Method for calibrating a quantum sensor, and quantum sensor

Abstract

The invention relates to a method for calibrating a quantum sensor, in particular a magnetic field sensor (1), which has a crystal (2) with color centers (2a), in particular a diamond crystal with NV centers. During calibration, the quantum sensor is operated in a calibration mode which comprises the following steps: a) automatically setting a plurality of values of at least one operating parameter (P_A, P_M, MD, f_{MW}, ...) which influences the sensitivity (η_B) of the quantum sensor, b) automatically determining a measure of the sensitivity (η_B) of the quantum sensor for the plurality of values of the at least one operating parameter (P_A, P_M, MD, f_{MW}, ...), and c) automatically selecting a value ($P_{A,OPT}$, $P_{M,OPT}$, ...) of the at least one operating parameter (P_A, P_M, ...) that is optimal for the sensitivity (η_B) of the quantum sensor. The invention also relates to a quantum sensor, in particular a magnetic field sensor (1), which has a calibration device (12) designed to carry out the method.

Fig. 1