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2004 08 11

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(22) 2003 02 04

(71) 134

(72) 335-33

1 301-1105

724 305-1306

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(54)

가 NaCl , NaCl , LiF ,
가 , 가 LiF ,
가 .

7

1 NaCl .
2 NaCl .
3 1.0nm 5.0nm 가 NaCl XPS .
4 LiF NaCl .

quinolato) aluminum(Alq_3) , , N
aCl , , .
, , NaCl .
ITO ITO , , ,
(hot trichloroethylene), .
ITO 가 , .
가 2.5×10^{-8} Torr , 가 0.1 /sec 50nm
N, N'-bis(3-methylphenyl)-N, N'-diphenylbenzidine(TPD) ,
가 , 1 /sec Alq_3 , 50nm
가 ,
, Al NaCl 0.1 /sec , ,
, NaCl LiF ,
NaCl ,
XRD (thickness monitor) .
NaCl monochromatic Al k radiation X-ray Photoelectron Spectroscopy(XPS)
, L-V(luminance-voltage), I-V(current-voltage) Keithley source measurement unit(Model
237) Photoresearch candela meter(PR650) ,
1 NaCl , NaCl
0.5, 1.0, 2.0nm 가 , Al , NaCl
. NaCl 가 1.0nm
NaCl .
, 2 1 NaCl , 가
, 0.5nm 2.0nm NaCl Al
, Na Na .
NaCl 1.0nm .
, 1 가 2~6V 2
. NaCl
, , NaCl

3 , NaCl 1.0 5.0nm 가 NaCl Na Cl 가 XPS .
 , 1.0nm 가 NaCl Na Cl 0.9:1 Na Cl 0.6:1 , 5.0nm 가 NaCl
 가 NaCl Na Cl 가 1:1 가 , Na Cl .
 , 1.0nm 가 NaCl 5.0nm 가 Na

4 5 LiF NaCl 가 0.5nm, 1.0nm LiF , 가 0.5nm, 1.0nm NaCl .
 , NaCl LiF .
 , 가 1.0nm NaCl LiF . 10V ,
 133mA/cm² , 1.0nm 가 NaCl , 1.0nm 가 LiF 3542cd/m² , 42
 96cd/m² , 200mA/cm² 가 LiF .
 LiF 가 NaCl .

6 1.0nm 가 NaCl LiF NaCl 가 .
 , 1.0nm 가 NaCl 가 0~50mA/cm² 1.0nm
 가 LiF 가 .
 , 가 가 NaCl 가 가 .

7 6 1nm 가 NaCl LiF ,
 9V .
 NaCl 2.25cd/A . 2.85cd/A , LiF
 가 가 , NaCl LiF 가
 , NaCl LiF 가 , 가 .

1nm NaCl

LiF

가 .

가 NaCl

가 .

(57)

1.

NaCl

2.

NaCl

$1.0 \pm 0.4\text{nm}$

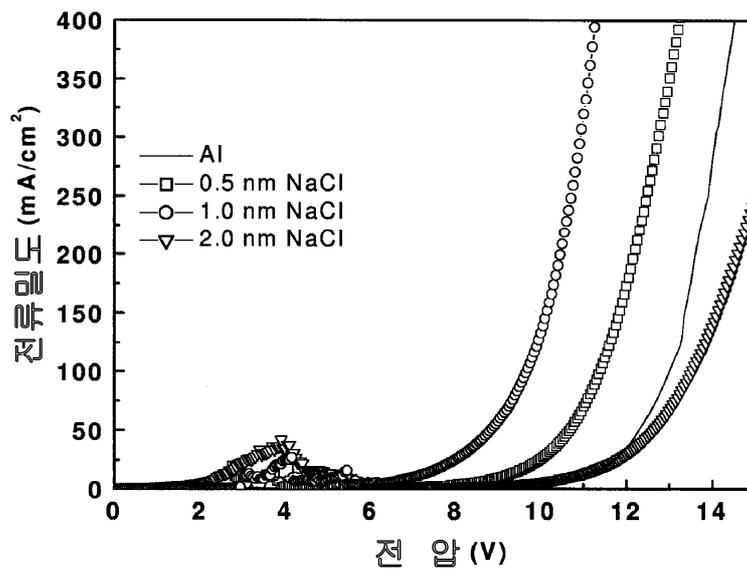
3.

