

NT



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가 1)

15

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< 1. 15 >

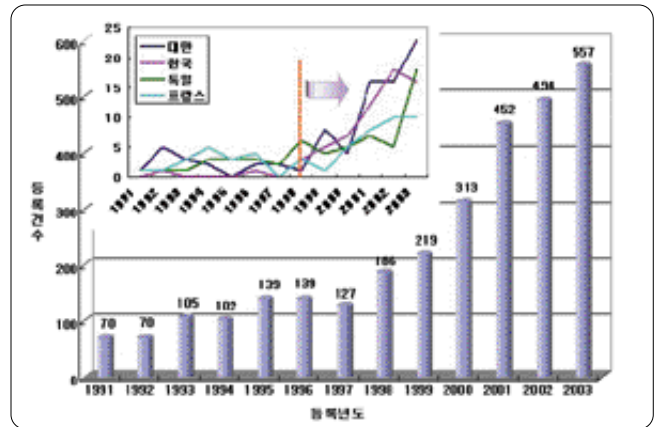
1.

1)

'98

'98

가 가



< 1. >

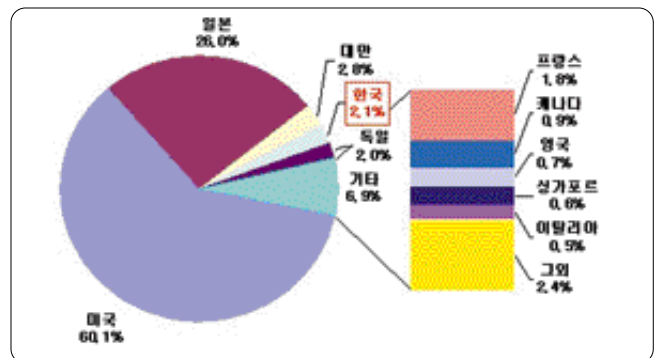
2)

가 (1,788 , 60.1%) (774 , 26%)

86%

NT 7 가 ,

4 가

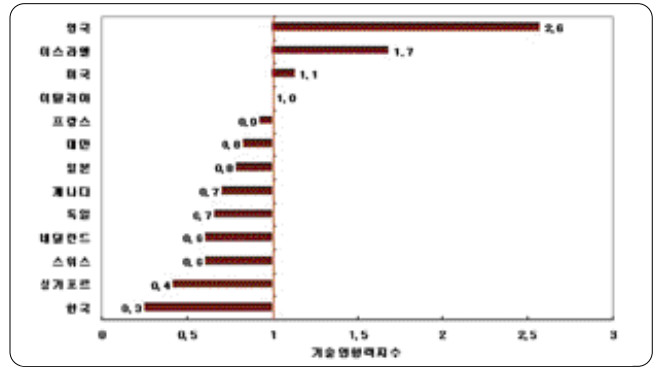
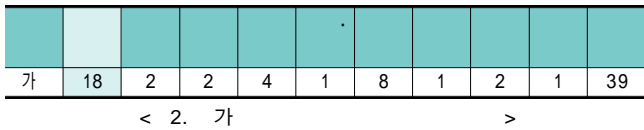


< 2. 가 >

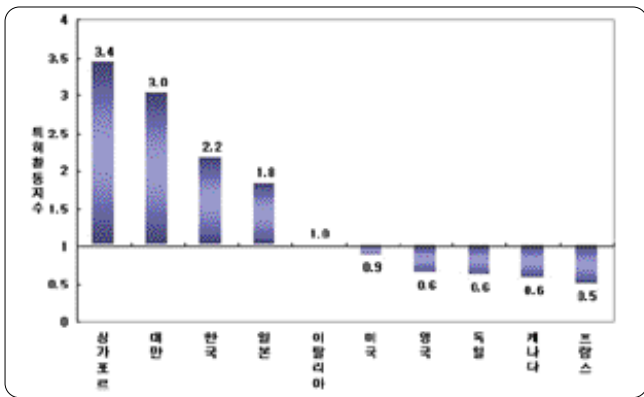
'91~2003 1

1) NT 2) NT 가8

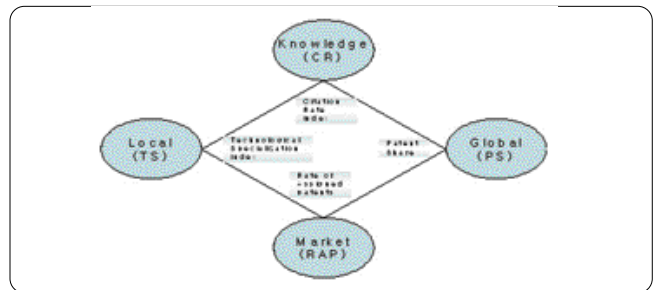
3) '91~2003 가 가 (1) 가 , 가 , 가 (39) (18) 46%



< 4. '91~2003 1 >



< 3. '91~2003 1 >



< 5. >

4) 가 , 가 (0.7%) (0.6)

TS(Technological Specialization), PS(Patent Share), CR(Citation Rate), RAP(Rate of Assigned Patents) 4 가 , 4 가 가

Cambridge Research & Instrumentation
Cambridge Display Technology

가 TS(Technological Specialization) 4) 가 (3.42) 가

5) 가 10 가
Nanotechnology Strength Indicator: International Rankings Based on US Patents(Dora Marinova²⁾ Michael McAlee³ 가)

CR(Citation Rate) (16.85) 가 , (1.65) 가 5) RAP(Rate Of Assigned Patent) (1.18) 가

2) Murdoch ISTP(Institute for Sustainability and Technology Policy; 1988) , <http://www.wistp.murdoch.edu.au/>
3) Western , <http://www.econs.ecel.uwa.edu.au/economics/Default.htm>
4) 가
5) () 가 「Firestone 1971」

