Scientometric Dimensions of Knowledge Management Research in India: A Study based on Scopus database

Article *in* Sri Lankan Journal of Librarianship and Information Management · March 2009

DOI: 10.4038/sllim.v2i2.442

2 authors, including:

SRINIVASA RAGAVAN SUPPURAJ
Bharathidasan University
59 PUBLICATIONS **151** CITATIONS

SEE PROFILE

Scientometric Dimensions of Knowledge Management Research in India: A Study based on Scopus database

Surulinathi M*
surulinathi@gmail.com
Amsaveni N*
veni032002@gmail.com
Maheswaran K*
karuppiah.maheswaran@gmail.com
S.Srinivasaraghavan**
maduraiseenoo@yahoo.co.in

Abstract

This paper attempts to analyse quantitatively the growth and development of Knowledge Management Research in India in terms of publication output as reflected in Scopus database. During 1999-2007 a total of 51 papers were published by the Knowledge Management researchers to various domains: Business, Management and Accounting (24), Engineering (18), Social Sciences (7), Computer Science (6), Decision Sciences (6), Multidisciplinary (4), Mathematics (3), Environmental Science (2), Agricultural and Biological Sciences (1), Earth and Planetary Sciences (1), Economics, Econometrics and Finance (1), Materials Science (1). Year-wise growth of publications and input of records to Scopus database by India is analyzed. More than 80 percent of publications were published in journals. The most preferred journals were International Journal of Information Technology and Management (7), Journal of Scientific and Industrial Research (4), Electronic Library (2), Human Systems Management (2), Journal of Knowledge Management (2), International Journal of Technology Management (2), International Conference on Information and Knowledge Management Proceedings (2), Proceedings Frontiers in Education Conference (2), others journals each (1). There were as many as 24 (47.06) papers contributed by single author. There were five authors contributions is zero and more than 5 authors contribution is less than 1(1.96). The publication behavior indicates that the Knowledge management researchers were lowly selective in publishing.

KEYWORDS: Knowledge Management in India; Mind Map; Scientometric analysis; Authorship pattern; Subject Domain; Free mind Knowledge Mapping Software

---

* Ph.D Research Scholars, DLIS, Annamalai University, Chidambaram-2
** Bharathidasan University, Tiruchirappalli, India

Introduction

Scientometrics the branch science of science that describes the output traits in terms of organizational research structure, resource inputs and outputs, develops benchmarks to evaluate the quality of information output. Scientometric studies characterize the disciplines using the growth pattern and other attributes. These studies have potential particularly in assessing the emerging disciplines. In the present study, we did the scientometric mapping of knowledge management, a significantly growing area in the knowledge-driven world.

Mind mapping software helps to get beyond the limitations of thinking. The ability to arrange information from many sources in a logical order has become the most important factor for survival in this modern informational world. However, the brain has the ability to process visual information much more efficiently. The old linear pattern of thinking by reading and describing from left to right, top to bottom has many problems in organizing information coming from eyes, ears, etc. Therefore, the most essential, but also limited, ability to receive information and express your thoughts is to make a habit of extracting essential words and analyzing their co-relation.

New technologies have changed the way organizations view and use knowledge. Information can now be collected, analyzed and distributed in ways not previously possible. Databases help to collect, store, and filter and make sense of this information. Groupware allows communities of practice to grow beyond the limits of time and place. Network makes it possible to disseminate information to millions simultaneously. Electronic Performance Support Systems (EPSS) can be used to support cognitive skills and provide technical expertise.

