

(19) (KR)  
(12) (B1)

(51) 。 Int. Cl.<sup>7</sup>  
H01M 10/48

(45)  
(11)  
(24)

2004 12 20  
10-0462661  
2004 12 10

(21) 10-2002-0038004

(65)

10-2004-0003336

(22) 2002 07 02

(43)

2004 01 13

(73) 1가 57

(72) 101 507

102 402

101 1207

(74)  
:

(54) 가

2

, Ni-Cd, NiMH 2 ,

ate of Charge)

(Depth of Discharge)

(SOC : St

가

|    |      |     |      |        |   |
|----|------|-----|------|--------|---|
| 1  |      |     |      |        |   |
| 2  |      |     | 3.8V |        |   |
| 3  |      |     | 3.9V |        |   |
| 4  |      |     | 4.0V |        |   |
| 5  |      |     | 4.2V |        |   |
| 6  |      |     | 4.0V | 180mAh |   |
| 7  |      |     |      |        | 가 |
| 8  |      |     | 3.8V |        | 가 |
|    | Rser | Rct |      |        |   |
| 9  |      |     | 3.9V |        | 가 |
|    | Rser | Rct |      |        |   |
| 10 |      |     | 4.0V |        | 가 |
|    | Rser | Rct |      |        |   |
| 11 |      |     | 4.2V |        | 가 |
|    | Rser | Rct |      |        |   |
| 12 |      |     | 4.0V | 180mAh |   |
|    | 가    |     | Rser | Rct    |   |

2 가 , 2 가 , 가 , 2 가 , 가 , 3 4V , 100Wh/kg , 2 가 , 18650 , 0.6Ah 2Ah , 가 , 가 ( 1 ) ( ) / US3,562,634 2 - US3,562,634 , US4,678,998 , 가 , US4,743,855 , US5,241,275 US5,717,336 , 264515 ,

가

(Open circuit voltage),

가

가

가

가

US 4,952,862

(Peukert paramete

r)

EP 119,547

US 3,984

,762

가

가

2

가

가

2

가

of Charge)

(Depth of Discharge)

(SOC : State

가

Voltage)

(OCV : Open Circuit

1

,515  
rge)

5%

(DOD: Depth of discha

10%

50%

60%

가

2

가

2

( Formation)

50%

60%

10%

20%

가 20mV가

SOC

10kHz

1mHz

1kHz

10mHz

264,515

(generic circuit model)

J. Power Sources, 83 (1999) 61) 가

Rser(resistance of separator and current collectors)

Rct(Charge transfer resistance)

x

, y

y

18650 1 2 12 3.8V, 3.9V, 4.0V, 4.2V  
 CC(Constant current), CV(Constant voltage) 900mA 가 , 90  
 mA 10%가 1800mA 가 . 4.15V , 0.5C , 180mAh , 10%  
 BPS 1000FL { : ( ) } , 10kHz ~ 10MHz 264,515  
 2 6 generic circuit model 7 . (J. P  
 over Sources, 83 (1999) 61) **Rser** (resistance of separator and current coll  
 ectors) **Rct** (Charge transfer resistance)  
 1.0C 8 12 가 , V4.  
 0 4.2V , 50% 4.0V

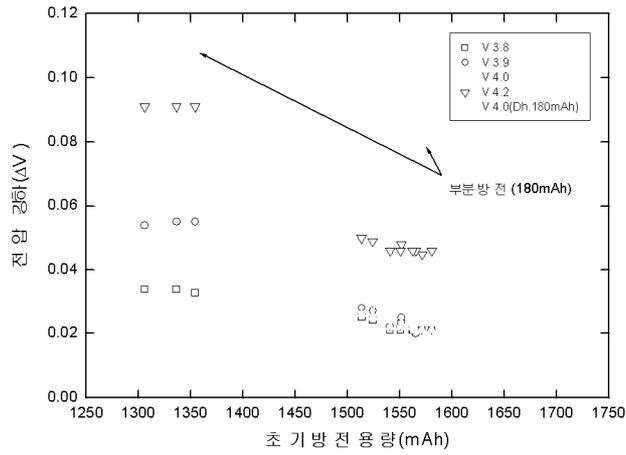
(57)

1. ( )
2. ( )
- 3.
- 4.
- 5.
- 6.

