

1

[]

[]

가 3.7V, 4V

3C

가

가

(redox shuttle) 가

가

5,709,968

2,4-

(2,4-difluoroanisole)

가

5,879,834

(biphenyl), 3-

(3-chlorothiophene),

가

가

가

(shut-down)

가

가

가 가

(swelling)

가

가

가

가

가

(current breaker)

가

100

200


(1999-10904).

가 ; ; 가 ;
([-CH₂CH(CONH₂) -]_n), ()([-CH₂CH(CH₂NH₂) -], ((P

oly(azelaic anhydride; ([-CO(CH₂)₇CO₂-]), ()
H₅)-] n), (4-)
() (H[OCH(CH₃)CH₂]_nOH), ()
() () () ()

(1) 1
(2) (4) (2) (4) (6)
(8) (2) (4) (10) (12) 가 (14)
(2) (4) (12) (18) (20) (22, 24) 가
(26) (26) (6) 가
가
가
가
0.001 5 %
5 %
1000 10 10 1
가
가
가
가

LiPF₆, LiBF₄, LiSbF₆, LiAsF₆, LiClO₄, LiCF₃SO₃, Li(CF₃SO₂)₂N, LiC₄F₉SO₃, LiAlO₄, LiAlCl₄, LiGaCl₄, LiN(C_xF_{2x+1}SO₂)(C_yF_{2y+1}SO₂)(_{1 2} , x y),
LiNO₃, LiCl, LiI 가
0.6 2.0M 가 0.6M 가 , 0.7 1.6M , 2.0M
(DMC), (DEC), (DPC), (MPC),
(EPC), (MEC) (EC), (PC),
BC) , n- , n- (cyclic) , n-
1:1 (chain)
1:9

[1]
(R)_p

(R 1 10 p 0 6 .)
가 1:1 30:1
1 가 가

(stacking) , (winding)

가 / 가 (

), 가
 LiMn_2O_4 , LiCoO_2 , LiNiO_2 , LiFeO_2 , V_2O_5

TiS, MoS , 가 / 가

/ / 3 / / 2 3

1

(1)

(EC): (EMC): (PC): (FB) 30:55:5:10
 1.3M LiPF_6 가 , 가 15000

0.5 % 가
 LiCoO_2 (: $10\mu\text{m}$), (P) (Solef6020) 96:2:2 N-
 (NMP) 가
 5.15 cm 가 $117\mu\text{m}$ PHS(),
 (Solef6020) 95:0.2:5 NMP
 5.3cm 가 $124\mu\text{m}$
 (PE) (: 5.5cm, : $16\mu\text{m}$)
 5.6g

(2) 가 1 % 1

(3) 가 5 % 1

(1)

(EC): (EMC): (PC): (FB) 30:55:5:10
 1.3M LiPF_6 가 1

3 0 V 4.2 V 가 1 3 1
 90 4 48 (formation) . 0.5C
 1 1 1 가

[1]

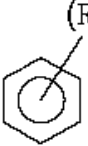
가		1	1
(mm)		3.49	3.49
	4	4.20	4.42
	48	9.80	11.08

1

1

1

(57)

1. 0.001 5 %
- 2.
3. 1000 10
4. $\text{LiPF}_6, \text{LiBF}_4, \text{LiSbF}_6, \text{LiAsF}_6, \text{LiClO}_4, \text{LiCF}_3\text{SO}_3, \text{Li}(\text{CF}_3\text{SO}_2)_2$
 $\text{N, LiC}_4\text{F}_9\text{SO}_3, \text{LiAlO}_4, \text{LiAlCl}_4, \text{LiGaCl}_4, \text{LiN}(\text{C}_x\text{F}_{2x+1}\text{SO}_2)(\text{C}_y\text{F}_{2y+1}\text{SO}_2)$
 $(\text{LiNO}_3, \text{LiCl}, \text{LiI})$
5. 0.7 2.0M
- 6.
7. (MPC), (DMC), (DEC), (DPC)
(PC) (EPC), (MEC) (EC)
8. (cyclic) (chain)
- 9.
10. 1
 $(\text{R})_p$

11. 1 10 p 0 6 .)
12. 1:1 30:1
13. 12