However, it is not just the technology alone that is driving the excitement around Knowledge Management. Knowledge Management is exciting because it makes sense to executives. They know that there are rich resources nestled in the minds and hearts of their organizations. They want access to those resources and to hold onto them as the organization. Knowledge Management is planning, designing, building, operating and maintaining the knowledge management system. Knowledge management is managing the knowledge of

- Information in Document
  - -Sounds
  - -Images and
  - -Text
- Knowledge in People Heads
  - -Collaboration
  - -Storytelling
  - -Community of Practice
  - -Mind mapping
- Organizational Memory
  - -Knowledge Re-use
  - -Community of Practice
  - -Lesson Learning
- Conversion of Information to Knowledge
  - -Logical intelligence
  - -Collaborative Intelligence
  - -Sensory Experience
  - -Intuition

-Technology Experience

- Learning Methods
  - -Discovery Learning
  - -Constructivist Learning
  - -Task-based Learning
  - -Goal-based Learning

Knowledge management is, to a certain extent, the logical next step in a sequence of societal developments that has already been going on for a very long time. The likely future of knowledge management is explored along four perspectives: the management practices perspective, the information technology perspective, the organizational efforts perspective and the development, supply and adoption rate perspective [Wiig, 1997].

Thus, mapping of knowledge management has potential and enable the users to get an understanding the structure of it.

Scope and Methodology

The present study attempts to find out the publication pattern of Indian researchers in the field of knowledge management. The study is based on the references and aims to analyse quantitatively the growth and development of Knowledge Management in India in terms of publication output as reflected in Scopus database during years, 1999-2007. Scopus is the largest abstract and citation database of research literature and quality web-only journals. It's designed to enable not only the researchers for accessing scientific information but provide the information scientists to study the literature for different information analyses purposes. Quick, easy and comprehensive, Scopus provides superior support of the literature research process.

Objectives of the Study

The main objective of the study is to present the growth of literature and make the quantitative assessment of status of Knowledge management research in India by analyzing the various features. The specific objectives are -

- To measure the year-wise growth of publications in terms of input of records in Scopus database.
- To measure the domain-wise contributions
- To measure the authorship pattern in the publications
- To measure the Source of publications
- To measure the format of publications

Method

The records were downloaded from the online Scopus for the studied period. The records then were exported in to the basic dataset created for the study. Any scientometric mapping exercise requires a customized database structure so that analytical processing can be executed.

Results and Discussion

Author-wise Distribution

Authorship pattern among Knowledge Management researchers is given in the Table 1 and Figure 1. Single authored papers contributions are high 24(47.06%). Two authored papers account for 16(31.37%) followed by three authored papers 7(13.73%), four authored papers 3(5.88%) and five-authored paper is nil and more than five authors paper is 1(1.96%). The author, Bowonder B has occupied the first rank in publications. It can be clearly visualized from the below Table 1 and Figure 1.

