

Mapping the Connectivity of the publications of Dr Paul Ratnasamy
B. Viswanathan
National Centre for Catalysis Research
Indian Institute of Technology, Madras

This communication attempts to evaluate the publications of Dr Paul Ratnasamy in relation to the contribution to the knowledge domain. The connectivity and pioneering roles played by his publications are indicated.

Dr Paul Ratnasamy, the former director and presently the INSA Ramanujam Professor at the National Chemical Laboratory is a well known scientist in the field of Catalysis. It is therefore appropriate to analyze his scientific output in the last 25 years and place it in the context of development of research in the field of Catalysis in India. From 1983 to date, the search in the name of “Ratanasamy P” in the Web of Science data base provided 125 entries. The distribution of these 125 entries in terms of the type of document is given in Table 1.

Table 1. Publications of Dr Paul Ratnasamy for the period 1983-2007 based on the document type

Document type	Record count	Percentage of 125 (total number)
Articles	106	87.2
Meeting Abstract	4	3.2
Note	4	3.2
Review	4	3.2
Letter	3	2.4

The data show that Paul Ratnasamy has spent more time on creation of new knowledge and his contemporary reviews are limited.

Table 2 Distribution of Paul Ratnasamy’s 125 publications on the basis of years

Year	Number	Year	Number
1983	6	1996	4
1984	3	1997	4
1985	-	1998	4
1986	3	1999	3
1987	3	2000	5
1988	3	2001	5
1989	9	2002	1
1990	7	2003	7
1991	12	2004	6
1992	8	2005	4
1993	12	2006	6
1994	2	2007*	3

1995	4		
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* 2007 not complete

It is clear that in these 25 years Dr Paul Ratnasamy has been consistent in his publication endeavour and has been constantly contributing to the scientific literature. The details of the journals in which he has published most of his 125 publications in this 25 year period are given in Table 3.

Table 3 Distribution of the journals in which Dr Paul Ratnasamy has chosen to publish his 125 papers in the last 25 years

Journal	IF	No.	Journal	IF	No.
Journal of Catalysis	4.533	28	Journal of Molecular Catalysis A	2.511	6
Zeolites		14	Micro & Macro Porous Materials	2.796	6
Applied Catalysis A	2.630	12	Abs of Am Chem Soc		4
Catalysis Letters	1.772	8	Stud. Surf.Sci, Catal		4
Applied Catalysis		8	Catalysis Today	2.148	3

If refer to impact factor for the year 2006

In Table 4 the data of the joint publications with scientists of other countries are given. It is seen that Dr Paul Ratnasamy has been collaborating with the most of the countries where catalysis research had been strong in this period.

Table 4 Data of joint publications with the scientists of other countries by Paul Ratnasamy

Country	Number	Country	Number
USSR	3	Germany	1
England	1	Japan	1
France	1	Peoples R China	1

These 125 publications have received 2112 citations in this period with an average impact factor of 16.9. This shows that these publications had considerable influence in the growth of science in catalysis in the world.

This prompted us to analyze Dr Paul Ratnasamy's contribution to the knowledge domain in the field of catalysis. Even though, this analysis can be carried out at various levels like ranking the documents, journals and authors of a knowledge domain, we have preferred to analyze the data on hand (that is the 125 publications of Dr Paul Ratnasamy and the citations to these 125 publications) from the point of view of the connectivity. These have been presented in the form of two figures in Figs 1 and 2 which represent the local citation and global citation score and their interconnectivity.

These two figures denote the local citation score and global citation score. The Local citation score is from the data collection that has been made, while the global citation score denotes from the outside domain of the data collected. The data for the top 30 LCS and GCS are given in Table 5 and 6.

The following points emerge from these two histo-graphs shown in Figs 1 and 2. In the case of Local citation score, the key papers seem to be authored by Paul with Thangaraj Sivasanker and R Kumar in the National Chemical Laboratory. These papers have been fore runner for a few other papers from the same laboratory, and also for other publications from other laboratories. The paper by Thangaraj, A; Kumar R; Mirajkar SP; Ratnasamy, P has received the maximum number of citations of 195 and has paved the way for the publications of a number of other groups Notari et al (544, and 345 the numbers refer to the numbers given in the figure)as well as Millini etal. Dr Paul Ratnasamy and his group has been responsible for the widening the scope of this field in the period 1990-1995and this influence is clearly seen from the local citation score hidtograph shown in Fig.1.

The Global citation score diagram shown in Fig.2 also emphasizes the importance of these key publications since even outside the collection this paper has links to many other well cited papers (775) by Corma and others. It is clear, that the earlier publications of Dr Paul Ratnasamy have played a key role in the development of knowledge domain in this particular area.

Table 5 Top 30 entries for the local citation score of the data collection made for 125 publications and to the citations of this 125 publications.

