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## 符號說明

- A:  $1.54 \times 10^{-10}$  (A V<sup>-2</sup> eV)  
B:  $6.83 \times 10^9$  (V eV<sup>-3/2</sup> m<sup>-1</sup>)  
d: distance between cathode and anode  
d<sub>1</sub>: the distance of emitters  
e: electron charge  
E: applied electric field  
E<sub>to</sub>: turn-on electric field  
E<sub>f</sub>: Fermi-level  
E<sub>F0</sub>: Fermi-level at 0K  
E<sub>vac</sub>: energy level in the vacuum  
h: effective barrier height  
h<sub>1</sub>: the height of emitters  
I: field emission current  
J: field-emission current density  
L: length  
q: electron charge  
r: root diameter  
S: slope of the F-N plot  
S<sub>F</sub>: field-screening factor  
t: time  
T: temperature  
V: applied voltage  
W<sub>a</sub>: surface potential barrier  
y:  $3.7947 \times 10^{-4} E^{1/2} / \phi$   
 $\alpha$ : emitting area  
 $\beta$ : local field enhancement factor at the emitting surface  
 $\epsilon_0$ : permittivity of free space  
 $\phi$ : work function  
 $\Delta\phi$ : decrease in barrier height  
 $\rho$ : density



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