Figure 1 – Author-wise distribution

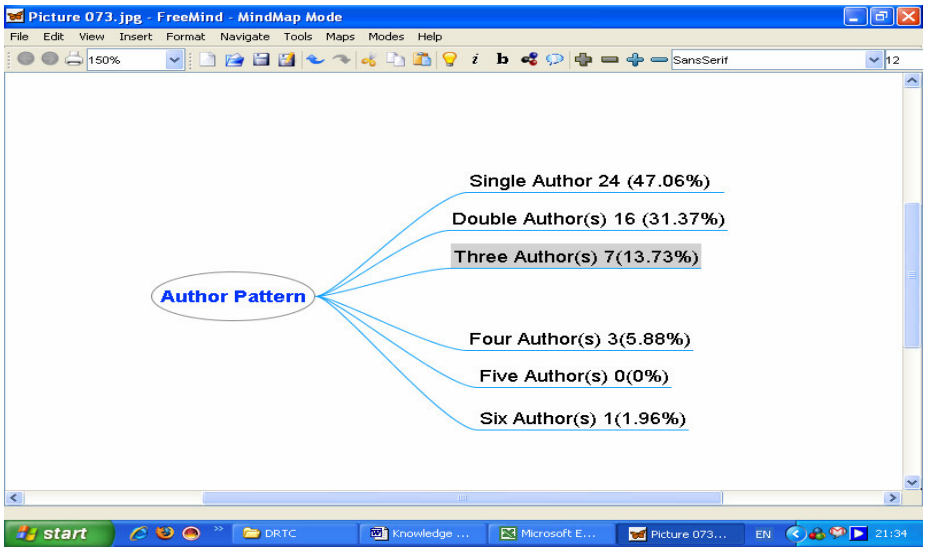

Table 1 - Author-wise distribution

Author wise Pattern	No of Records	Percentage	Cumulative	Cumulative Percentage
Single Author	24	47.06	24	47.06
Double Author**(s)**	16	31.37	40	78.43
Three Author**(s)**	7	13.73	47	92.16
Four Author**(s)**	3	5.88	50	98.04
Five Author**(s)**	0	0.00	50	98.04
Six Author**(s)**	1	1.96	51	**100.00**
Total	**51**	**100.00**	**51**	

Year-wise Distribution

During the 7 years period (1999–2007) India has produced a total of 51 publications. The highest number of publications was 11 in 2000. The average number of publications per year was 7.29. The lowest number of publication was 1 in 1999 because it was the first period of coverage of records (Table 2 and Figure 2). In 2007 also, the publication is very low because of the incomplete coverage and one can expect that the year 2007 may witness high productivity.

Figure 2 – Year-wise distribution

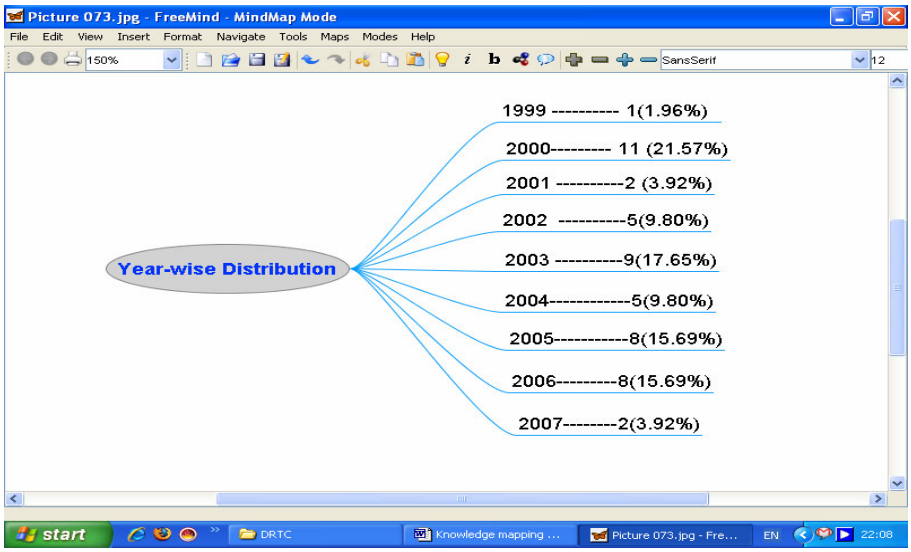

Table 2 – Year-wise distribution

Year	No of Records	Percentage
1999	1	1.96
2000	11	21.57
2001	2	3.92
2002	5	9.80
2003	9	17.65
2004	5	9.80
2005	8	15.69
2006	8	15.69
2007	2	3.92
	Total	**10.00**

Document Type-wise Distribution

During the 7 years period (1999–2007) India has produced a total of 51 publications. The highest number of publications were 41(80.39%) Journal articles and other publications were (10) (19.61%) reviews (Figure 3 and Table 3)