2

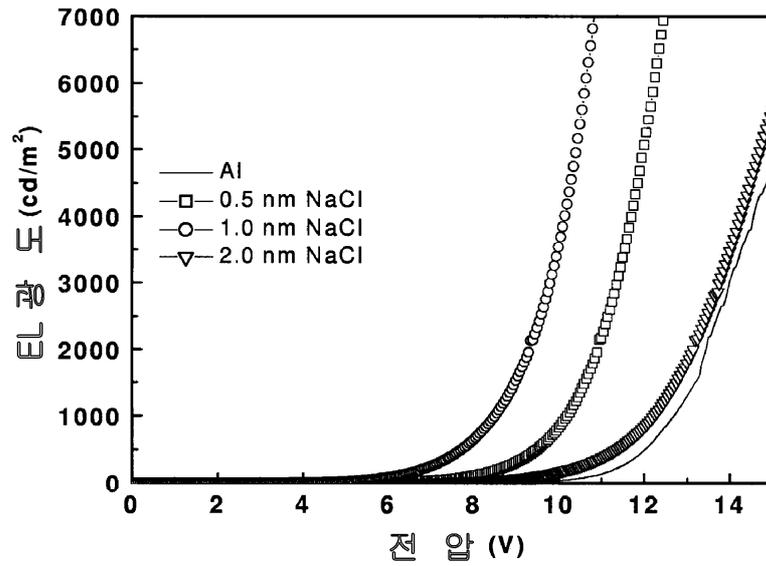
NaCl

1.0nm

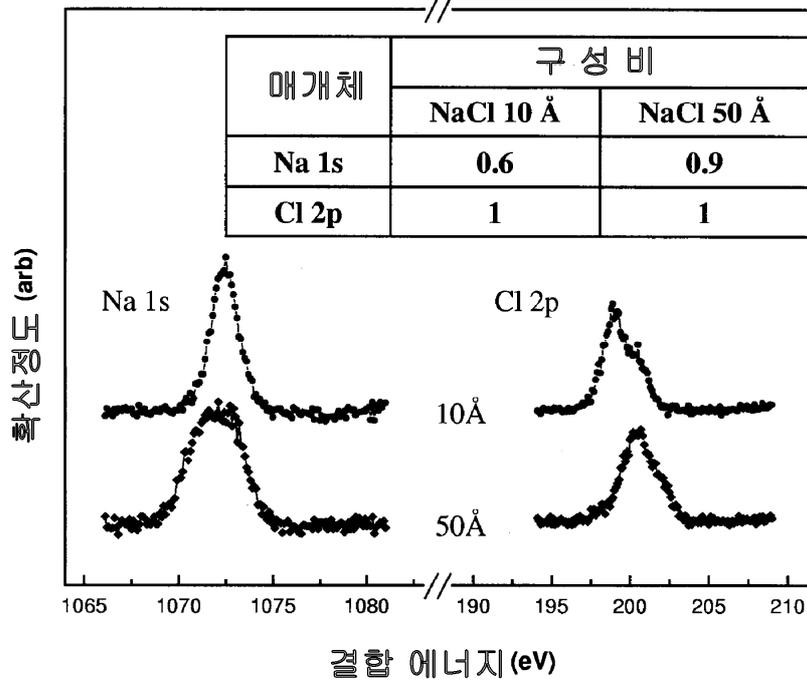
1



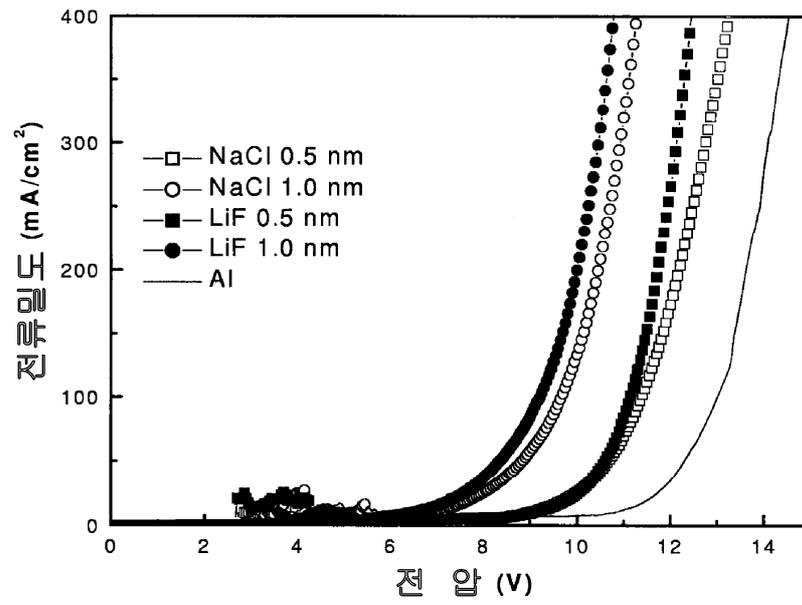
