CLAIMS

1. A sensor for determining a property of a magnetic field, the sensor comprising:

a substrate;

a beam suspended from the substrate; and

a plurality of conductive lines arranged on the beam, wherein the plurality of conductive lines are arranged at least substantially parallel to a longitudinal axis of the beam,

wherein the beam is adapted to be displaced in response to a current flowing through the plurality of conductive lines, and a magnetic field interacting with the beam, and

wherein the sensor is configured to determine athe property of the magnetic field based on the displacement of the beam.

2. The sensor as claimed in claim 1, wherein the plurality of conductive lines are arranged to conduct the current in the same direction.

3. The sensor as claimed in claim 1, wherein the plurality of conductive lines are arranged to conduct the current in series.

4. The sensor as claimed in claim 1, wherein the plurality of conductive lines are arranged at least substantially parallel to each other on the beam.

5. The sensor as claimed in claim 1, wherein the plurality of conductive lines forms part of a single line arrangement.

6. The sensor as claimed in claim 1, wherein the substrate comprises a first edge portion and a second edge portion, the first edge portion and the second edge portion arranged adjacent opposite sides of the beam, and wherein the plurality of conductive lines forms part of a continuous line arrangement wound around the beam, the first edge portion and the second edge portion.

17. The sensor as claimed in claim 16, wherein the metal is selected from the group consisting of aluminium, gold, copper, nickel, platinum, and titanium.

18. A method of controlling a sensor, the method comprising:

positioning a sensor in a magnetic field;

applying a current to a plurality of conductive lines arranged on a beam of the sensor, wherein the plurality of conductive lines are arranged at least substantially parallel to a longitudinal axis of the beam, wherein the beam ~~being~~ is suspended from a substrate of the sensor, and wherein the beam is displaced in response to the current flowing through the plurality of conductive lines, and the magnetic field interacting with the beam; and

determining a property of the magnetic field based on the displacement of the beam.

19. The method as claimed in claim 18, wherein applying a current to a plurality of conductive lines comprises applying a current having a frequency that is at least substantially equal to a resonant frequency of the beam.

20. The method as claimed in claim 18, wherein applying a current to a plurality of conductive lines comprises applying a current to flow through the plurality of conductive lines in the same direction.

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1. A sensor for determining a property of a magnetic field, the sensor comprising:

a substrate;

a beam suspended from the substrate; and

a plurality of conductive lines arranged on the beam, wherein the plurality of conductive lines are arranged at least substantially parallel to a longitudinal axis of the beam,

wherein the beam is adapted to be displaced in response to a current flowing through the plurality of conductive lines, and a magnetic field interacting with the beam, and

wherein the sensor is configured to determine the property of the magnetic field based on the displacement of the beam.

2. The sensor as claimed in claim 1, wherein the plurality of conductive lines are arranged to conduct the current in the same direction.

3. The sensor as claimed in claim 1, wherein the plurality of conductive lines are arranged to conduct the current in series.

4. The sensor as claimed in claim 1, wherein the plurality of conductive lines are arranged at least substantially parallel to each other on the beam.

5. The sensor as claimed in claim 1, wherein the plurality of conductive lines forms part of a single line arrangement.

6. The sensor as claimed in claim 1, wherein the substrate comprises a first edge portion and a second edge portion, the first edge portion and the second edge portion arranged adjacent opposite sides of the beam, and wherein the plurality of conductive lines forms part of a continuous line arrangement wound around the beam, the first edge portion and the second edge portion.

17. The sensor as claimed in claim 16, wherein the metal is selected from the group consisting of aluminium, gold, copper, nickel, platinum, and titanium.

18. A method of controlling a sensor, the method comprising:

positioning a sensor in a magnetic field;

applying a current to a plurality of conductive lines arranged on a beam of the sensor, wherein the plurality of conductive lines are arranged at least substantially parallel to a longitudinal axis of the beam, wherein the beam is suspended from a substrate of the sensor, and wherein the beam is displaced in response to the current flowing through the plurality of conductive lines, and the magnetic field interacting with the beam; and

determining a property of the magnetic field based on the displacement of the beam.

19. The method as claimed in claim 18, wherein applying a current to a plurality of conductive lines comprises applying a current having a frequency that is at least substantially equal to a resonant frequency of the beam.

20. The method as claimed in claim 18, wherein applying a current to a plurality of conductive lines comprises applying a current to flow through the plurality of conductive lines in the same direction.