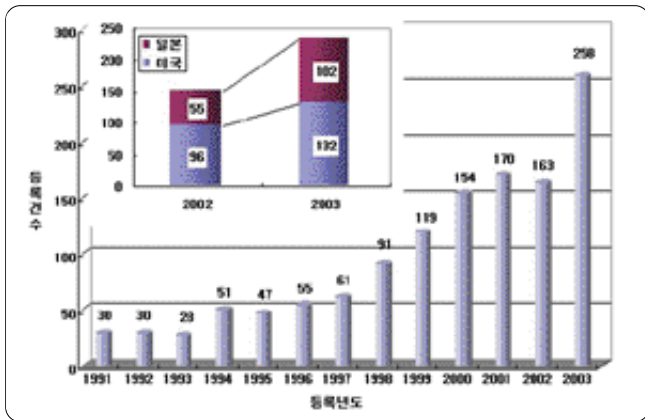
가	(rank)	TS (rank)	PS (rank)	CR (rank)	RAP (rank)
	1,788 (1)	0.87 (8)	60.1% (1)	7.45 (4)	1.01 (7)
	774 (2)	1.83 (5)	26.0% (2)	5.20 (8)	1.02 (6)
	83 (3)	3.02 (2)	2.8% (3)	5.46 (7)	1.02 (5)
	63 (4)	2.15 (4)	2.1% (4)	1.65 (13)	1.03 (4)
	59 (5)	0.60 (10)	2.0% (5)	4.37 (10)	1.11 (2)
	54 (6)	0.48 (13)	1.8% (6)	6.11 (6)	0.89 (9)
	26 (7)	0.56 (12)	0.9% (7)	4.62 (9)	0.96 (8)
	20 (8)	0.63 (9)	0.7% (8)	16.85 (1)	0.50 (13)
가	18 (9)	3.42 (1)	0.6% (9)	2.78 (12)	1.06 (3)
	16 (10)	1.00 (6)	0.5% (10)	6.56 (5)	0.80 (11)
	13 (11)	2.47 (3)	0.4% (11)	8.46 (3)	1.18 (1)
	13 (12)	0.92 (7)	0.4% (12)	11.08 (2)	0.87 (10)
	13 (13)	0.60 (11)	0.4% (13)	4.00 (11)	0.65 (12)

< 3. '91~2003 1 >

2.

1)

2003 가
2002 2 IBM, Micron Technology, Seagate Technology TDK

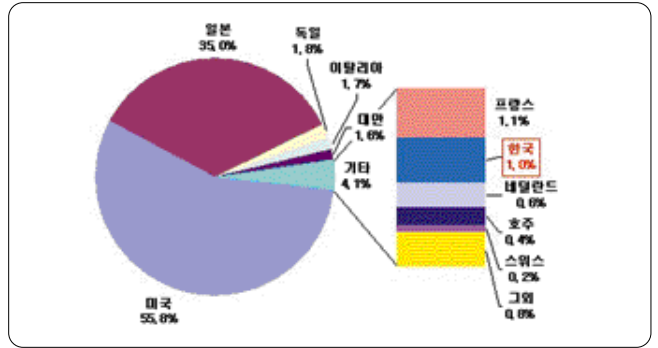


< 6. >

2)

가 35%(440) (55.8%, 702) 가
(23), (21), (20),
(14) 13 1%

NT 7 가

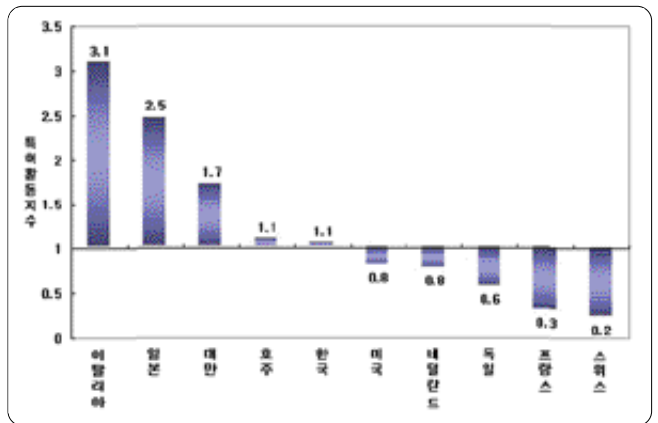


< 7. '91~2003 1 >

3)

'91~2003

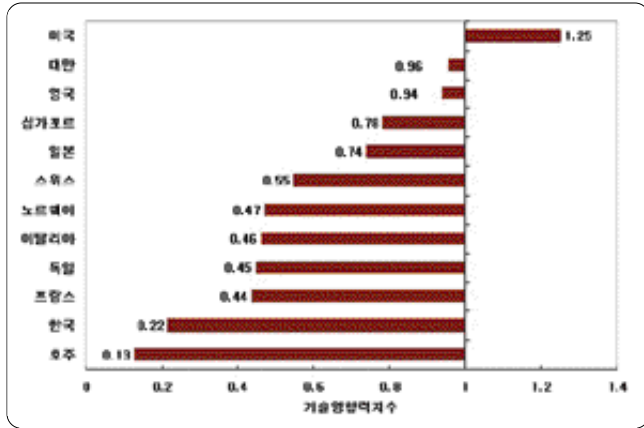
가 가 가 (1) , , ,
SGS - Thomson Microelectronics STMicroelectronics



