

Title (en)  
IMAGE DISPLAY APPARATUS AND METHOD OF FABRICATION THEREOF

Publication  
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Application  
**EP 89308020 A 19890807**

Priority  
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Abstract (en)  
[origin: EP0354750A2] An image display apparatus comprising an insulating substrate (1) having electron sources (13) controlled by X-Y matrix electrodes (10, 11) and a face plate (4) coated with a phosphor material in opposed relationship with the substrate is disclosed. An electron source at each intersection of the X-Y matrix control electrodes is made up of a plurality of cold cathodes (2) connected to an X-control electrode (10) and a plurality of gate electrodes (3) connected to a Y-control electrode (11) opposed to the cold cathodes in the same plane, and the electron source is formed on the substrate surface on other than the X- and Y-control electrodes. A voltage applied between the cold cathodes and gate electrodes arranged in opposed relations on the same surface causes a high electric field of about  $10^7$  V/cm at the forward end of the cold cathodes leading to an electron emission. A part of electrons thus emitted enters the anodes directly. Another part of electrons flow into the opposed gate electrodes to generate secondary electrons in the surface of the gate electrodes. The secondary electrons thus generated are accelerated by the positive voltage (anode voltage) applied to the phosphor surface of the opposed face plate and bombarded on the phosphor material, which is thus illuminated.

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**H01J 1/3042** (2013.01); **H01J 31/127** (2013.01)

Citation (search report)  
• [A] EP 0172089 A1 19860219 - COMMISSARIAT ENERGIE ATOMIQUE [FR]  
• [A] DISPLAYS (C.A.E TECHNICAL NOTE) January 1987, GRENOBLE, FR. pages 37-40; G.LABRUNIE et al.. "NOVEL TYPE OF EMISSIVE FLAT PANEL DISPLAY:THE MATRIXED COLD-CATHODE MICROTIP FLUORESCENT DISPLAY".

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