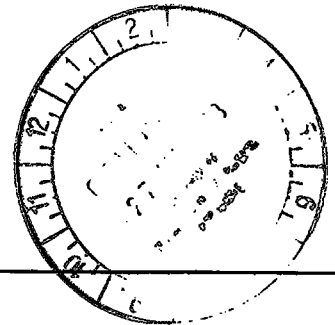


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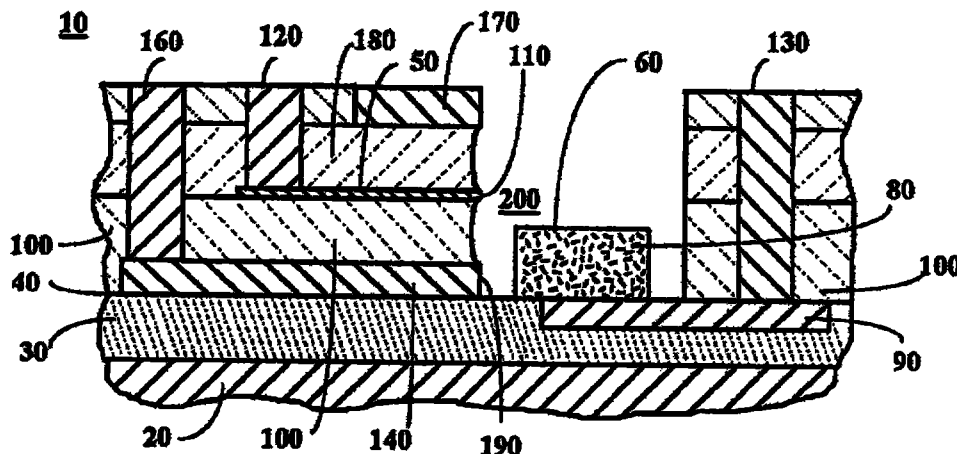
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International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H01J 1/16		A1	(11) International Publication Number: WO 96/36061
			(43) International Publication Date: 14 November 1996 (14.11.96)
(21) International Application Number: PCT/US96/06336		(81) Designated States: AU, BR, CA, CN, HU, JP, KP, KR, MX, NO, NZ, PL, RU, SG TR, UA, VN, Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).	
(22) International Filing Date: 6 May 1996 (06.05.96)			
(30) Priority Data: 08/438,023 8 May 1995 (08.05.95) US 08/438,107 8 May 1995 (08.05.95) US		Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	
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(54) Title: FIELD EMISSION DISPLAY CELL STRUCTURE AND FABRICATION PROCESS



(57) Abstract

A lateral-emitter field-emission device includes a thin-film emitter cathode (50) of thickness less than several hundred angstrom and has an edge or tip (110) with small radius of curvature. In the display cell structure, a cathodoluminescent phosphor anode (60), allowing a large portion of the phosphor anode's top surface to emit light in a desired direction. An anode contact layer contacts the phosphor anode (60) from below to form a buried anode contact (90) which does not interfere with light emission. The anode phosphor is precisely spaced apart from the cathode edge or tip and receives electrons emitted by the field emission from the edge or tip of the lateral-emitter cathode, when a small bias voltage is applied. The device may be configured as diode, triode, or tetrode, etc. having one or more control electrodes (140) and/or (170) positioned to allow control of current from the emitter to the phosphor anode by an electrical signal applied to the control electrode.