Figure 3 - Document Type-wise Distribution

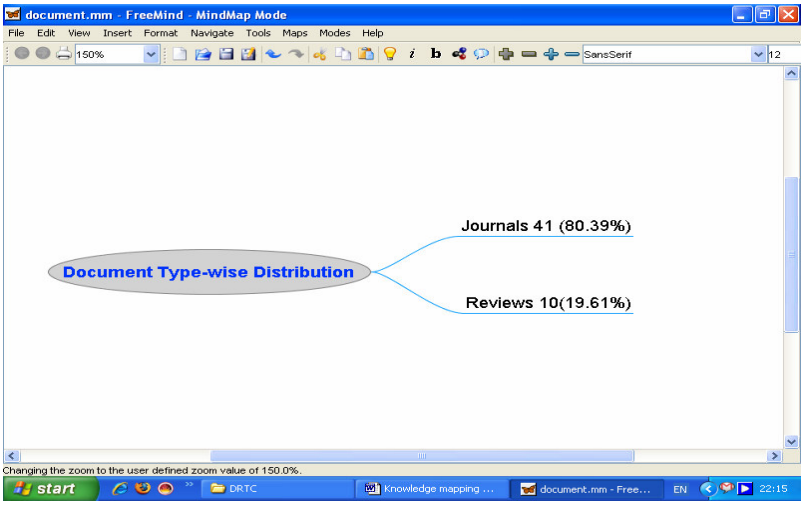

Table 3 - Document Type-wise Distribution

Document Type	No of Records	Percentage
Article (41)	41	80.39
Review (10)	10	19.61
Total	**51**	**100.00**

Subject Area-wise or Domain-wise Distribution

During 7 years period (1999–2007) India has produced a total of 51 publications have contributed significantly to the following main domains which have been broadly grouped as:

- Business, Management and Accounting
- Engineering
- Social Sciences
- Computer Science
- Decision Sciences
- Multidisciplinary
- Mathematics
- Environmental Science
- Agricultural and Biological Sciences
- Earth and Planetary Sciences
- Economics, Econometrics and Finance

- Materials Science

There were 24 (32.43%) publications in 'Business, Management and Accounting' domain followed by 18 (24.32%) in 'Engineering', 7 (9.46%) publications in 'Social Sciences', 6 (8.11%) publications in 'Computer Science and Decision Science', 4 (5.41%) publications in 'Multidisciplinary', 3(4.05%) publications in 'mathematics', 2(2.70%) publications in Environmental Science and 1(1.35%) publication in 'Agricultural and Biological Sciences, Economics, Econometrics and Finance, and Materials Science'. Year-wise growth of publications in each domain is given below in Figure 4 and Table 4.