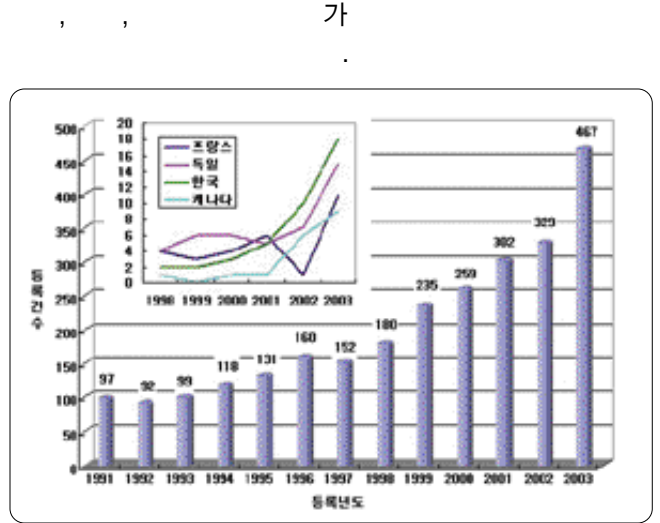
< 8. '91~2003 1 >

4)

가 1.25 IBM, Micron Technology 가 , ,



< 9. '91~2003 1 >



< 10. >

5) 가 10 가

TS(Technological specialization)
(3.1)가 가
CR(Citation Rate) (7.98)
가 , CR 가 1.38 가
(6.1)
가

Of Assigned Patent) (1.44) RAP(Rate 가

가	(rank)	TS (rank)	PS (rank)	CR (rank)	RAP (rank)
	702 (1)	0.81 (5)	55.8% (1)	7.98 (1)	1.02 (3)
	440 (2)	2.46 (2)	35.0% (2)	4.73 (3)	0.98 (6)
	23 (3)	0.56 (6)	1.8% (3)	2.87 (5)	1.44 (1)
	21 (4)	3.1 (1)	1.7% (4)	2.95 (4)	1.00 (4)
	20 (5)	1.72 (3)	1.6% (5)	6.10 (2)	1.05 (2)
	14 (6)	0.29 (7)	1.1% (6)	2.79 (6)	0.82 (7)
	13 (7)	1.05 (4)	1.0% (7)	1.38 (7)	1.00 (5)

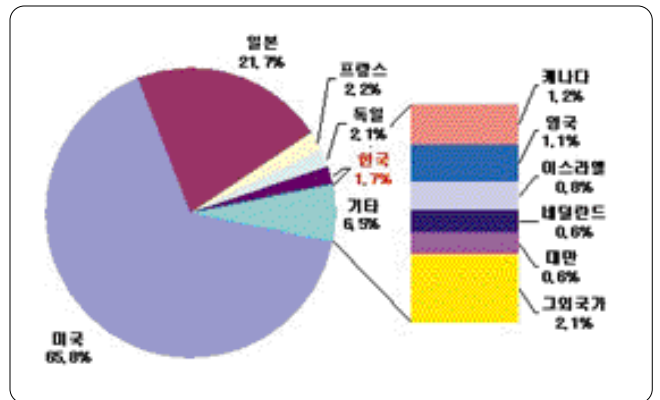
< 4. '91~2003 1 >

3.

1)

'91~2003 가
, 2003 ,

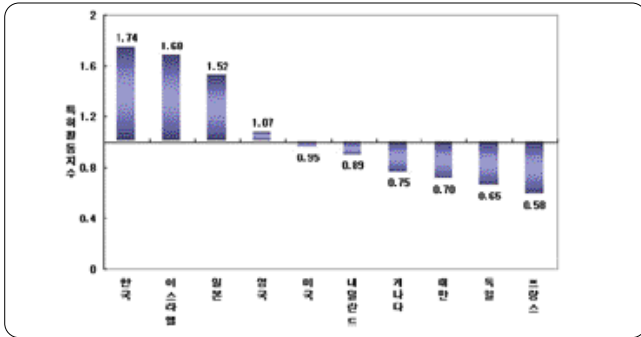
2) 가 (1,724 , 65.8%)
21.7%(568) , 2.2%(58) , 2.1%(56)
, NT 7 가
5



< 11. '91~2003 1 >

3)

91~2003 가 (1) ,



< 12. 가 >
'91~2003 1

4) 가1
가 가
Transitions Optical, 3M, Xerox

가 1

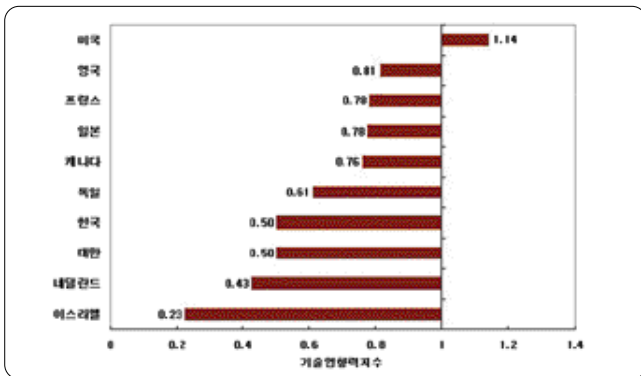
가	(rank)	TS (rank)	PS (rank)	CR (rank)	RAP (rank)
	1,724 (1)	0.95 (5)	65.8% (1)	7.36 (1)	1.04 (4)
	568 (2)	1.52 (3)	21.7% (2)	5.01 (5)	1.03 (5)
	58 (3)	0.51 (12)	2.2% (3)	5.05 (4)	0.94 (7)
	56 (4)	0.65 (11)	2.1% (4)	3.95 (8)	0.76 (9)
	45 (5)	1.74 (1)	1.7% (5)	3.24 (9)	1.05 (3)
	31 (6)	0.75 (9)	1.2% (6)	4.90 (6)	0.74 (11)
	30 (7)	1.07 (4)	1.1% (7)	5.23 (3)	0.45 (12)
	21 (8)	1.68 (2)	0.8% (8)	1.48 (12)	0.75 (10)
	17 (9)	0.89 (6)	0.6% (9)	2.76 (11)	1.06 (2)
	17 (10)	0.70 (10)	0.6% (10)	3.24 (10)	1.00 (6)
	16 (11)	0.87 (7)	0.6% (11)	4.75 (7)	0.76 (8)
	11 (12)	0.78 (8)	0.4% (12)	5.82 (2)	1.83 (1)

< 5. >
'91~2003 1

1.

