

**19.** The electronic device of claim **12**, wherein a button area is delimited according to driving electrodes, to which the driving voltage is applied, among the plurality of driving electrodes.

**20.** The electronic device of claim **12**, wherein the first substrate, the deformable second substrate, the plurality of driving electrodes and the electro-rheological fluid are formed of transparent materials.

**21.** A touch panel comprising:

a first substrate;

a plurality of first electrodes formed on the first substrate;

a second substrate separated from the first substrate by a gap and comprising a contact surface;

a plurality of second electrodes formed on the second substrate; and

electro-rheological fluid that fills the gap between the first substrate and the second substrate,

wherein the contact surface includes a plurality of buttons areas delimited by the first and second electrodes.

**22.** The touch panel according to claim **21**, further comprising a plurality of spacers interposed between the first substrate and the second substrate.

**23.** The touch panel according to claim **21**, further comprising a driving circuit that is electrically connected to the first electrodes and the second electrodes,

wherein the driving circuit selectively applies a voltage between the first electrodes and the second electrodes.

**24.** The touch panel of claim **22**, wherein when a force exceeding a threshold value is sensed on a button area formed by a driving voltage applied to one of the first electrodes and one of the second driving electrodes opposing the one of the second electrodes, the driving voltage is cut off.

**25.** 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 formed on the first substrate and the second substrate;

an electro-rheological fluid that is disposed in the gap between the first substrate and the second substrate; and a driving circuit that is configured to apply a driving voltage between at least two opposing driving electrodes of the plurality of driving electrodes to thereby delimit a button area due to a change in viscosity of a portion of the electro-rheological fluid between the first and second substrates at the button area, and to cut off the driving voltage applied to the at least two opposing driving electrodes 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.

**26.** The touch panel of claim **25**, wherein a value of the thickness of the gap is determined based on a variation of capacitance at the gap in the button area

**27.** The touch panel of claim **25**, wherein when the driving voltage is cut off, it is determined that an input is generated by the pressing force at the button area.

**28.** The touch panel of claim **25**, wherein the contact surface is divided into the button area in which the viscosity of electro-rheological fluid is varied according to an electric field formed between the at least two opposing driving electrodes when the driving voltage is applied by the driving circuit, and another area adjacent to the button area in which the viscosity of electro-rheological fluid does not vary.

**29.** The touch panel of claim **25**, wherein the viscosity of electro-rheological fluid is increased across all of the button area due to an electric field formed between the at least two opposing driving electrodes when the driving voltage is applied to the at least two opposing driving electrodes.

**30.** The electronic device of claim **25**, wherein the viscosity of electro-rheological fluid is increased only at edge portions of the button area due to an electric field formed between the at least two opposing driving electrodes when the driving voltage is applied to the at least two opposing driving electrode.

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