Nodes: 30, Links: 63

LCS, top 30; Min: 48, Max: 195 (LCS scaled)

	LCS	GCS
1. 7 BABU GP, 1983, J CATAL, V81, P471	54	54
2. 39 KUSTOV LM, 1987, ZEOLITES, V7, P79	48	48
3. 53 HEDGE SG, 1988, ZEOLITES, V8, P137	78	78
4. 80 HEGDE SG, 1989, ZEOLITES, V9, P231	51	51
5. 157 RATNASAMY P, 1991, CATAL TODAY, V9, P329	118	118
6. 160 THANGARAJ A, 1991, J CATAL, V130, P1	195	194
7. 163 REDDY JS, 1991, J CATAL, V130, P440	71	108
8. 165 TUEL A, 1991, J MOL CATAL, V68, P45	60	93
9. 168 THANGARAJ A, 1991, J CATAL, V131, P294	102	102
10. 175 THANGARAJ A, 1991, J CATAL, V131, P394	77	77
11. 201 REDDY JS, 1992, J MOL CATAL, V71, P373	59	59
12. 219 CAMBLOR MA, 1992, J CHEM SOC CHEM COMMUN, P589	115	238
13. 222 SERRANO DP, 1992, J CHEM SOC CHEM COMMUN, P745	76	104
14. 234 RAO PRHP, 1992, J CATAL, V137, P225	81	81
15. 235 THANGARAJ A, 1992, J CATAL, V137, P252	55	55
16. 240 MILLINI R, 1992, J CATAL, V137, P497	78	137
17. 250 THANGARAJ A, 1992, ZEOLITES, V12, P943	78	78
18. 257 VANDERPOL AJHP, 1992, APPL CATAL A-GEN, V92, P113	64	115
19. 294 CAMBLOR MA, 1993, ZEOLITES, V13, P82	64	154
20. 302 CAMBLOR MA, 1993, J CHEM SOC CHEM COMMUN, P557	62	135
21. 314 RAO PRHP, 1993, J CATAL, V141, P595	56	56
22. 319 MARTENS JA, 1993, APPL CATAL A-GEN, V99, P71	52	87
23. 345 NOTARI B, 1993, CATAL TODAY, V18, P163	83	206
24. 349 BLASCO T, 1993, J AMER CHEM SOC, V115, P11806	63	182
25. 351 BELLUSSI G, 1994, STUD SURF SCI CATAL, V85, P177	83	192
26. 385 CORMA A, 1994, J CHEM SOC CHEM COMMUN, P147	102	490
27. 407 REDDY KM, 1994, J CHEM SOC CHEM COMMUN, P1059	58	282
28. 420 KHOUW CB, 1994, J CATAL, V149, P195	54	141
29. 520 BLASCO T, 1995, J CATAL, V156, P65	70	288
30. 544 Notari B, 1996, ADVAN CATAL, V41, P253	95	410

Table 6. Top 30 entries to the Global citation score for the data collection (both authored by and cited data of publications of Dr Paul Ratnasamy)

Nodes: 30, Links: 63

GCS, top 30; Min: 133, Max: 1587 (GCS scaled)

	LCS	GCS
1. 13 HAAG WO, 1984, NATURE, V309, P589	31	209
2. 105 REDDY JS, 1990, APPL CATAL, V58, PL1	0	198
3. 160 THANGARAJ A, 1991, J CATAL, V130, P1	195	194
4. 219 CAMBLOR MA, 1992, J CHEM SOC CHEM COMMUN, P589	115	238
5. 240 MILLINI R, 1992, J CATAL, V137, P497	78	137
6. 244 ZECCHINA A, 1992, J CHEM SOC FARADAY TRANS, V88, P2959	17	181
7. 291 TEUNISSEN EH, 1993, J PHYS CHEM, V97, P203	6	135
8. 294 CAMBLOR MA, 1993, ZEOLITES, V13, P82	64	154
9. 302 CAMBLOR MA, 1993, J CHEM SOC CHEM COMMUN, P557	62	135
10. 343 SCARANO D, 1993, J CHEM SOC FARADAY TRANS, V89, P4123	36	138
11. 345 NOTARI B, 1993, CATAL TODAY, V18, P163	83	206
12. 349 BLASCO T, 1993, J AMER CHEM SOC, V115, P11806	63	182
13. 351 BELLUSSI G, 1994, STUD SURF SCI CATAL, V85, P177	83	192
14. 385 CORMA A, 1994, J CHEM SOC CHEM COMMUN, P147	102	490
15. 403 KIRICSI I, 1994, J PHYS CHEM, V98, P4627	19	159
16. 407 REDDY KM, 1994, J CHEM SOC CHEM COMMUN, P1059	58	282
17. 420 KHOUW CB, 1994, J CATAL, V149, P195	54	141
18. 520 BLASCO T, 1995, J CATAL, V156, P65	70	288
19. 544 Notari B, 1996, ADVAN CATAL, V41, P253	95	410
20. 567 Morey M, 1996, CHEM MATER, V8, P486	24	170
21. 569 Bordiga S, 1996, J CATAL, V158, P486	41	218
22. 622 Sayari A, 1996, CHEM MATER, V8, P1840	31	498
23. 760 Arends IWCE, 1997, ANGEW CHEM INT ED, V36, P1144	33	177
24. 775 Corma A, 1997, CHEM REV, V97, P2373	46	1587
25. 876 Panov GI, 1998, CATAL TODAY, V41, P365	19	221
26. 892 Sheldon RA, 1998, ACCOUNT CHEM RES, V31, P485	24	258
27. 974 Thomas JM, 1999, NATURE, V398, P227	27	156
28. 1000 Gao XT, 1999, CATAL TODAY, V51, P233	17	171
29. 1352 De Vos DE, 2002, CHEM REV, V102, P3615	13	206
30. 1405 Weckhuysen BM, 2003, CATAL TODAY, V78, P25	1	133

