

a different order and/or if components in a described system, architecture, device, or circuit are combined in a different manner and/or replaced or supplemented by other components or their equivalents. Accordingly, other implementations are within the scope of the following claims.

What is claimed is:

1. A touch panel comprising:
  - a first substrate;
  - a second substrate that is spaced apart from the first substrate by a gap, the second substrate comprising a contact surface;
  - a plurality of driving electrodes that are formed on each of the first substrate and the second substrate; and
  - an electro-rheological fluid that fills the gap between the first substrate and the second substrate,
 wherein, when a driving voltage is applied between at least two opposing driving electrodes of the plurality of driving electrodes, a button area is delimited due to a variation in viscosity of a portion of the electro-rheological fluid between the at least two opposing driving electrodes, and
  - wherein, when a thickness of the gap between the first and second substrates at the button area is reduced to a value equal to or less than a threshold due to a pressing force applied to the contact surface at the button area, the driving voltage is cut off.
2. The touch panel of claim 1, wherein the button area is delimited due to an increase in viscosity of the electro-rheological fluid in an area located between the at least two opposing driving electrodes to which the driving voltage is applied.
3. The touch panel of claim 1, wherein a value of the thickness of the gap is determined based on a variation of capacitance at the gap in the button area
4. The touch panel of claim 1, wherein when the driving voltage is cut off, it is determined that an input is generated at the button area.
5. The touch panel of claim 1, wherein the gap is divided into a plurality of thickness levels, and the value of the thickness of the gap is determined based on the thickness level to which the gap is reduced.
6. A touch panel comprising:
  - a first substrate;
  - a second substrate that is spaced apart from the first substrate by a gap, the second substrate comprising a contact surface;
  - a plurality of driving electrodes including a first electrode formed on the first substrate and a second electrode formed on the second substrate and opposing the first electrode; and
  - electro-rheological fluid that fills in the gap between the first substrate and the second substrate,
  - wherein the contact surface is divided into a first area in which a viscosity of electro-rheological fluid is increased, and a second area in which a viscosity of electro-rheological fluid does not vary, according to an electric field formed by all or some of the plurality of driving electrodes, and
  - wherein the first area is delimited as a button area for inputting a signal on the user contact surface.
7. The touch panel of claim 6, wherein the button area is surrounded by the second area.
8. The touch panel of claim 6, wherein when a force exceeding a threshold value is sensed on the button area while

a driving voltage continues to be applied to the first and second driving electrodes, the driving voltage is cut off.

9. The touch panel of claim 6, wherein the button area is delimited to correspond to a button which is displayed on a display.

10. A touch panel comprising:

- a hard, transparent first substrate;
- a deformable, transparent second substrate that is spaced apart from the first substrate by a gap;
- a plurality of driving electrodes including a first electrode formed on the first substrate and a second electrode formed on the second substrate opposing the first electrode;
- a plurality of spacers arranged in a dispersed manner in the gap between the first substrate and the second substrate; and
- electro-rheological fluid fills the gap between the first substrate and the second substrate,
- wherein an area in which a viscosity of the electro-rheological fluid increases locally due to an electric field formed between the first and second electrodes is delimited as a button area.

11. The touch panel of claim 10, wherein if a force exceeding a threshold value is sensed on the button area, the driving voltage is cut off.

12. An electronic device comprising:

- a first substrate;
  - a deformable second substrate that is spaced apart from the first substrate;
  - a plurality of driving electrodes including a first electrode formed on the first substrate and a second electrode formed on the second substrate to which a driving voltage is selectively applied ; and
  - electro-rheological fluid interposed between the first substrate and the second substrate.
13. The electronic device of claim 12, wherein a button area is delimited on a contact surface of the second substrate based on a change in viscosity of the electro-rheological fluid between the first and second substrates at the button area due to the driving voltage being applied.

14. The electronic device of claim 13, wherein if a distance between the first electrode and the second electrode at the button area decreases to a value equal to or less than a threshold due to a pressure applied on the button area, the driving voltage is cut off.

15. The electronic device of claim 14, wherein the distance between the first electrode and the deformable second electrode in the button area is determined based on a capacitance between the first electrode and the deformable second electrode at the button area.

16. The electronic device of claim 14, wherein a space between the first substrate and the deformable second substrate is divided into a plurality of levels, and the distance between the first substrate and the deformable second substrate at the button area is determined based on a level that corresponds to the distance.

17. The electronic device of claim 14, wherein when the driving voltage is cut off, it is determined that an input is generated at the button area.

18. The electronic device of claim 14, wherein in the button area, a first area in which a viscosity of the electro-rheological fluid is increased due to a corresponding electric field is surrounded by a second area in which a viscosity of the electro-rheological fluid does not vary.