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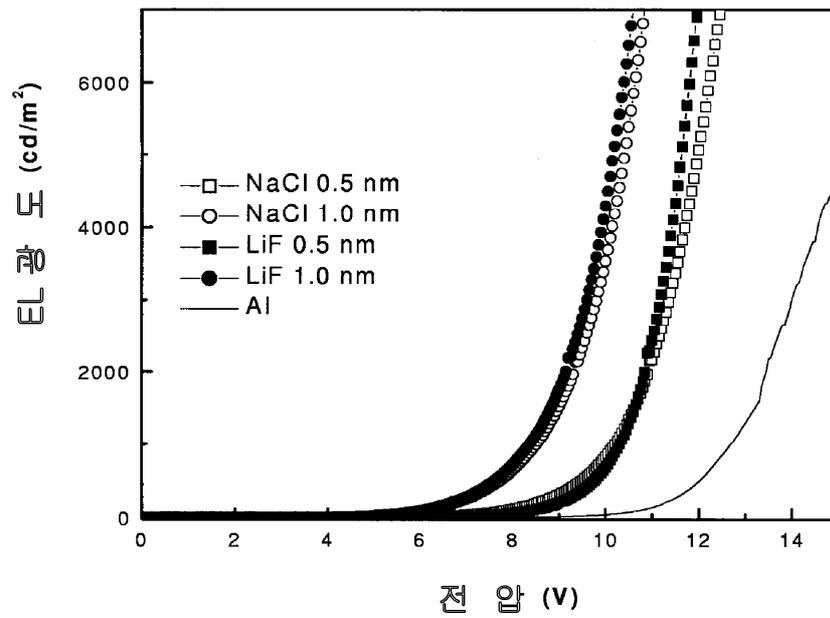
3



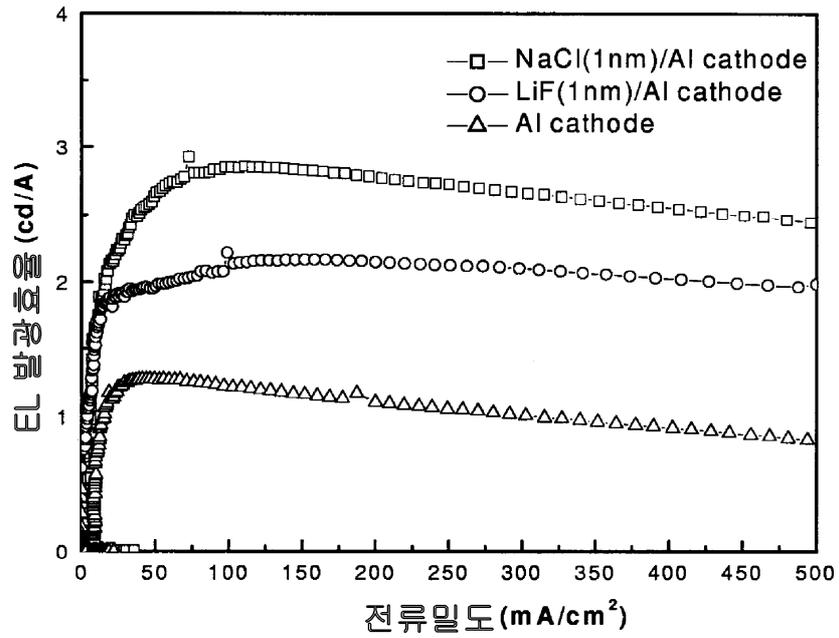
4



5



6



7