1) 가 가 '96 18 '96 14
가 2003 33

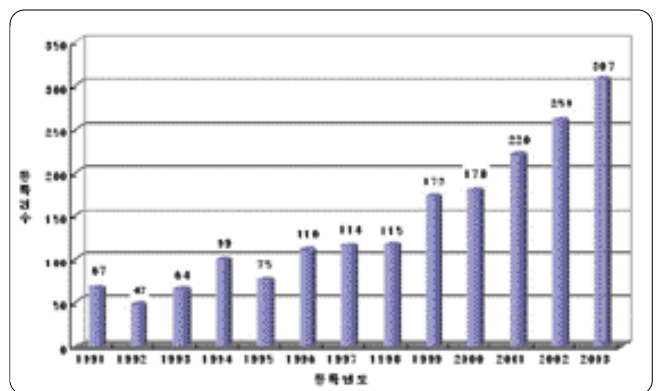
가



< 13. >
'91~2003 1

5) 가 10 가
가

TS(Technological specialization)
(1.74) 가
가
CR(Citation Rate) (7.36) 가
가 CR 가 3.24 가 9
가
RAP(Rate Of Assigned Patent)
(1.83)가 가



< 14. >

1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
54	41	49	79	54	89	80	88	122	126	145	174	1,309
3	1	6	3	4	6	8	10	19	9	25	25	32
1	2	2	3	2	7	7	5	10	13	9	16	20

< 6. > 3

2)

71.6%(1,309) 가

5.3%(97) ,

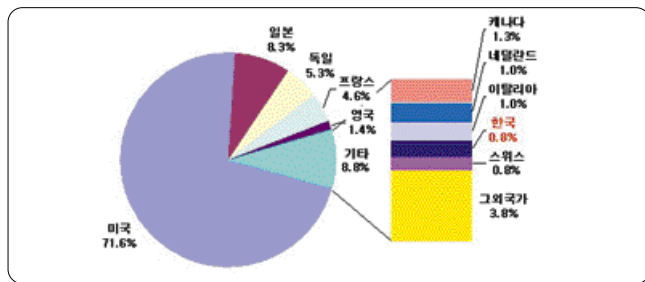
4.6%(84) , 1.4%(26)
20%

NT

7

가

9

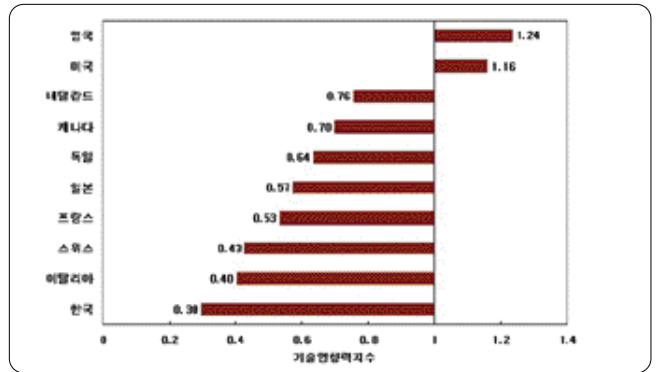


< 15. '91~2003 가 >

Industries

가 (1) 가
1.16

Rohm and Haas,
AMCOL International, Dow Chemical

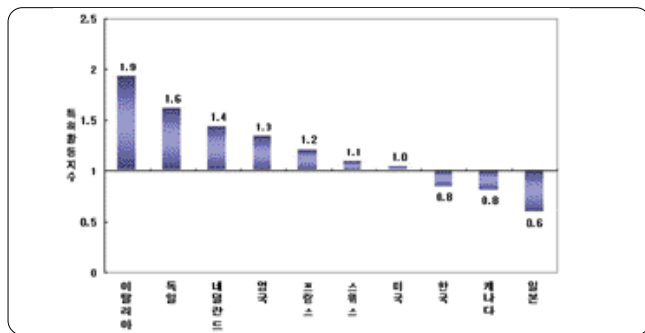


< 17. '91~2003 1 >

3)

'91~2003

(1)



< 16. '91~2003 1 >

4)

(1.3)

(1.24)

Cambridge Display Technology

Imperial Chemical

5)

가 10 가
가

TS(Technological specialization)

(1.93)가 가

CR(Citation Rate)

(5.77) 가 , CR 가 1.20
가 8 가

RAP(Rate Of Assigned Patent)

