

(KR)
(A)

2003-0052000
2003 06 26

(21) 10-2001-0081726
(22) 2001 12 20

(71) 134

(72) 699 702-1102

872-2

907 - 504

1 106 504

108 201

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(74)

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(54)

, , , (cermet), 가
 Al_a M_b N_c X_d I_e 가 , a+b
 +c+d+e=100 a 50%, 8 b 25, 5 c 20, 0 d 15, 0 e 2 M Cu Co
 , N Fe, Mn, Ni, Ru, Os, Mo, V, Mg, Zn , X Cr, Si, Be, B, Y,

(cermet)

HVOF

, , HVOF, ,

1 X- (X-ray diffraction pattern) ,

2a 2b HVOF Al-Ni-Co-Si

3 HVOF ,

4 가 ,

5 Al-Ni-Co-Si

6 Al-Ni-Co-Si

7 450 .

, , (cermet), .
 , (cermet), , , 가
 가 .
 1984 Al-Mn , , 5 , 8 , 10 , 12 , 가
 가 .

Al-Li-Cu, Al-Cu-Fe, Al-Ni-Co, Al-Cu-Co, Al-Pd-Mn
 가 가 .

(Kang) 0.1 ~ 0.2 가 Al-Cu-Fe, Al-Cu-Fe-Cr Al-Cu-Fe-Cr-Si
 (, S.S. Kang, J.M. Dubois and J. von Stebut, J. Mater. Res., 8 (10), (1993) p.2471.).

- - (pin-on-disc)

가 (, R.P. Matthew, C.I. Lang and D. Shechtman, *Tribo*
logy Letters, **7** , (1999) p.179. ; C.I. Lang, D. Shechtman, and E.J. Gonzales, *Bull. Mat. Sci.*, **22** (3), 189 (1999
) . ; C.I. Lang, D.J. Sordelet, M.F. Besser, D. Shechtman, F.S. Biancaniello and E.J. Gonzales, *J. Mater. Res.*, **1**
5 (9), (2000) p.1894.).

, Dubois et al. 5,652,877 (July 29, 1997)

가 .

가

(cermet),

(cermet)

5 , 8 , 10 , 12
(approximant) .

가

$$. Al_a M_b N_c X_d I_e \quad a+b+c+d+e=10$$

0, a 50, 8 b 25, 5 c 20, 0 d 15, 0 e 2 . M Cu Co
, N Fe, Mn, Ni, Ru, Os, Mo, V, Mg Zn , X Cr, Si, Be, B, Y,
가

 $0 < \quad < 100$

HVOF

가 가

가

가

가

1 X- (X-ray diffraction pattern) . 가

2 , .

() Al-Cu-Fe-Be (icosahedral)
, Al-Cu-Fe-Cr-B (icosahedral)
(decagonal) , Al-Ni-Co-Si (decagonal)
. Al-Cu-Fe-Si (approximant) .

2a 2b HVOF Al-Ni-Co-Si 가
(SEM) 가 . 2a HVOF , 가
가 2b HVOF 가 ,

3 HVOF Al-Ni-Co-Si 11.83% 가 HVOF 3
6.36% 가 Al-Cu-Fe-Si 9.9% 가 H
VOF 1.4% 가 가

HVOF 20cm 3cm 가
HVOF 16 ,

4 가 Al
-Cu-Fe-Be, Al-Cu-Fe, Al-Cu-Fe-Be-B, Al-Cu-Fe-Cr₁₀, Al-Cu-Fe-Cr₇, Al-Cu-Fe-Cr-B

5 Al-Ni-Co-Si ()
) 450 ()

5 HVOF 0.2 μ m
. 100 570m ()
0.43 가 , HVOF 0.37 .

Al 0.5 0.6 가
Al 가
ZrO₂ 0.8 가 Cr₂O₃
0.63 가 .

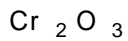
6 Al-Ni-Co-Si
, 6 5 HVOF 0.2 μ m
. 6 가 .

, Al-Ni-Co-Si
0.43 가
가 0.14m/s 0.56 m/s 가
0.52 0.43

, HVOF 0.36 가 0.36 0.
37 가 . 가 0.14m/s 0.56m/s 가 0.47
0.36 가 0.56m/s

(flash temperature) 가,
가 .

7 450



, Al-Ni-Co-Si HVOF

(cermet),

150

(non-sticking)

450

450

가

가

(57)

1.

(cermet)

2.

