

**Fig. 1-1** Emitting image of fully sealed CNT-FED at color mode with red, green and blue phosphor columns <sup>[Choi-95-3129]</sup>.



**Fig. 1-2** Video running image of the CNT-based FED <sup>[Chung-02-4045]</sup>. The size of active area is 5 inch diagonal and operated in the gate electrode of 100 V and anode biases of 1.5 kV, respectively, which was observed with a duty ratio of 1/120 and a frequency of 100 Hz.



**Fig. 1-3** SEM images of the same VACNC prepared using 10 nm thick Ni–Fe catalyst after total growth time of: (a) 15 min, (b)–(c) 30 min, and (d)–(e) 45 min. Images (c) and (e) are close-ups of the VACNC tip from images (b) and (d), respectively. All images were taken at a tilt angle of  $\sim 45^{\circ}$  [Merkulov-01-381].



**Fig. 1-4** SEM photographs of carbon nanotips grown on Pt under (a)-280 V and (b)-150 V  $^{[Tsai-02-721]}$ .



**Fig. 1-5** Cross-sectional FESEM images of *a*-C nanotips <sup>[Huang-03-6797]</sup>. The samples were tilted forward  $5^{\circ}$  during measurement.



**Fig. 1-6** Low-magnification TEM images of CCNFs grown at  $350^{\circ}$ C (a),  $550^{\circ}$ C (b) and  $750^{\circ}$ C (c), HRTEM images of CCNFs grown at  $350^{\circ}$ C (d),  $550^{\circ}$ C (e) and  $750^{\circ}$ C (f).The insets in (f) are selected area electron diffraction taken on the longitudinal edge of a CCNFs and magnified image and inter-layer space of a CCNFs grown at  $750^{\circ}$ C [Hayashi-04-2886]



**Fig. 1-7** SEM surface morphologies of samples prepared under DC bias of -230 V. The inset in panel. The inset its top view image <sup>[Zhong-04-315]</sup>. (Substrates: Si coated with 1.5nm Fe; CH<sub>4</sub> concentration: 20%; growth time: 20 min.)

