Sensor apparatus, production method and detection apparatus

The invention relates to a sensor apparatus, in particular a time-of-flight (TOF) and/or CCD sensor apparatus for a 3-D camera sensor according to the preamble of claim 1, a method for producing the sensor apparatus according to the preamble of claim ~~12~~13, and a detection apparatus according to the preamble of claim ~~15~~16.

While on the one hand there is a general trend toward ever greater miniaturizations in the chip design, on the other hand many chips and optoelectronic sensor apparatuses can only be used to a very limited extent and have to be implemented in some instances in a complex manner with provision of some peripherals in cameras or other sensor devices. Difficulties can occur, in particular, because corresponding sensor devices are too large and too complex, but often the necessary robustness is also lacking with respect to the application-related requirements.

It is an object of the invention to propose a sensor apparatus and a method for producing it which enables improved integration into application-based sensor devices or detection apparatuses.

Proceeding from a sensor apparatus and a method for producing it and a detection apparatus of the type mentioned in the introduction, the object is achieved by means of the characterizing features of claim 1, of claim ~~12~~ 13 and of claim ~~15~~16.

14. Method according to ~~any of the preceding claims~~Claim 13, wherein at least one part of the method comprises a 200 nm CMOS manufacturing method.

15. Method according to Claims 13 or 14, wherein subnominal gaps and/or subnominal lines of the sensor apparatus are produced by means of a bi-subnominal etching method.

16. Detection apparatus, in particular a monitoring apparatus for monitoring the movement of a movement element against undesired collisions with an object, wherein a sensor apparatus according to any of Claims 1 to 12 is provided for detecting the object.