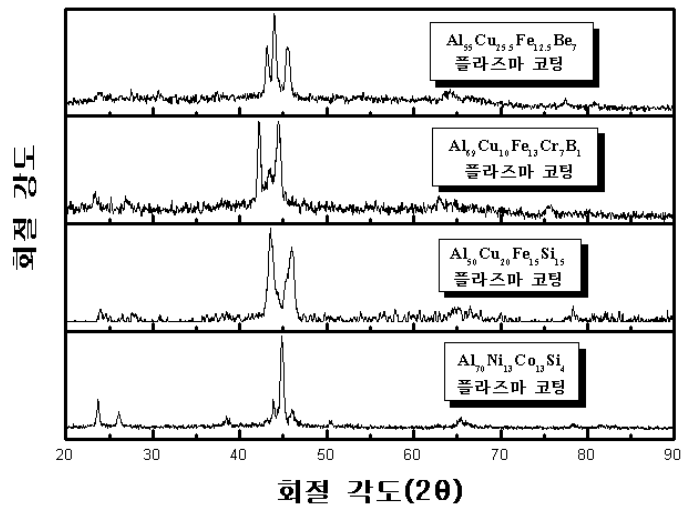
0< <100

HVOF

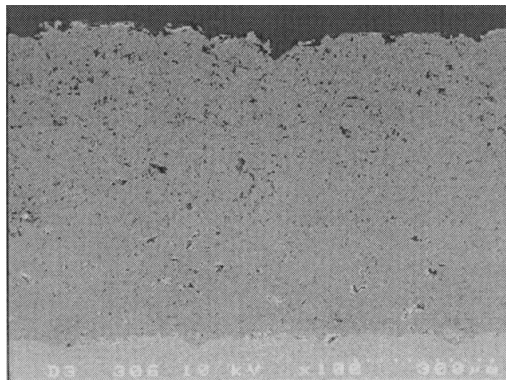
3.

2, a 50%, 8 b 25, 5 c 20, 0 d 15, 0 e 2, M Cu Co, N Fe, Mn, Ni, Ru, Os, Mo, V, Mg Zn, X Cr, Si, Be, B, Y, I

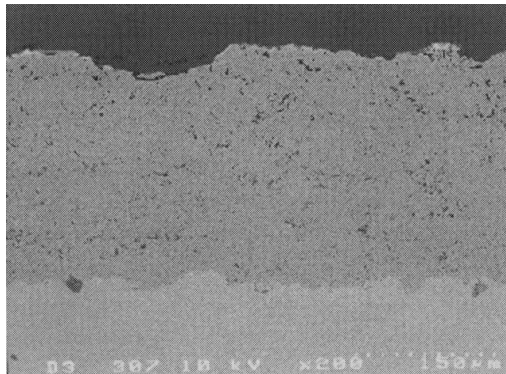
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2a



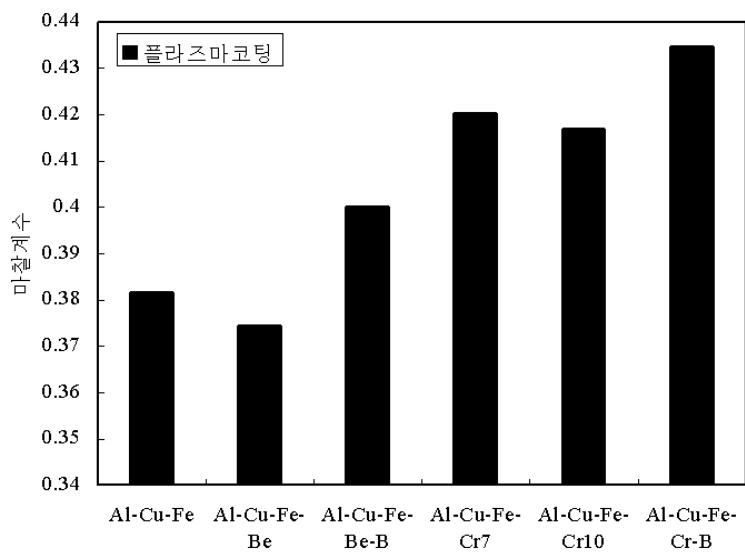
2b



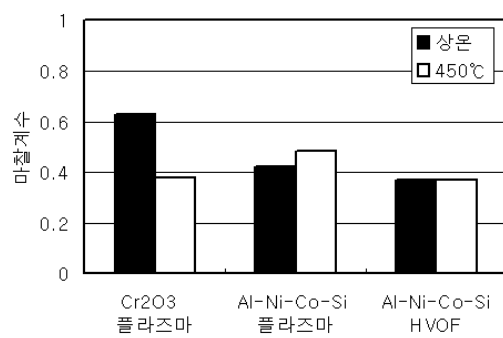
3

		플라즈마 코팅	HVOF 코팅
Al-Ni-Co-Si	기공율 (%)	11.83	6.36
	경도 (Hv50g)	559	577
Al-Cu-Fe-Si	기공율 (%)	9.9	1.4
	경도 (Hv50g)	643.7	657.4

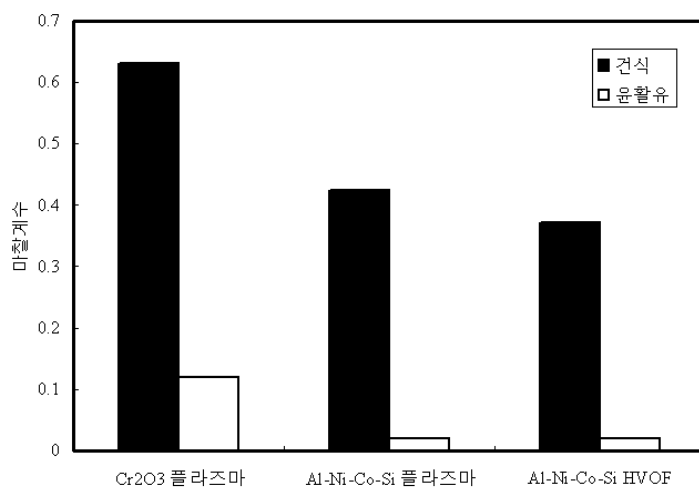
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5



6



7