Figure 4 - Year-wise growth of publications

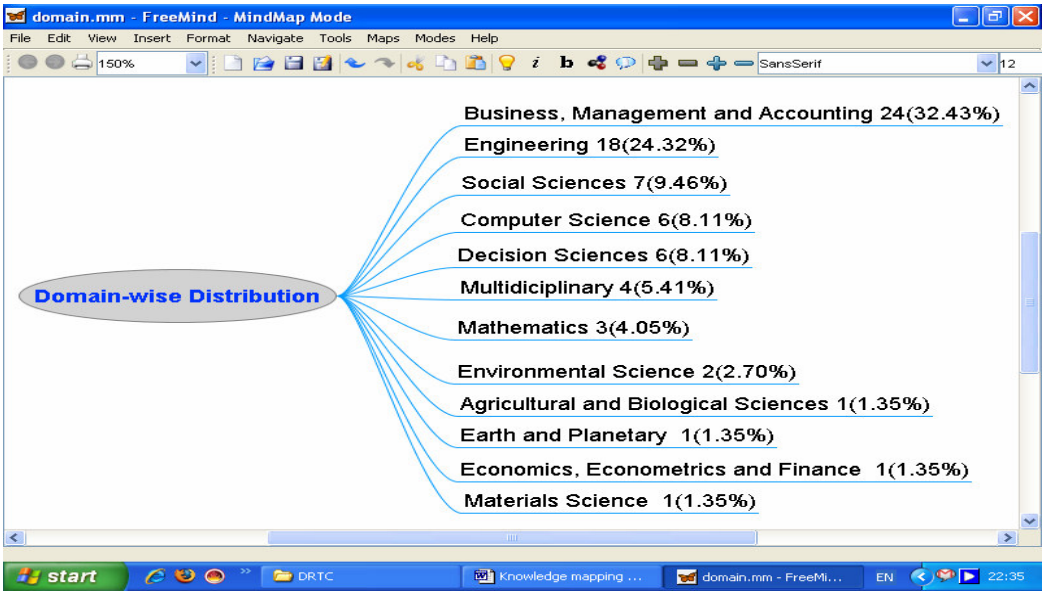

Table 4 - Year-wise growth of publications

Subject Area	No of Records	Percentage
Business, Management and Accounting	24	32.43
Engineering	18	24.32
Social Sciences	7	9.46
Computer Science	6	8.11
Decision Sciences	6	8.11
Multidisciplinary	4	5.41
Mathematics	3	4.05
Environmental Science	2	2.70
Agricultural and Biological Sciences	1	1.35
Earth and Planetary Sciences	1	1.35
Economics, Econometrics and Finance	1	1.35
Materials Science	1	1.35
Total	**74**	**100.00**

Source-wise Distribution in the publications

During the 7 years period (1999–2007), India has produced a total of 51 publications. More than 41(80.39%) the Knowledge Management research was published in journals and the rest was in reviews 10 (19.61%). The highest number of publications was 7(13.73%) in International Journal of Information Technology and Management journal and 4(7.84%) followed by Journal of Scientific and Industrial Research and other journals having less than 2 publications.