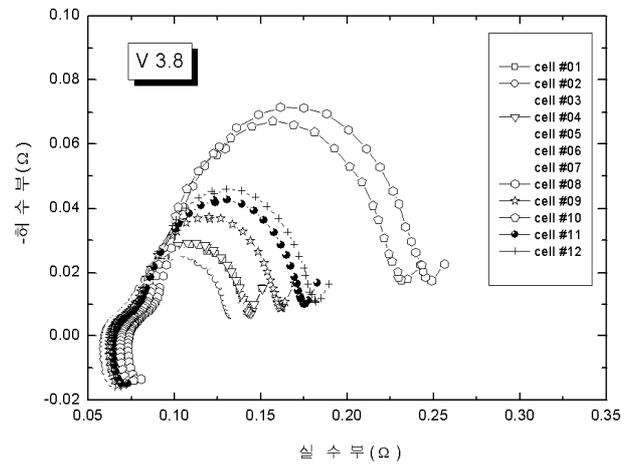
2 2 60% ,  
 10% 2 ,  
 가 ,  
 2  
 10mHz 10kHz 2  
 가 , ,  
 2  
 가 ,  
 2

7. 1 6 , , 2 1.0C  
 8. 1 6 , , 2 , Ni-Cd, NiMH 2

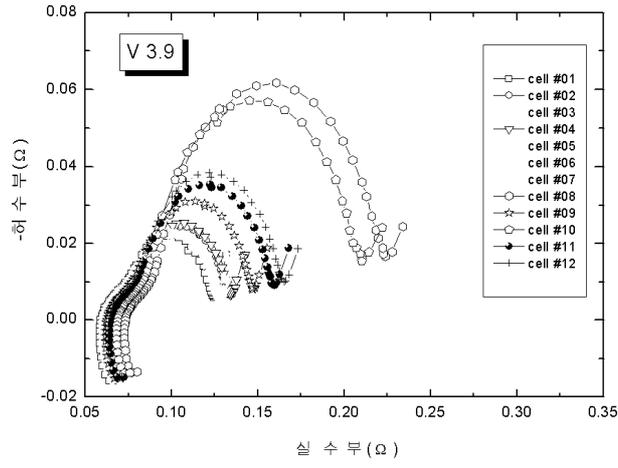
1



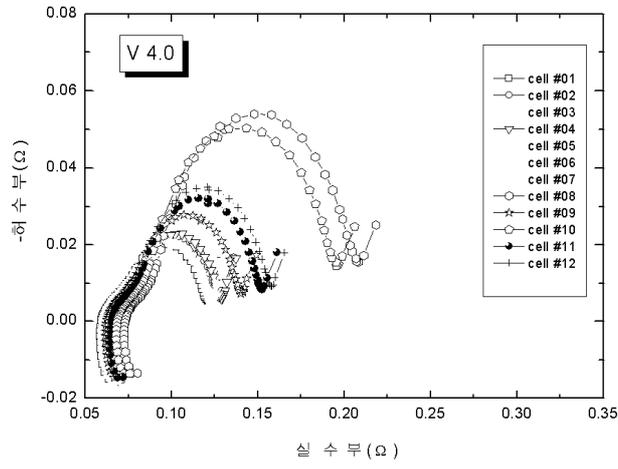
2



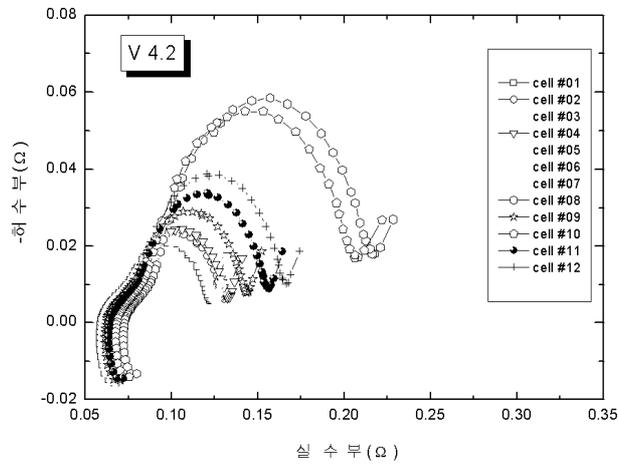