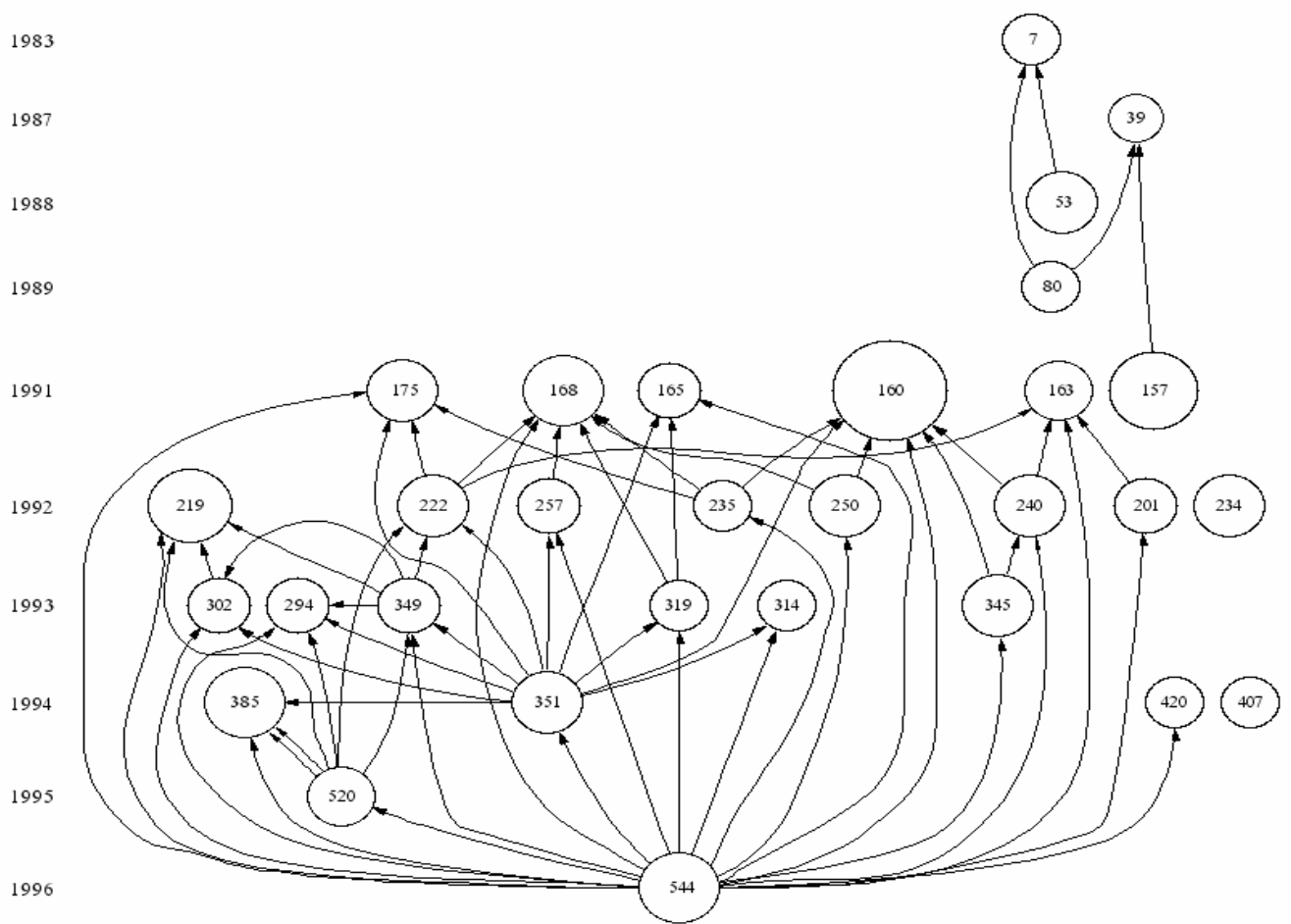


Fig.1 The connectivity diagram for Paul Ratnasamy based on Local citation score.

