



Mapping of Research Literature Crystal Growth in India: A Citation Analysis

KEYWORDS

Scientometric study, Crystal growth, Crystal, Bibliometrics study, Citation Analysis

Dr. S. Raja

Asst. Librarian, AUCB Public Library, Alagappa University, Karaikudi, Tamilnadu, India

Dr. S.Kishore Kumar

Asst. Librarian, Central Library, Alagappa University, Karaikudi, Tamilnadu, India

ABSTRACT *The present study pointing out of analyzing the research output performance of crystal growth in India. During 2005-2012 a total of 731 papers were published by the scientists in the field of crystal growth research. The average Number of Publications produced per year was 91.37. The highest number of publications 144 was produced in 2008. The most productive author is Ramasamy P with 102 (14%) and Bhagavannarayana G 72 (9.8%) papers dealing with crystal growth of all papers published in this research field. The highest number of publication is at india 729(39.9%) and lowest number of publication is at Uzbekistan 1(0.1%). The most cited reference is Kurtz Sk, 1968, J Appl Phys, V39, P3798, Doi 10.1063/1.1656857 with 257(35.2%) papers dealing with crystal growth.*

INTRODUCTION

In academic and scientific work, publication means of communicating research, primarily of recognition and reward and central social process in the Universities. Hence publication is a social norm in a public sense and serves as a tool for the betterment of the individuals. After the publication, it can be called as research and can be fixed or judged and acknowledged by the scientists in the society. The analysis of the review of literature is the key focus of any research. It enables to be aware of the past and current trends in any particular branch of research. Research on Scientometric study is the performance on crystal growth as attracted the attention of various scholars, researchers, information scientists and library personals throughout the world.

PURPOSE OF THE STUDY

The present citation study is to understand the information and communication channels, in one of the multidisciplinary subject of crystal growth published in articles from Journals; authors form book and papers from Conference Proceedings in 8 years that is from 2005 to 2012

To examine the utility of tertiary sources like handbooks.

SCOPE OF THE STUDY

The study is to find out the information about the recent communication trends in the advancement of the field of Multidisciplinary subject a citation analysis "crystal growth" and for this purpose, the study is based on articles in journals, authors published the books and papers published in conference proceedings published on crystal growth subject from 2005 to 2012 Using statistical techniques like histogram charts, bar charts etc, these will be used to interpret the data. More about this is described in

LIMITATIONS OF THE STUDY

- The study undertaken is limited to 8 years, i.e. 2005-2012.
- It is a small scale study, which may need to be indicated by the states.
- Here we did Citation analysis of tertiary source of information
- In this study we did not include the citation analysis on patents.

METHODOLOGY

- The study entitled " Research Productivity of Crystal Growth in India: A Citation Analysis (During 2005 - 2012)" is a case study encompassing records output on web of science web site

- The aim of the present study is analyze the research output of crystal growth in the field of Science and Technology.
- The authorship pattern and author productivity are examined to identify the pattern of research contribution in the field of science.
- The study is mainly exploratory in nature in identifying research output of crystal growth and it is also analyze in nature in strengthening the empirical validity due to application of suitable statistical tools.

DATA COLLECTION

The publications of crystal growth are mostly in the form of primary Journals, Notes", Letters, reviews, Editorial-materials, Meeting-abstracts, Bibliographic-items and Discussions. The research papers published by web of science in the field of Science and Technology covered and index database were taken as the prime source for the present study. The bibliographical details of publications were entered in the catalogue cards. Finally the cards were arranged in different ways with a view to identify the research performance of faculty Members.

RESULT AND DISCUSSION

Authorship Pattern

Lotka's Law, an inverse, square law, is used to find authors productivity patterns. It states that India 58.62 percents of articles were from single authors, followed by 16.12% authors by double authors etc. 25.26 percents of multi-authored were Indian contributes in this field of crystal growth. The results depict that majority of papers are single authored. It clearly brings out collaborative research in the field It clearly brings out multi investigation is high compare than individual research in the field of crystal growth.

Author's wise document distribution

The most productive author is Ramasamy P with 102 (14%) papers dealing with crystal growth and TLCS 293 TGCS 656 and TLCR 207 of all papers published in this research field. Bhagavannarayana G 72 (9.8%), TLCS 131 TGCS 319 and TLCR 202 appear on rank 2, respectively. It can be clearly visualized from the below table.

Journal wise document distribution

The most productive Journal is Journal of Crystal Growth with 169 papers dealing with crystal growth and 23.1%, TCLS 360, TGCS 1049, TLCR 255 of all papers published in this research field. Crystal research and technology 87, appear on rank 2 (11.9%), TCLS 197 TGCS 517, TLCR 81 respectively.