(1.40)가

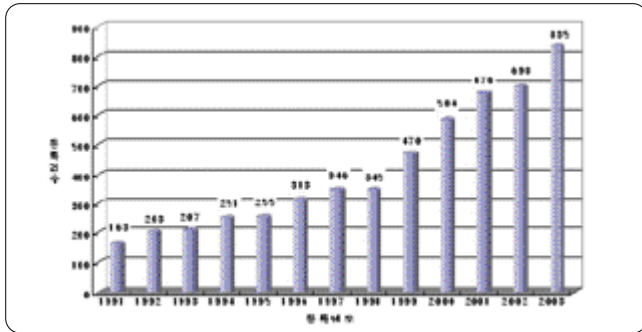
가

가	(rank)	TS (rank)	PS (rank)	CR (rank)	RAP (rank)
	1,309 (1)	1.04 (7)	71.6% (1)	5.42 (2)	1.03 (4)
	151 (2)	0.58 (11)	8.3% (2)	2.68 (6)	1.03 (5)
	97 (3)	1.61 (2)	5.3% (3)	2.97 (4)	0.90 (8)
	84 (4)	1.21 (5)	4.6% (4)	2.49 (7)	1.12 (2)
	26 (5)	1.34 (4)	1.4% (5)	5.77 (1)	1.08 (3)
	23 (6)	0.8 (9)	1.3% (6)	3.26 (3)	0.47 (11)
	19 (7)	1.43 (3)	1.0% (7)	2.79 (5)	0.79 (10)
	19 (8)	1.93 (1)	1.0% (8)	0.89 (10)	0.95 (6)
	15 (9)	0.83 (8)	0.8% (9)	1.20 (8)	0.88 (9)
	14 (10)	1.09 (6)	0.8% (10)	1.14 (9)	1.40 (1)
	13 (11)	0.77 (10)	0.7% (11)	0.54 (11)	0.93 (7)

< 7. '91~2003 1 >

2. 6)

1) '99 가 가
'99

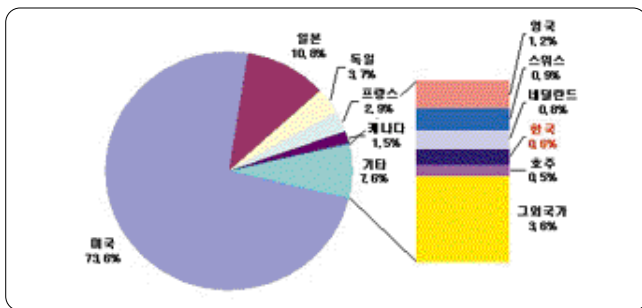


< 18. >

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
미국	10	21	17	19	25	32	40	38	46	74	72	90	575
일본	9	4	2	4	8	11	5	12	11	28	24	40	199
독일	7	5	7	6	9	9	6	9	12	14	28	22	153
영국	-	2	2	2	2	9	8	5	5	11	11	11	79
프랑스	5	6	2	2	2	-	4	5	4	7	6	9	64
스웨덴	3	3	2	1	3	4	1	3	6	7	4	5	47
기타	1	3	-	2	2	2	-	1	3	4	2	8	41

< 8. 가 >

2) 가 가 73.6%(3,936)
가 가 0.6%(34) (1.8%, 121)

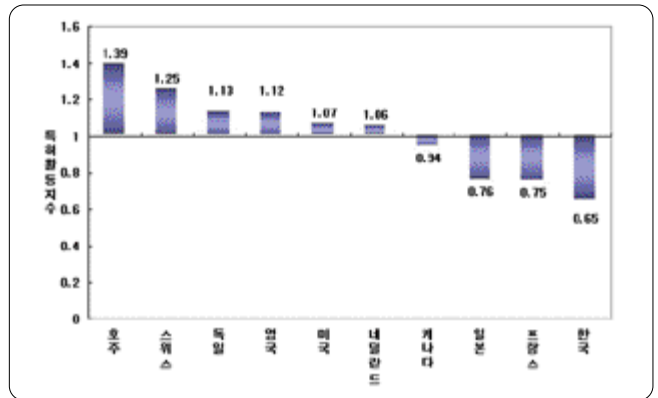


< 19. 가 >

'91~2003 1

3) '91~2003 가 (1)

가 , , , , , Silverbrook Research

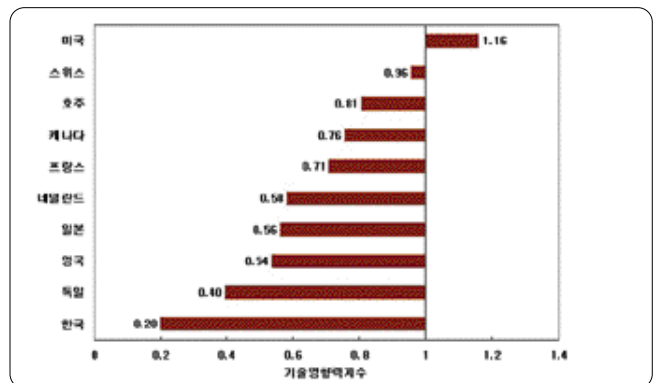


< 20. >

'91~2003 1

4) 가 1.16 가

(1) 가 가 Xerox, 3M, Dow Chemical, Eastman Kodak

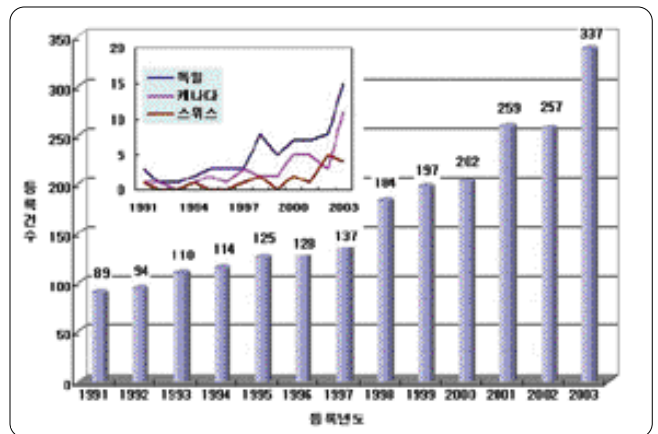


< 21. >

'91~2003 1

6)) 2004

5) 가 10 가
 가 . 가
 TS(Technological specialization)
 (1.48)가 가 . 가
 CR(Citation Rate) (6.64)
 가 , CR 가 1.15
 가 16 . 가
 RAP(Rate
 Of Assigned Patent) (1.57)가 가

