

AMENDED CLAIMS

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[Claim 1] ~~(amended)~~

A fluorescent lamp having ceramic-glass composite electrodes, comprising a glass tube, which has a phosphor applied on an inner surface thereof and is filled with a mixture of inert gas and metal vapor, both ends of which are sealed; and hollow cylindrical electrodes provided at both ends of the glass tube,

wherein each of the hollow cylindrical electrodes has a stepped portion between a central portion thereof and an end portion thereof, and is formed of a composite of CaO-MgO-SrO-ZrO₂-TiO₂ ceramics and glass frit in an amount of 0.3~10 wt% based on a total amount of the ceramics, and

the CaO- MgO-SrO-ZrO₂- TiO₂ ceramics comprise CaO in a range of 0<CaO<1 mol, MgO in a range of 0<MgO<1 mol, SrO in a range of 0<SrO<1 mol, ZrO₂ in a range of 0<ZrO₂<1 mol, and TiO₂ in a range of 0<TiO₂<1 mol, in which CaO+MgO+SrO:ZrO₂+TiO₂ has a molar ratio of 1:1, and further comprise one or more selected from a group consisting of MnO, Al₂O₃, Cr₂O₃, and Fe₂O₃, by 3 wt% or less based on a total amount thereof.

~~[Claim 2] (cancelled)~~

~~[Claim 3] (cancelled)~~

~~[Claim 4] (cancelled)~~

~~[Claim 5] (cancelled)~~

[Claim 62] ~~(amended)~~

The fluorescent lamp according to claim 1, wherein the glass frit includes SiO₂:BaO:CaO at a molar ratio of 1:0.6:0.4.

[Claim 73] ~~(amended)~~

The fluorescent lamp according to claim 1, wherein the glass frit comprises 75 wt% of SiO₂, 18 wt% of B₂O₃, 4 wt% of Na₂O, 2 wt% of K₂O, and 1 wt% of Al₂O₃.

[claim 84] ~~(amended)~~

The fluorescent lamp according to claim 1, wherein

the ceramic-glass composite electrode has a conductive layer formed on an outer surface thereof, and the end portion thereof is connected to the glass tube using a sealing glass paste.

[Claim 95] ~~(amended)~~

The fluorescent lamp according to claim 1, wherein the stepped portion of the electrode is formed in a manner such that an inner diameter of the central portion thereof is smaller than that of the end portion thereof, to thus make the central portion thicker.

[Claim 106] ~~(amended)~~

The fluorescent lamp according to claim 1, wherein the MgO-SrO is replaced with oxide having a difference in ionic radius 15% or less compared with that of MgO-SrO.

[Claim 117] ~~(amended)~~

The fluorescent lamp according to claim 1, wherein the ceramic-glass composite electrode has no phase transition point at a temperature of not less than -30 °C.

[Claim 128] ~~(amended)~~

The fluorescent lamp according to claim 1, wherein the ceramic-glass composite electrode has polarization value higher than that of glass which has maximum polarization value of 0.031 $\mu\text{C}/\text{cm}^2$ in an electric field of 10 kV/mm, and polarization curve thereof keeps linear dependency on electric field variation.

[Claim 139] ~~(amended)~~

The fluorescent lamp according to claim 1, wherein the dielectric constant of the ceramic-glass composite electrode is higher than that of glass and stays at a constant level or decreases as the temperature rises in a range from -30 °C to 250°C.

[Claim 1410] ~~(added)~~

The fluorescent lamp according to claim 95, wherein the inner diameter of the central portion of the electrode is the same as that of the glass tube.