

세계주요국의 R&D 투자액과 화학문헌발표 및 특허권 소유 비율

□ Total and Nondefense R&D Spending

(\$ Billion, Constant 1987)

	1990	1989	1988	1987	1986	1980	% annual change	
							1989~90	1980~90
Total R&D								
U. S.	129.5	129.8	128.8	125.4	123.3	87.3	0%	4%
Japan	59.2	54.5	50.3	46.9	43.9	29.3	9	7
W. Germany	28.8	28.2	27.2	26.5	24.9	21.4	2	3
France	20.9	19.9	18.8	18.1	17.5	13.3	5	5
U. K.	—	18.0	17.4	16.9	16.8	—	—	—
Italy	11.1	10.0	9.5	9.0	8.3	5.1	11	7
Sweden	—	3.6	—	3.7	—	—	—	—
Nondefense R&D								
U. S.	94.1	92.3	90.2	86.2	85.2	66.5	2%	4%
Japan	58.8	54.1	49.9	46.6	43.6	29.1	9	7
W. Germany	27.3	26.9	26.0	25.2	23.6	20.4	1	3
France	16.0	15.6	14.6	14.2	13.7	10.3	3	5
U. K.	—	14.7	14.1	13.3	13.0	—	—	—
Italy	10.7	9.4	8.9	8.6	7.9	5.1	14	8
Sweden	—	3.2	—	3.3	—	—	—	—

〈C&EN, Aug. 17, 1992〉

□ Total R&D Funding as % GNP, 1989

	U. S.	Japan	W. Germany
Nondefense	1.9	3	2.8
Total	2.7	3	2.9

〈Chem. Eng., Sept. 1992〉

□ Sources of R&D Budget of U. S.

	1992	1991	1990	1989	1986	1982	% annual change	
							1991~92	1982~92
Industry	81.1	78.3	75.5	72.1	61.1	40.7	4%	7%
Federal government	68.2	65.2	63.9	62.6	54.3	36.6	5	6
Universities	5.3	4.8	4.4	3.9	2.8	1.7	10	12
Other nonprofit institutions	2.9	2.6	2.3	2.1	1.4	1.0	12	11
Total(billion dollars)	157.4	150.8	146.2	140.8	119.5	80.0	4%	7%

〈C&EN, Aug. 17, 1992〉

□ Performers of R&D in U. S.

	1992	1991	1990	1989	1986	1982	% annual change	
							1991~92	1982~92
Industry	110.3	106.8	104.3	101.9	87.8	58.7	3%	7%
Federal government	17.6	16.5	16.0	15.1	13.5	9.1	7	7
Universities	19.0	17.5	16.3	15.0	10.9	7.3	9	10
University-associated federal R&D Centers	5.1	5.0	4.8	4.7	3.9	2.5	2	7
Other nonprofit institutions	5.5	5.2	4.7	4.1	3.4	2.4	6	9
Total(billion dollars)	157.4	150.8	146.2	140.8	119.5	80.0	4%	7%

〈C&EN, Aug. 17, 1992〉

□ Origin of Chemical Literature in Chemical Abstracts

% of total	1991	1987	1983	1979	1975
U. S.	29.2%	27.8%	27.0%	27.5%	25.8%
Japan	12.5	11.7	10.6	9.7	7.3
U. S. S. R.	11.1	12.7	17.0	19.0	24.6
Germany	7.3	7.2	7.3	7.2	6.8
U. K.	5.7	5.7	7.3	7.2	6.8
France	4.2	4.2	4.1	4.2	4.1
China	4.0	3.3	2.1	0.3	0.1
Canada	3.0	3.0	2.7	2.9	2.7
India	2.7	3.0	3.0	3.1	2.7
Italy	2.4	2.3	2.5	2.2	2.1
Poland	1.5	1.7	1.8	2.2	2.1
Netherlands	1.5	1.4	1.4	1.3	1.1
Spain	1.4	1.4	0.9	0.7	0.5
Australia	1.2	1.3	1.3	1.2	1.1
Sweden	1.1	1.2	1.1	1.1	1.2
Switzerland	1.1	1.1	1.0	1.0	1.0
Czechoslovakia	0.8	1.2	1.1	1.4	1.6
All others	9.3	9.8	9.3	9.1	8.9
Total papers(thousands)	453.6	386.5	371.4	370.8	317.5

□ Recipients of U. S. Chemical Patents

% of patents issued	1991	1990	1989	1988	1986	1982	Total
							1991~92
U. S. Origin	51%	50%	51%	52%	54%	57%	53%
Foreign Origin	49	50	49	48	46	43	47
Japan	21	21	20	20	19	14	18
Germany	10	10	10	11	11	11	10
U. K.	4	4	4	4	4	4	4
France	4	4	3	4	3	4	4
Switzerland	2	2	2	2	2	2	2
Canada	2	2	2	2	1	1	2
Italy	2	2	2	1	1	1	1
Netherlands	1	1	1	1	1	1	1
Sweden	1	1	1	1	1	1	1
Belgium	1	1	1	1	1	1	1
Total numbers	27,433	25,822	26,951	21,800	19,621	18,631	222,258

〈러키고분자연구소 조창기〉