Figure 5 - Source-wise Distribution

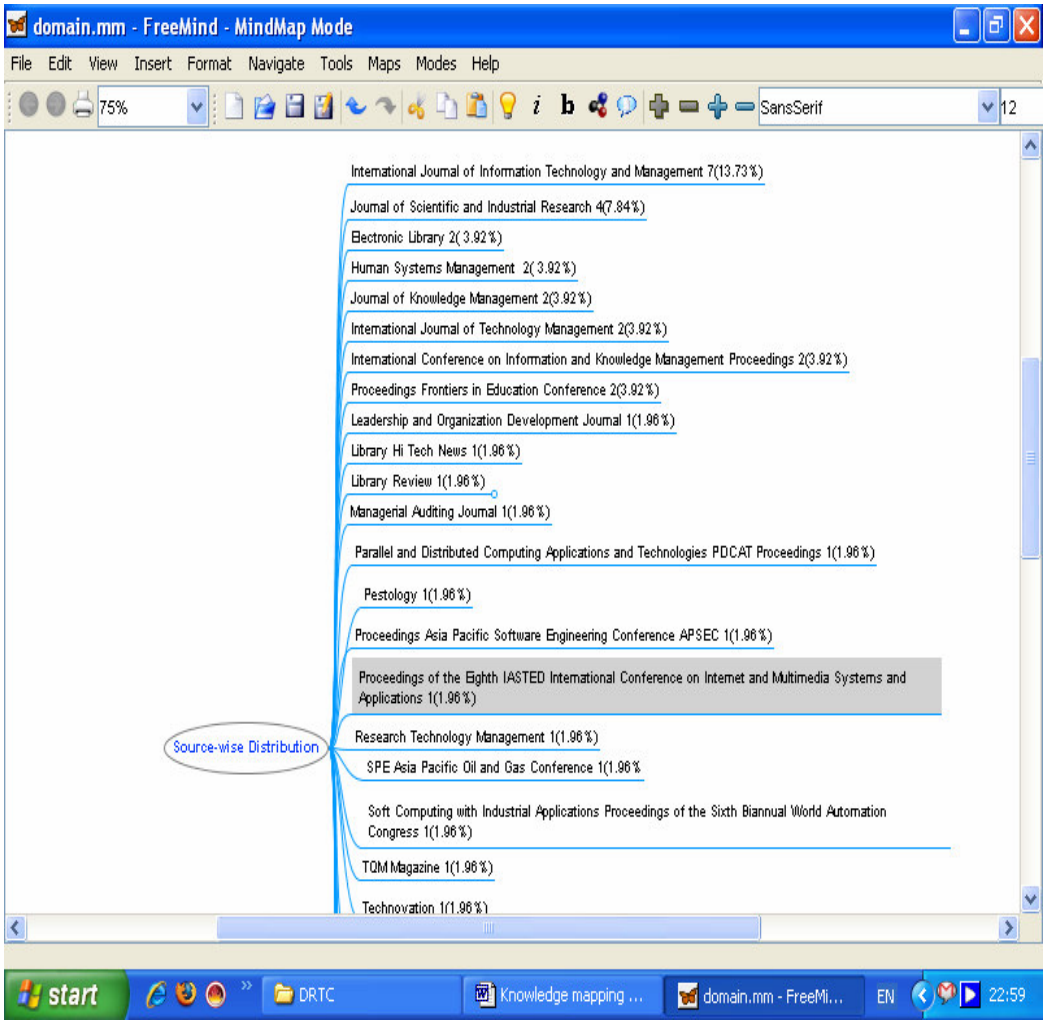

Table 5 - Source-wise Distribution

Source Title	No of Records	Percentage
International Journal of Information Technology and Management (7)	7	13.73
Journal of Scientific and Industrial Research (4)	4	7.84
Electronic Library (2)	2	3.92
Human Systems Management (2)	2	3.92
Journal of Knowledge Management (2)	2	3.92
International Journal of Technology Management (2)	2	3.92
International Conference on Information and Knowledge Management Proceedings (2)	2	3.92
Proceedings Frontiers in Education Conference (2)	2	3.92
Leadership and Organization Development Journal (1)	1	1.96
Library Hi Tech News (1)	1	1.96
Library Review (1)	1	1.96
Managerial Auditing Journal (1)	1	1.96
Parallel and Distributed Computing Applications and Technologies PDCAT Proceedings (1)	1	1.96
Pestology (1)	1	1.96
Proceedings Asia Pacific Software Engineering Conference APSEC (1)	1	1.96
Proceedings of the 8th IASTED Inter. Conf. on Internet and Multimedia Systems and Applications (1)	1	1.96
Research Technology Management (1)	1	1.96
SPE Asia Pacific Oil and Gas Conference (1)	1	1.96
Soft Computing with Industrial Applications Proceedings of the Sixth Biannual World Automation Congress (1)	1	1.96
TQM Magazine (1)	1	1.96
Technovation (1)	1	1.96
Knowledge and Information Systems (1)	1	1.96
Journal of the Textile Association (1)	1	1.96
Journal of Modern Applied Statistical Methods (1)	1	1.96
Journal of Biological Systems (1)	1	1.96
International Jrl of Operations and Production Mgmt (1)	1	1.96
International Journal of Manufacturing Tech. and Mgmt(1)	1	1.96
International Journal of Information Management (1)	1	1.96
International Jrl. of Globalisation and Small Business (1)	1	1.96
International Journal of Business Performance Mgmt (1)	1	1.96
Information Technology Journal (1)	1	1.96
Information Systems Management (1)	1	1.96
IETE Technical Review Institution of Electronics and Telecommunication Engineers India (1)	1	1.96
IEEE Software (1)	1	1.96
Electronics Information and Planning (1)	1	1.96
Annals of Cases on Information Technology (1)	1	1.96
Total	**51**	**100.00**

Conclusion

This paper has highlighted quantitatively the contributions made by the Indian Knowledge Management researchers during 1999-2007 as reflected in Scopus database. During 7 years period (1999 –2007) Indian contributions in terms of number of publications is not significant. A comparison of Indian output in relation to the world output may help in understanding the contribution in a better angle. Though the records available in the Scopus database reveal a small number, it is important that the Scopus covers only the peer-reviewed journals. If a broader coverage database is available, it may provide a reasonable number of papers. We suggest for tracking citation record of papers so that the impact of publications in knowledge management may be visible.