3



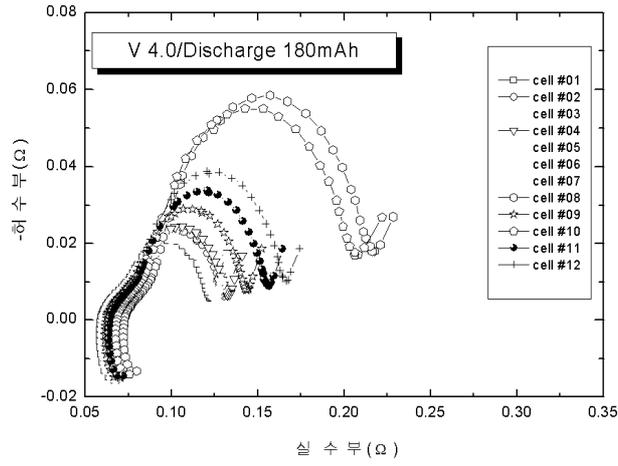
4



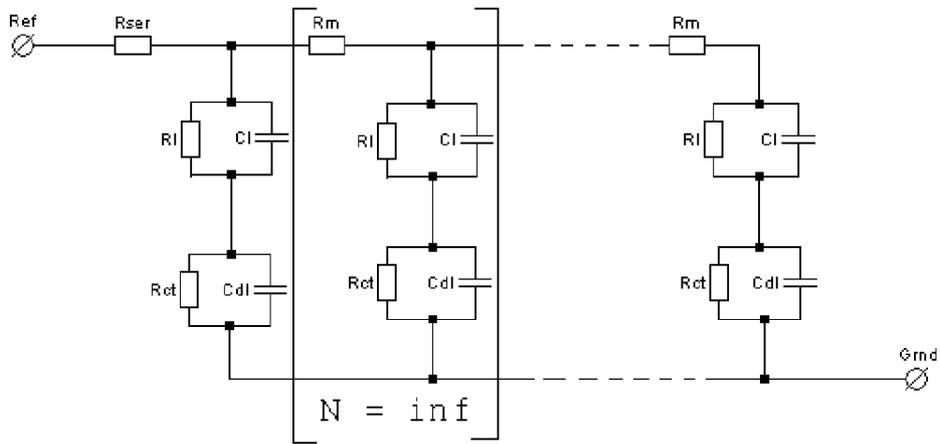
5



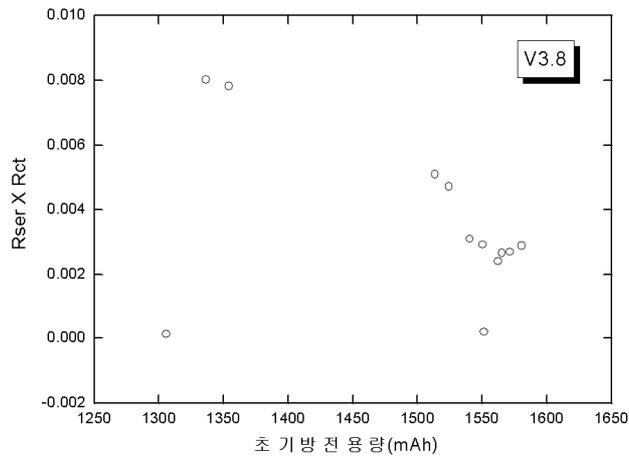
6



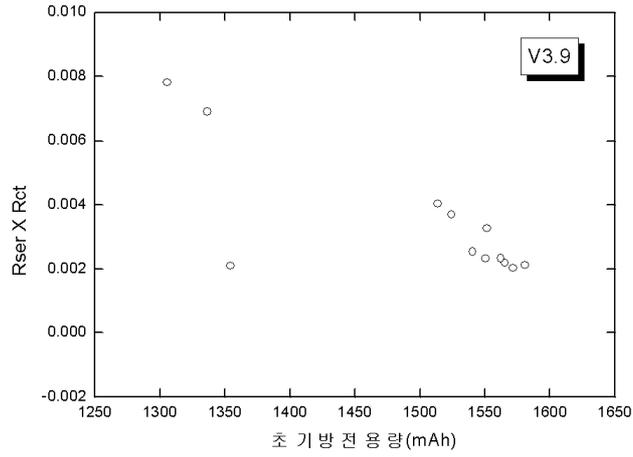
7



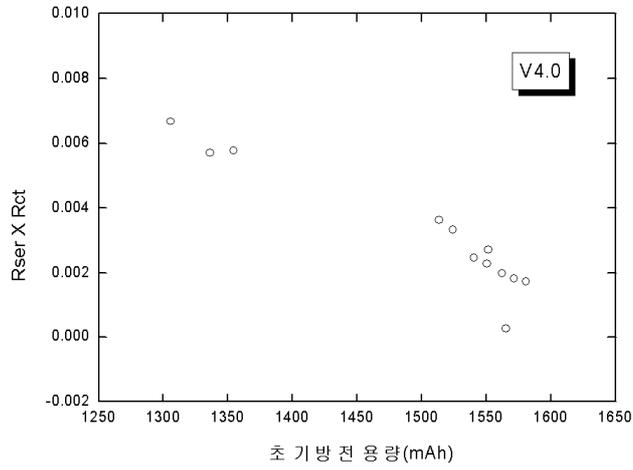
8



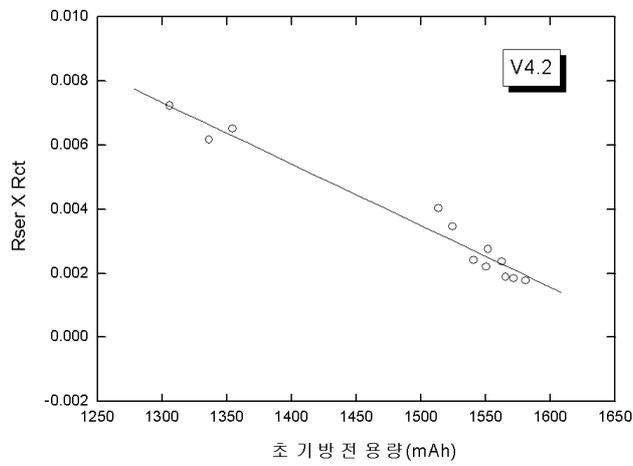
9



10



11



12