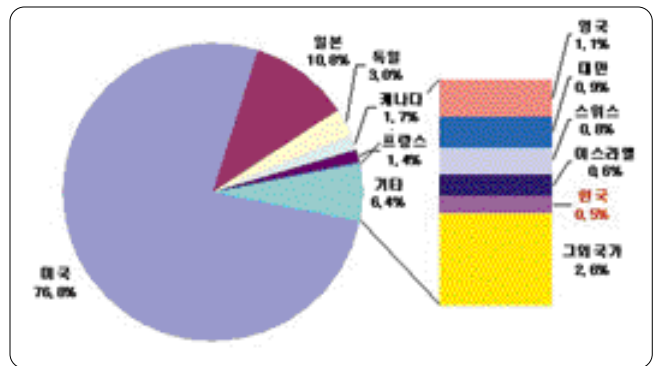


< 22. . >

가	(rank)	TS (rank)	PS (rank)	CR (rank)	RAP (rank)
	3,936 (1)	1.07 (8)	73.6% (1)	6.64 (1)	1.09 (4)
	575 (2)	0.76 (13)	10.8% (2)	3.21 (10)	0.99 (9)
	199 (3)	1.13 (6)	3.7% (3)	2.27 (14)	0.95 (10)
	153 (4)	0.75 (14)	2.9% (4)	4.06 (6)	0.87 (11)
	79 (5)	0.94 (11)	1.5% (5)	4.33 (4)	0.24 (17)
	64 (6)	1.12 (7)	1.2% (6)	3.08 (12)	0.74 (14)
	47 (7)	1.25 (5)	0.9% (7)	5.49 (2)	1.02 (6)
	41 (8)	1.06 (9)	0.8% (8)	3.34 (8)	1.14 (2)
	34 (9)	0.65 (15)	0.6% (9)	1.15 (16)	1.10 (3)
	27 (10)	1.39 (2)	0.5% (10)	4.63 (3)	0.84 (13)
	26 (11)	1.32 (3)	0.5% (11)	3.23 (9)	1.08 (5)
	23 (12)	0.90 (12)	0.4% (12)	2.30 (13)	1.00 (7)
	17 (13)	0.34 (17)	0.3% (13)	3.76 (7)	0.85 (12)
	17 (14)	0.59 (16)	0.3% (14)	0.88 (17)	0.74 (15)
	14 (15)	1.48 (1)	0.3% (15)	3.14 (11)	1.00 (8)
	12 (16)	0.97 (10)	0.2% (16)	1.50 (15)	0.48 (16)
	11 (17)	1.26 (4)	0.2% (17)	4.09 (5)	1.57 (1)

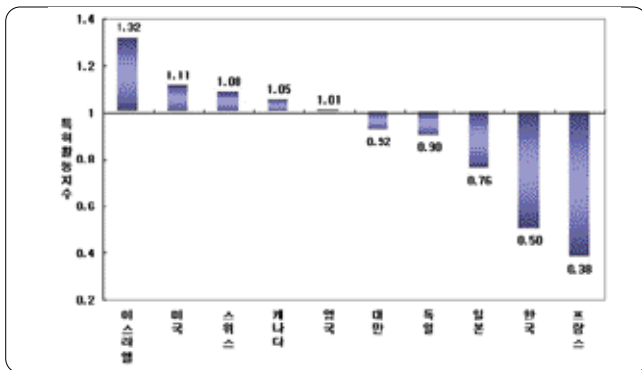
< 9. '91~2003 1 >

2) 76.3%(1,714) 가
 , NT 0.5%(11)
 7 가
 10 가



< 23. '91~2003 1 >

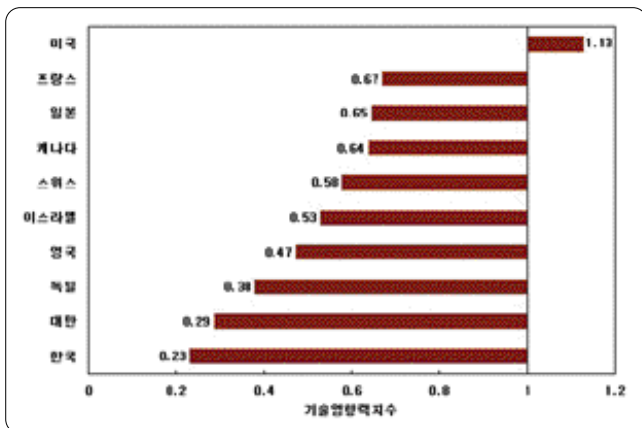
1) 가 (1)
 , 가 (0.5)
 (0.38) 가 (1)
 가



< 24. 가 >
'91~2003 1

4) 가
(1) 가 가
< 29>

Societe de Production et de Recherches Appliquees
Commissariat a l'Energie Atomique



< 25. 가 >
'91~2003 1

5) 가 10 가
가
TS(Technological specialization)
(1.32) 가 , 가
CR(Citation Rate)
(7.47) 가 CR 가 1.55

가 . 가

RAP(Rate Of Assigned Patent) (1.10)

