

RESEARCH IN THE AREA OF CATALYSIS - PART 2 (as seen from Science Citation Index Data Base)

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Abstract : In a previous article, the strength of research in the area of catalysis has been analyzed in terms of publications of a few selected scientists in India. In this article, we continue this analysis further in terms of comparison with the performance of a few selected scientists from international scene. The current relevance of the research in this area has also been examined in terms of the references quoted in the articles published by some leading scientists in this area in this country.

In an earlier article (part 1 of this series)[1] we have examined the performance of a selected few scientists in India in the field of catalysis. This analysis has been mainly based on the citation of papers by various chosen scientists in a few national and other institutions. This analysis as we are aware is highly restricted and the selection was arbitrary. Hence it has been decided to continue this analysis further in the forthcoming articles. The purpose of this part is to compare the performance of a few other scientists from Indian laboratories and also to compare them with the performance of chosen international scientists with a view to evaluate the performance of our scientists. In Table 1, the data pertaining to a few selected scientists from international community are given.

Table 1 Citation data for a few selected scientists from international community in the area of catalysis for the period 1993-2003

The selection of scientists for this presentation is once again arbitrary except that the selection has been made from the names of editorial board members of an international journal in catalysis and a few scientists well known in some countries. We are aware that the choice is totally arbitrary and also may not be appropriate for the purpose it is done. However, the data are given for any possible use by the readers. The references cited by typical Indian scientists especially with the respect to the time period of the references have also been analyzed with a view to assess the contemporary nature of the research going on in Indian Laboratories. In this presentation, only some more data are given and it is proposed to continue this analysis on other aspects as well in the forthcoming articles.

S.No	Scientist from	Total number (publications) 1993-03	Total number of citations	Average citation per paper
1	Japanese Scientist (WU)	40	320	8.0
2	Chinese Scientist (JYY)	129	2699	20.9
3	Scientist from Britain (JCV)	78	1071	13.7
4	Scientist from USA (RJG)	116	2049	17.7
5	Scientist from Swiss (RP)	185	1326	7.2
6	Scientist from Swiss (AR)	106	444	4.2
7	Scientist from Hungary(LG)	119	626	5.3
8	Scientist from Hungary (FS)	109	1462	13.4

Table 2 Citation data for a few selected scientists from India in the area of catalysis for the period 1993-2003 (kindly refer to data in Table 1 of part 1 in addition to the data presented in this part)

S.No	Scientist from	Total number (publications) 1993-03	Total number of citations	Average citation per paper
1	UICT, Bombay	71	445	6.3
2	CMERI, Durgapore	27	86	3.2
3	NCL Scientist IV	147	984	6.7
4	NCL Scientist (V)	87	433	5.0
5	CUSAT Scientist	85	134	1.6
6	NCL Scientist(VI)	33	58	1.8
7	NCL Scientist(VII)	26	102	3.9
8	NCL Scientist (VIII)	30	111	3.7
9	IITB Scientist (I)	62	169	2.7
10	IIP Scientists (I)	45	126	2.8
11	IIP Scientist (II)	19	47	2.5

Table 3. Distribution of references cited by one of the Indian Scientists in the papers published between 2001 and 2003

Paper published*	02#	01#	00#	99#	98#	97#	92-96#	<91#
2003 (6)		3(50)	-	1(16.6)	1(16.6)	1(16.6)		
July 03(31)	3.7(9.7)	6(19.4)	4(12.9)	2(6.5)	1(3.3)	1(3.3)	6(19.4)	8(25.8)
June 03(32)	1 (3.1)	10(31.3)	8(25)	4(12.5)	1(3.1)	-	2(6.3)	6(18.8)
May 03 (22)		6(27.3)	2(9.1)	2(9.1)	3(13.6)	1(4.6)	5(22.7)	3(13.6)
July 03(31)	3(9.7)	5(16.1)	2(6.5)	1(3.3)	3 (9.2)	4(12.9)	10(32.3)	3(9.7)
April 03(20)		6(30)	5(25)	3(15)	1(5)	1(5)	2(10)	2(10)
December 01 (27)			4(14.8)	5(18.5)	-	2(7.4)	9(33.3)	7(25.9)
November 01 (11)			2(18.2)	1(9.1)	1(9.1)	3(27.3)	4(36.4)	
October 01 (38)			3(7.9)	2(5.3)	2(5.3)	2(5.3)	13(34.2)	16(42.1)
June01(12)			2(16.6)	2(16.6)	1(8.3)	1(8.3)	3(25)	3(25)

* The numbers in brackets in this column refer to the total number of references cited in each of these papers

The numbers in brackets in these columns refer to the percentage of references of the year.

It can be seen that more than 50% of the references cited are 10 years or less while the percentage references more than 10 years contribute only 44.3.

Table 4. Distribution of references cited by one of the Indian Scientists in the papers published between 2001 and 2003

Paper Published*	02#	01#	00#	99#	98#	97#	92-96#	<91#
2003(12)	1+1(16.6)	1(8.3)	3(25)	1(8.3)	2(16.6)	1(8.3)	-	2(16.6)
March 2003(29)	2(6.9)	5(17.2)	4(13.8)	3(10.3)	2(6.9)	-	7(24.1)	6(20.7)
February 03 (22)	2(9.1)	1(4.6)	2 (9.1)	1(4.6)	2(9.1)	5(22.7)	5(22.7)	4(18.2)
Dec 02(16)		-	-	4(25)	-	-	7(43.8)	5(31.3)
December 02 (33)		1(3.0)	4(12.1)	2(6.0)	4(12.1)	3(9.1)	8(24.2)	11(33.3)
December 02 (24)	1(4.2)	3(12.6)	1(4.2)	1(4.2)			1(4.2)	17 (70.8)
February 02 (21)			1(4.8)			3(14.3)	10(47.6)	7(33.3)
April 02 (18)		4(22.2)	2(11.1)		2(11.2)		10(55.6)	
April 02 (26)			4(15.4)			3(11.5)	8(30.8)	11(42.3)
March 02 (11)			1(9.1)				6(54.5)	4(36.4)
August 02 (16)			1(6.3)		2(12.5)	2(12.5)	4(25)	7(43.8)

* The numbers in brackets in this column refer to the total number of references cited in each of these papers

The numbers in brackets in these columns refer to the percentage of references of the year. (the data in Table 4 give higher percentages of references which are 10years or older than 10 years this number is around 60 %)

The data given in Tables 3 and 4 denote that Indian scientists are mostly working on contemporary areas in the field of

catalysis. However, we shall be analyzing the data further in the forthcoming presentations.

Reference:

1.B.Viswanathan, Bull.Catalysis Soc.India 2(2003)40-42.