plastic film, that is, the surface to which the transparent conductive layer is laminated and the other surface, being provided with fine irregularities having a maximum height (Rmax) of 0.5 to 2.0 μm

[0015] A third aspect of the present invention is an electroluminescent display panel comprising: a first sheet having an electrode layer; and a second sheet having an electrode layer, arranged on the first sheet with a luminescent layer interposed between the first and second sheets so that the two electrode layers can face each other with the luminescent layer between them; wherein at least one of the first and second sheets is a transparent conductive film that comprises a transparent plastic film and a transparent conductive layer serving as the electrode layer, laminated to one surface of the transparent plastic film, the transparent conductive film, as a whole, having a haze value of 8 or less, at least one of the two surfaces of the transparent plastic film, that is, the surface to which the transparent conductive layer is laminated and the other surface, being provided with fine irregularities having a maximum height (Rmax) of 0.5 to 2.0 μm.

[0016] In the above-described second and third aspects of the present invention, it is preferable that the fine irregularities on the transparent conductive film have a ten-point mean roughness (Rz) of 0.35 to 1.5 μm.

[0017] A fourth aspect of the present invention is a process of producing a transparent conductive film, comprising the steps of laminating a transparent conductive layer to a surface of a transparent plastic film; interposing an ionizing-radiation-curing resin between the surface of the transparent plastic film, to which the transparent conductive layer is not laminated, and the die face of a die for providing irregularities, thereby laminating an ionizing-radiation-curing resin layer to this surface of the transparent plastic film; curing, by the application of ionizing radiation, the ionizing-radiation-curing resin layer interposed between the transparent plastic film and the die face of the die for providing irregularities, thereby adhering the ionizing-radiation-curing resin layer to the transparent plastic film; and separating, from the die for providing irregularities, the cured ionizing-radiation-curing resin layer and the transparent plastic film, the cured ionizing-radiation-curing resin layer being provided with fine irregularities that are the inverse of the irregularities of the die face of the die; wherein the irregularities of the die face of the die provide, on the exposed surface of the ionizing-radiation-curing resin layer, fine irregularities having a maximum height (Rmax) of 0.5 to 2.0 μm.

[0018] A fifth aspect of the present invention is a process of producing a transparent conductive film, comprising the steps of: interposing an ionizing-radiation-curing resin between one surface of a transparent plastic film and the die face of a die for providing irregularities, thereby laminating an ionizing-radiation-curing resin layer to this surface of the transparent plastic film; curing, by the application of ionizing radiation, the ionizing-radiation-curing resin layer interposed between the transparent plastic film and the die face of the die for providing irregularities, thereby adhering the ionizing-radiation-curing resin layer to the transparent plastic film; separating, from the die for providing irregularities, the cured ionizing-radiation-curing resin layer and the transparent plastic film, the cured ionizing-radiation-curing resin layer being provided with fine irregularities that are the inverse of the irregularities of the die face of the die; and laminating a transparent conductive layer to at least one of the two surfaces, that is, the surface of the transparent plastic film to which the ionizing-radiation-curing resin layer is not laminated and the exposed surface of the ionizing-radiation-curing resin layer; wherein the irregularities of the die face of the die provide, on the exposed surface of the ionizing-radiation-curing resin layer, fine irregularities having a maximum height (Rmax) of 0.5 to 2.0 μm.

[0019] In the above-described fourth and fifth aspects of the present invention, it is preferable that the fine irregularities that are the inverse of the irregularities of the die face of the die have a ten-point mean roughness (Rz) of 0.35 to 1.5 μm.

[0020] According to the first aspect of the present invention, while controlling the overall haze value of the transparent conductive film to 8 or less, fine irregularities having a maximum height (Rmax) of 0.5 to 2.0 μm are produced on at least one surface of the transparent plastic film, and on this or the other surface of the transparent plastic film, the transparent conductive layer is formed. Therefore, the transparent conductive film of the invention is free from those conventional problems that occur when a mat paint is applied. Moreover, the surface of the transparent plastic film on which the fine irregularities are provided has improved slipperiness, so that the transparent conductive film can be smoothly and stably produced without modifying a part of the production unit or adding any special means to the production unit. It is thus possible to provide a transparent conductive film capable of showing excellent display quality when used for a display or the like and good handling properties in the production process or the like.

[0021] In the first aspect of the present invention, if the fine irregularities are made to have a ten-point mean roughness (Rz) of 0.35 to 1.5 μm, the following advantages can be obtained in addition to the above-described effects: the surface of the transparent plastic film on which the fine irregularities are provided shows further improved slipperiness, and such troubles are effectively avoided that a screen on which the transparent conductive film is placed appears white and that an image on the screen visible through the transparent conductive film appears fuzzy.

[0022] Further, in the first aspect of the present invention, if the fine irregularities are provided as the surface structure of a transparent resin layer laminated to the surface of the transparent plastic film, they can be easily and securely provided on the surface of the transparent plastic film by using a die whose die face has irregularities suitable for providing the fine irregularities and a transparent resin.

[0023] Furthermore, in the first aspect of the present invention, by laminating a hard coat layer to the surface of the transparent plastic film to which the transparent conductive layer is not laminated, it is possible to obtain, in addition to the above-described effects, the effect of effectively enforcing the surface of the transparent plastic film opposite to the surface to which the transparent conductive layer is laminated. By providing the fine irregularities on the surface of the transparent plastic film to which the transparent conductive layer is laminated, and by making the surface of the transparent plastic film to which the hard coat layer is laminated smooth so that the exposed surface of the hard coat layer can be a mirror surface, it is possible to improve