

lower transmitting plane **1621**. In this way, as the area of mechanical interaction increases, the amount of current flow increases significantly, thereby improving the definition of the system with respect to changes in the size of the mechanical interaction, and allowing for less intensive calculations when determining force etc.

**1.** A position detector configured to produce an output in response to a mechanical interaction, comprising

- a first electrically conductive fabric plane having electrically conductive elements incorporated therein and at least two electrical connections attached thereto,
- a second electrically conductive fabric plane displaced from said first electrically conductive plane and having electrically conductive elements incorporated therein and at least two electrical connections attached thereto,
- an insulating fabric layer disposed between said first conductive plane and said second conductive plane and configured to enable electrical conduction between said first electrically conductive plane and said second electrically conductive plane at the position of a mechanical interaction, wherein
- a mechanical interaction causes the first electrically conductive plane to be displaced towards the second electrically conductive plane;
- a voltage is applied to said first electrically conductive fabric plane to determine the position of the mechanical interaction and the resistance of the insulating fabric layer between said first and second electrically conductive planes at the position of a mechanical interaction varies depending on the area of the mechanical interaction applied.

**2.** A position detector as claimed in claim 1, wherein a first voltage is applied between said at least two electrical connections of said first electrically conductive plane to determine the positional co-ordinates of a mechanical interaction followed by the application of a second voltage between said at least two connectors of said second electrically conductive plane so as to determine additional positional co-ordinates of said mechanical interaction.

**3.** A position detector according to claims **1** or claim **2**, wherein a further electrical property selected from the group of current and resistance between said first electrically conductive plane and said second electrically conductive plane is measured.

**4.** A position detector according to claims **1** or **2**, wherein the resistance of said insulating fabric layer is configured to vary in accordance with the area of the mechanical interaction and the pressure with which the mechanical interaction is applied.

**5.** A position detector according to any of claims **1** or **2**, wherein said insulating fabric layer is constructed to facilitate measurement of area or a combination of area and pressure.

**6.** A position detector configured to produce an output in response to a mechanical interaction, comprising

- a first electrically conductive fabric plane having electrically conductive elements incorporated therein and at least two electrical connections attached thereto,

- a second electrically conductive fabric plane displaced from said first electrically conductive plane and having electrically conductive elements incorporated therein and at least two electrical connections attached thereto,

- an insulating fabric layer disposed between said first conductive plane and said second conductive plane and configured to enable electrical conduction between said first electrically conductive plane and said second electrically conductive plane at the position of a mechanical interaction, wherein

- a mechanical interaction causes the first electrically conductive plane to be displaced towards the second conductive plane;

- a voltage is applied to between said at least two connections of said first electrically conductive fabric plane to determine a first positional co-ordinate of the mechanical interaction;

- a second voltage is applied between said at least two connections of said second electrically conductive sheet to determine a second positional co-ordinate of said mechanical interaction;

- and the insulating fabric layer disposed between said first and second electrically conductive plane is configured such that the resistance between the first and second electrically conductive planes at the position of a mechanical interaction varies depending on the area of the mechanical interaction applied.

**7.** A position detector configured to produce an output in response to a mechanical interaction, comprising

- a first electrically conductive fabric plane having electrically conductive elements incorporated therein and at least two electrical connections attached thereto,

- a second electrically conductive fabric plane displaced from said first electrically conductive plane and having electrically conductive elements incorporated therein and at least two electrical connections attached thereto,

- an insulating fabric layer disposed between said first conductive plane and said second conductive plane and configured to enable electrical conduction between said first electrically conductive plane and said second electrically conductive plane at the position of a mechanical interaction, wherein

- a mechanical interaction causes the first electrically conductive plane to be displaced towards the second conductive plane;

- a voltage is applied to said first electrically conductive fabric plane to determine the position of the mechanical interaction;

- and the insulating fabric layer disposed between said first and second electrically conductive planes is configured such that the resistance between the first and second electrically conductive planes at the position of a mechanical interaction varies depending on the area and pressure of the applied mechanical interaction.

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