Reference

- Kademani, B.S. et al.(1994). Scientometric portrait of Noble Laureate Dr. C. V. Raman. *Indian Journal of Information Library and Society* 37(4),pp.215-49.(URL http://www.springerlink.com/content/892766tg4j133086/fulltext.pdf) Accessed on 26.7.2006.
- B. S. Kademani, Vijai Kumar, Anil Sagar and Anil Kumar. (2002) Scientometric Dimensions of Nuclear Science and Technology Research In India: A Study based on INIS (1970-2002) Database, *Malaysian Journal of Library & Information Science* 11(1): pp. 23-48. (URL http://eprints.rclis.org/archive/00007485/01/INIS_MJLIS_Final_18_10_2006.pdf) Accessed on 20.10.2006.
- http://www.mindmapperusa.com/features.htm
- http://www.scopus.com

Appendix 1

Ranking of Individual Author

Author(s)	No of Records	Ranking
Bowonder, B. (3)	3	1
Adak, S. (2)	2	2
Miyake, T. (2)	2	2
Rastogi, P.N. (2)	2	2
Mohanty, R.P. (2)	2	2
Saxena, A. (1)	1	3
Satish, N.G. (1)	1	3
Roy, P. (1)	1	3
Ramasubramanian, S. (1)	1	3
Raman, S. (1)	1	3
Ramamritham, K. (1)	1	3
Ramachandran, S. (1)	1	3
Rajan, Y.S. (1)	1	3
Prahlada, (1)	1	3
Prabhakar, T.V. (1)	1	3
Pillania, R.K. (1)	1	3
Pandey, S.K. (1)	1	3
Narain, R. (1)	1	3
Murthy, P.N. (1)	1	3
Mohania, M. (1)	1	3
Misra, D.C. (1)	1	3
Mishra, R.B. (1)	1	3
Metri, B.A. (1)	1	3
Yegneshwar, S. (1)	1	3
Yadav, S. (1)	1	3
Wasan, S.K. (1)	1	3
Wadhwa, S. (1)	1	3
Vanapalli, G.K. (1)	1	3
Thangavel, K. (1)	1	3
Tanweer, A. (1)	1	3
Suresh, J.K. (1)	1	3
Sukula, S.K. (1)	1	3
Subramanian, K. (1)	1	3
Srivatsa, S.K. (1)	1	3
Srivastava, S.K. (1)	1	3
Srivastava, B. (1)	1	3
Sridhar, V. (1)	1	3
So, J.C.F. (1)	1	3
Sinha, M. (1)	1	3
Singh, S.P. (1)	1	3
Singh, M.D. (1)	1	3
Sharma, S. (1)	1	3
Shankar, R. (1)	1	3
Saxena, A. (1)	1	3
Girija, N. (1)	1	3
Duddukuri, R. (1)	1	3
Desouza, K.C. (1)	1	3
Deshmukh, S.G. (1)	1	3
Deka, M. (1)	1	3

Dayasindhu, N. (1)	1	3
Datta, A. (1)	1	3
Choudhury, S.R. (1)	1	3
Chandrakar, R. (1)	1	3
Chandra, H. (1)	1	3
Bolloju, N. (1)	1	3
Bhunia, C.T. (1)	1	3
Bhatnagar, V. (1)	1	3
Bhatnagar, G. (1)	1	3
Bhatia, S. (1)	1	3
Bhardwaj, K.K. (1)	1	3
Bhardwaj, D.N. (1)	1	3
Batra, V.S. (1)	1	3
Bamba, B. (1)	1	3
Antony, J. (1)	1	3
Ananpara, A. (1)	1	3
Manjunath, U. (1)	1	3
Mahapatra, T. (1)	1	3
Mahanti, R. (1)	1	3
Lakshman, C. (1)	1	3
Kurnekar, M.P. (1)	1	3
Kumar, P. (1)	1	3
Kumar, D.A. (1)	1	3
Kumar, B.S. (1)	1	3
Kumar, A. (1)	1	3
Kumar, A. (1)	1	3
Kochikar, V.P. (1)	1	3
Kochikar, V.P. (1)	1	3
Khaneja, M. (1)	1	3
Kankar, P. (1)	1	3
Kammanahalli, H. (1)	1	3
Kamesam, P.V. (1)	1	3
Jagadeesan, G. (1)	1	3
Hariharan, R. (1)	1	3
Hanchate, S. (1)	1	3
Haas, R. (1)	1	3
Gupta, S.K. (1)	1	3
Gopalan, S. (1)	1	3