above 480nm, and a source of radiation configured for electronic adjustment of the spectrum of emitted radiation; and

- electronic and/or optic means comprising a logic unit or a processing unit, connected to the at least one source of radiation and configured for determining spectral information of reflected radiation and configured for switching the at least one source of radiation and/or adjusting the spectrum of emitted radiation, the electronic and/or optic means configured for identifying and/or locating an eardrum of the patient and locating and identifying objects within an ear canal of the patient’s outer ear by evaluating a ratio of reflected radiation in the spectrum below 480nm to the reflected radiation in the spectrum above 480nm, with respect to an intensity of the emitted radiation.