

## Carbon Nanotube Field Emission Displays (CNT-FED) 碳奈米管場發射顯示器

CNT-FED, with their potentials for large-size, high resolution, color quality and above all, its favorable cost-down potential due to simpler structures and advantages in large-area fabrication, are an important emerging technology, especially for large screen applications including flat panel televisions. ITRI has successfully developed high-resolution, full-color screens and is presently working with leading Taiwan brand companies to produce commercial prototypes in the near future. To date, a total of 42 CNT FED-related patents have been obtained.

碳奈米管場發射顯示器利用厚膜網印製程及FED技術實現CRT平面化的可能性，保留了CRT影像品質，並具有省電及體積薄小之優點；同時結合碳奈米管的低導通電場、高發射電流密度以及高穩定性的特性，成為兼具低驅動電壓、高發光效率的大尺寸、低成本之平面顯示器；其簡單的構造與大尺寸生產具有相當的成本效益優勢，有機會成為平板顯示器未來主要市場產品 - 為大尺寸平面電視的重要先進技術。工研院擁有42項專利，並已經技術移轉國內主要生產廠商產製全彩色原型成品。

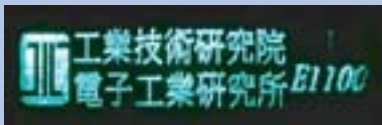
### Technology Features


- Emissive Display
- Wide View Angle
- Low Process Cost

### Applications

- Small Size: Mobile Displays
- Large Size: Outdoor Information Displays

### ITRI Achievements

	<ul style="list-style-type: none"> <li>• 4" diode monochrome</li> <li>• Resolution: 64 x 256</li> <li>• Pitch: 330 <math>\mu\text{m}</math> x 27 <math>\mu\text{m}</math></li> </ul>	<ul style="list-style-type: none"> <li>• Display Brightness: 150 cd/m<sup>2</sup></li> <li>• Efficiency: 2 lm/W</li> <li>• Voltage ~250 V</li> </ul>
2001/04		

	<ul style="list-style-type: none"> <li>• 10" triode multicolor</li> <li>• Resolution: 240 x 320 x RGB</li> <li>• Pitch: 500 <math>\mu\text{m}</math> x 500 <math>\mu\text{m}</math></li> </ul>	<ul style="list-style-type: none"> <li>• Display Brightness: 300 cd/m<sup>2</sup></li> <li>• Efficiency: 2 lm/W</li> <li>• Voltage ~175 V</li> </ul>
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