가

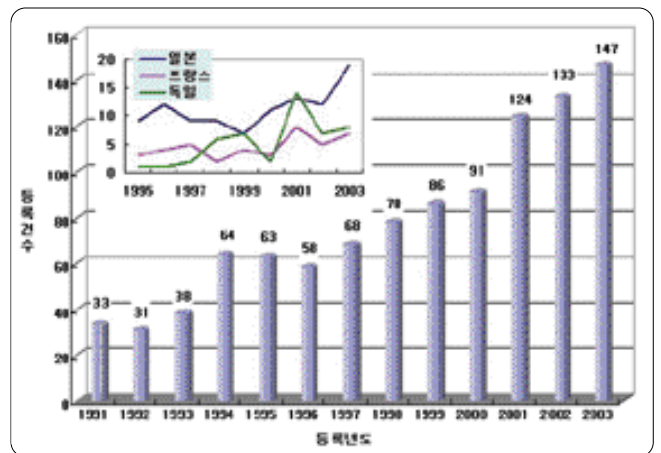
가	(rank)	TS (rank)	PS (rank)	CR (rank)	RAP (rank)
	1,714 (1)	1.11 (2)	76.8% (1)	7.47 (1)	1.02 (4)
	241 (2)	0.76 (8)	10.8% (2)	4.27 (3)	1.03 (3)
	66 (3)	0.9 (7)	3.0% (3)	2.53 (8)	0.88 (8)
	37 (4)	1.05 (4)	1.7% (4)	4.22 (4)	0.88 (7)
	32 (5)	0.38 (10)	1.4% (5)	4.44 (2)	0.89 (6)
	24 (6)	1.01 (5)	1.1% (6)	3.13 (7)	0.73 (10)
	19 (7)	0.92 (6)	0.9% (7)	1.89 (9)	1.06 (2)
	17 (8)	1.08 (3)	0.8% (8)	3.82 (5)	0.89 (5)
	14 (9)	1.32 (1)	0.6% (9)	3.50 (6)	0.74 (9)
	11 (10)	0.50 (9)	0.5% (10)	1.55 (10)	1.10 (1)

< 10. 가 >
'91~2003 1

2.

1)

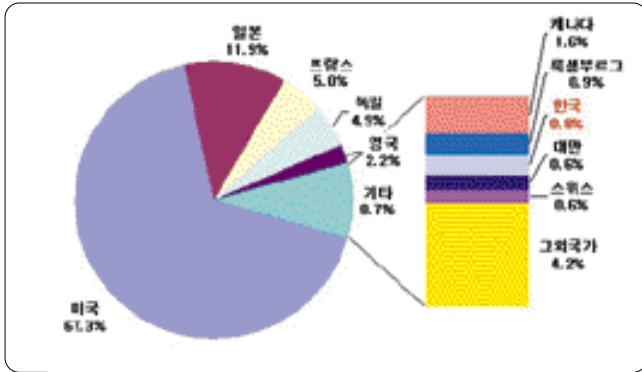
가 '94
, '94
가



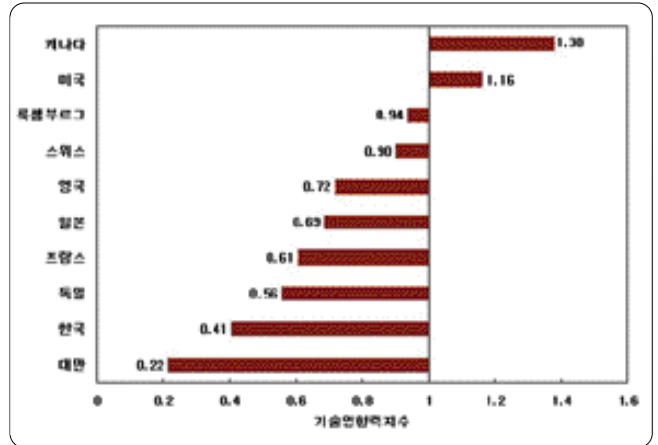
< 26. 가 >

2)

가 67.3%
(682), 11.9%(121), 5%(51), 4.9%(50
)
, 8
0.8%



< 27. '91~2003 가 >



< 29. '91~2003 가 >

3) '91~2003 가 (1) 19 가 9 가 10.3 가

5) 가 10 가 8 가

TS(Technological specialization)

(2.04) 가 가

CR(Citation Rate)

(6.38)가 가 (1.88) 가

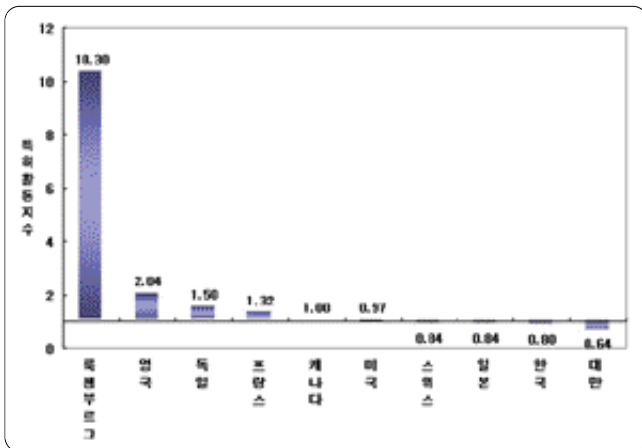
가

RAP(Rate

Of Assigned Patent)

(1.04)