Word wise distribution of Documents

The high frequency keywords will enable us to understand the various aspects of crystal growth under study. The high frequency keywords were: Growth 731 (TCLS 1102, TGCS 3170), Crystal 401 (TCLS 629, TGCS 1834), Characterization 371 (TCLS 587, TGCS 1563) and Crystals 362 (TCLS504, TGCS 1425). Analysis of the keywords appeared either on the title or assigned by the indexer or the author himself will help in knowing in which direction the knowledge grows.

Year wise distribution of documents

During 2005 - 2012 a total of 731 publications were published in crystal growth by India. The average Number of Publications produced per year was 91.37%. The highest number of publications 144 was produced in 2008. It can be clearly visualized from growth of the literature was very low during 2005. It Indicate that research in crystal growth received a major impetus this period.

Source wise distribution documents

Crystal growth Scientists communicated their research results through a variety of communication channels. It was observed that 92.6 percent of the literature was published in Article followed by 6.0 percent in Proceedings Paper, 0.5 percent in Review, 0.4 percent in Correction, each 0.1 percent in Editorial Material, Letter and Meeting Abstract.

Institution wise distribution documents

There were 379 institutions involved in research activity in the field of crystal growth. Anna University topped the list with 138 publications (18.9 %, TLCS 296, TGCS 759) followed by SSN College of Engineering with 97 publications (13.3 %, TLCS 202, TGCS 438), respectively.

Institution with subdivision wise distribution documents

There were 563 institutions with subdivision involved in research activity in the field of crystal growth. Anna University, Center Crystal Growth topped the list with 97 publications (13.3 %, TLCS 225, TGCS 542) followed Loyola College, Department of Physics with 82 publications (11.2 %, TLCS 173, TGCS 417), respectively.

Country wise documents distribution

There were as many as 24 countries carrying out research in the field of crystal growth. India is top producing country with 729 publications (99.7%, TLCS 1097, TGCS 3157) followed by USA with 14 publications (1.9%, TLCS 12, TGCS 48), Japan with 12 Publications (1.6%, TLCS 3, TGCS 36), respectively.

Cited reference wise documents distribution

The most cited reference is Kurtz Sk, 1968, J Appl Phys, V39, P3798, Doi 10.1063/1.1656857 with 257 papers dealing with crystal growth and each 35.2% of all papers published in this research field. appear on rank 2 & 3 Lal K, 1989, J Appl Crystallogr, V22, P209, Doi and Bhagavannarayana G, 2005, J Appl Crystallogr, V38, P768, Doi 10.1107/S0021889805023745 respectively.

CONCLUSION

The results depict that majority of papers are single authored. The most productive author is "Ramasamy P" with 102 (14%) TLCS 293 TGCS 656 and TLCR 207 of all papers published in this research field. The most productive Journal is "Journal of Crystal Growth" with 169 (23.1%, TLCS 360, TGCS 1049, TLCR 255) papers dealing with crystal growth. The high frequency keywords were: Growth 731 (TCLS 1102, TGCS 3170). The average Number of Publications produced per year was 91.37 Papers. The highest number of publications 144 was produced in 2008. It was observed that 92.6 percent of the literature was published in "Article". "Anna University" topped the list with 138 publications (18.9 %, TLCS 296, TGCS 759). "India" is top producing country with 729 publications (99.7%, TLCS 1097, TGCS 3157). The most cited reference is Kurtz Sk, 1968, J Appl Phys, V39, P3798, Doi 10.1063/1.1656857 with 257 papers dealing with crystal growth and 35.2% of all papers published in this research field.

REFERENCE

- [1] Raja, S and P. Ram Kumar, "Scientometric Study of Nuclear Crisis (1970 - 2011)" Indian Journal of Information Sources and Services 2(1) 10-15. | [2] Raja, S. and Balasubramani, R. "Scientometric Study of the Research Publication on Malaria 2003-2007: A Global Perspective": International Research Journal of Library, Information and Archival Studies 1(1) 114-125. | [3] Raja, S. and Balasubramani, R. "Plasmodium Falciparum Research Publication in India: A Scientometric Analysis" European Journal of Scientific Research 56 (3) 294-300. | [4] Raja, S., Ramkumar, P. and Viji, P. "Scientometric dimension on gender in worldwide thyroid cancer: A study based on web of science database": Indian Journal of Science and Technology 4(4) 425- | [5] Balasubramani, R., Surulnathi, M and Raja, S. "An Evaluative study of Wi-Fi Communication Research Publications: A Scientometric Study", SALIS Journal of Information Management Technology 1(1) 32- 40 | [6] Balasubramani, R., Parameswaran and Raja, S. "Scientometric Dimension on Osteoporosis in India": Journal of the Young Librarians Association 2(1) 72-82 |