가



< 28. '91~2003 가 >

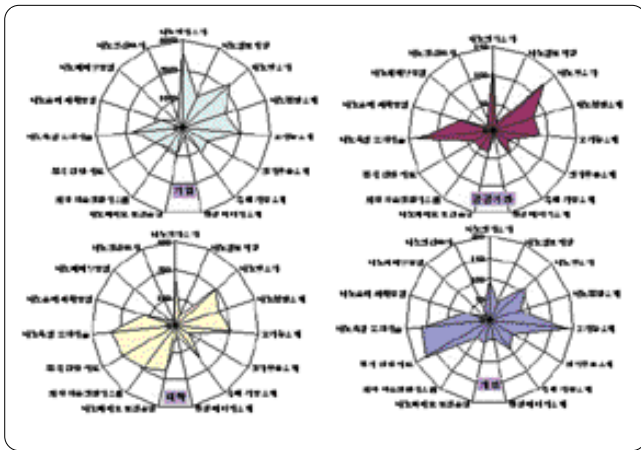
4) 가 (1) 가 Ellul; Joseph P. Westaim Technologies 가

10.3

가	TS (rank)	PS (rank)	CR (rank)	RAP (rank)	
	682 (1)	0.97 (5)	67.3% (1)	5.36 (2)	1.04 (1)
	121 (2)	0.84 (6)	11.9% (2)	3.17 (4)	0.98 (3)
	51 (3)	1.32 (3)	5.0% (3)	2.80 (5)	0.96 (4)
	50 (4)	1.5 (2)	4.9% (4)	2.58 (6)	0.93 (5)
	22 (5)	2.04 (1)	2.2% (5)	3.32 (3)	0.79 (6)
	16 (6)	1 (4)	1.6% (6)	6.38 (1)	0.67 (7)
	8 (7)	0.80 (7)	0.8% (7)	1.88 (7)	1.00 (2)

< 11. '91~2003 가 >

1.



< 30. 가 '91~2003 1 >

	IBM	NEC	L'Oreal	Bayer	Hyal Pharmaceutical	British Technology Group	Taiwan Semiconductor Manufacturing	Philips Electronics	SGS-Thomson Microelectronics
	174	215	-	-	-	-	25	33	8
	155	64	-	-	-	-	7	1	14
	56	71	-	4	-	2	14	-	3
	20	8	11	17	-	-	-	-	-
	48	13	8	8	-	2	1	1	3
	30	16	-	3	-	-	1	-	2
	10	7	1	12	-	-	-	-	-
	1	-	-	-	-	-	-	-	-
	1	-	190	-	-	1	-	-	-
	-	-	21	1	29	1	-	-	-
	6	-	1	-	-	-	-	-	1
	71	13	-	-	-	1	2	4	-
	13	5	5	1	-	1	1	-	1
	28	6	-	-	-	-	1	16	-
	29	15	-	-	-	-	3	2	-
	642	433	237	46	29	8	55	57	17

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1) IBM, NEC, , Taiwan Semiconductor Manufacturing
Philip 가 IT IT

Semiconductor Manufacturing Taiwan
Taiwan Semiconductor Manufacturing

L'Oreal
Hyal Pharmaceutical 가

	Navy	Agency of Industrial Science and Technology	Commissariat a l'Energie Atomique	National Research Council of Canada	The Secretary of State for Defence in Her Britann	ETRI	National Science Council	Nederlandse Organisatie voor Toegepast Natuurwet
	18	4	14	2	2	13	-	-
	2	1	3	-	-	2	-	-
	34	4	10	2	4	6	1	-
	13	10	2	2	-	1	2	4
	14	5	4	2	1	2	2	2
	7	4	3	-	-	7	1	-
	3	3	3	1	-	1	1	1
	1	-	-	-	-	1	-	-
	4	2	1	2	-	-	1	-
	2	-	-	-	-	-	1	-
	7	-	1	-	-	-	-	-
	24	9	9	1	2	1	3	-
	15	5	1	1	1	-	2	-
	4	1	-	-	-	1	-	-
	3	1	-	-	1	5	1	-
	151	49	51	13	11	40	15	7

< 13. 가 '91~2003 1 >

3) Top10

3M 9.4 , Motorola
9.2 1 IBM (7.5)

Motorola 3M 가 NT IT
, IBM 2 가
Xerox 가
13.5 3M (11.4)
. Kodak 가
15 가

US5078994(: Microgel drug delivery system),
US5399363(: Surface modified anticancer
nanoparticles)

. Motorola
Advanced Micro Devices

가 IT

	IBM	Xerox	3M	NEC	Motorola	Micron Technology	Toshiba	Advanced Micro Devices	Eastman Kodak	L'Oreal
	7.7	10.8	20.0	5.4	11.8	5.3	6.6	3.7	3.0	-
	9.2	13.5	11.4	4.8	6.6	10.1	7.3	0.0	3.4	-
	7.6	6.9	11.3	3.2	4.2	3.1	4.9	1.2	5.8	-
	5.6	5.2	4.7	6.5	3.0	6.7	1.0	-	3.5	1.2
	6.6	9.2	11.7	3.6	10.0	5.9	3.3	0.8	2.3	0.5
	5.8	9.6	8.6	3.1	3.1	2.5	5.0	2.0	4.6	-
	3.3	10.4	8.4	4.9	10.0	0.0	-	-	3.0	3.0
	7.0	-	6.3	-	4.0	18.0	6.3	-	-	-
	1.0	-	0.7	-	-	-	-	-	-	2.6
	-	-	0.0	-	-	-	-	-	15.0	2.5
	2.5	0.0	7.5	-	1.0	-	0.0	-	6.5	0.0
	9.8	9.4	8.0	2.2	8.0	5.5	4.3	1.7	1.0	-
	4.5	2.6	7.1	2.4	15.8	0.0	4.0	5.0	1.8	1.0
	4.8	3.8	7.3	3.5	11.2	1.8	3.8	0.5	-	-
	3.6	1.6	2.3	5.3	8.9	2.8	18.2	2.5	-	-
	7.5	8.5	9.4	4.7	9.2	5.5	6.8	3.0	4.5	2.4

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