Summer 5-2020

# Scholarly Research Output of Kumaraguru College of Technology, Coimbatore: Scientometric Analysis

Arumugam J
*PSG College of Technology*, jacs1986tvl@gmail.com

Balasubramani R
*Bharathidasan University*, lisbala@gmail.com

# Scholarly Research Output of Kumaraguru College of Technology, Coimbatore: Scientometric Analysis

**J Arumugam[1], R Balasubramani[2]**

[1]Research Scholar, Department of Library and Information Science, Bharathidasan University, Trichy
Librarian, PSG College of Technology, Coimbatore

[2]Assistant Professor, Department of Library and Information Science, Bharathidasan University, Trichy

**Abstract**

Scientometrics analysis the quantitative as well as the qualitative aspects of scientific parameters for better understanding of the mechanism of research activities. The paper attempts to present a quantitative and qualitative analysis of the publication output of Kumaraguru College of Technology, Coimbatore. Data have been collected from the Scopus database for the period 1997 to 2020. Among the 2110 papers published in the span of 24 years, the highest numbers of 404 papers were published in 2018 and 2019. 1792 papers (85.3%) were published during the last ten years from 2011 to 2020. Journal is the most preferred channel of publication with 1665 papers. This study reveals that Kumaraguru College of Technology has largely contributed to research in Science, Engineering and Technology and the publication output of faculty has increased considerably during the recent years.

**Keywords:-** Scientometrics, Authorship Pattern, Annual Growth Rate, Kumaraguru College of Technology

## INTRODUCTION

Scientific productivity can be accessed through Scientometrics which is concerned with analyzing the activities of science, technology and innovation. It has been used to evaluate the research performance of the researchers and various developments in Science and Technology. This paper measured the quantitative data such as number of publications, authorship pattern, relative growth rate, collaborative institution, associative country, document type, subject and number of citations. This study also identifies the predominant source of publications by the faculty and funding sponsors for the research work. In this study, an attempt has been made to study the research output of the faculty of Kumaraguru College of Technology, Coimbatore.

## ABOUT THE COLLEGE

Kumaraguru College of Technology is an autonomous, self-financing engineering college, affiliated to Anna University. It was started in 1984, with the mission of providing aspiring students of technical education, a challenging learning environment. Over the last three decades, several new programmes have been introduced and the institution has emerged as a trusted destination for quality technical education and as a hub for research and innovation. The college is ISO certified and is accredited by NAAC. Several programmes offered by Kumaraguru College of Technology are accredited by NBA. In addition to a host of engineering and allied engineering courses, has also gained recognition for its uniquely tailored management education programmes. This is one of the pioneer engineering college focusing on quality publication, research and innovations.

## REVIEW OF LITERATURE

Vasistha (2011) has reported the research publication output of PEC University of Technology, Chandigarh and found that there is a increase in the output by 131.85% between 1996 and 2009. Savanur and Konnur (2012) have studied the research output of Bangalore University in the period of 1970 to 2010 and found that the growth rate of publications was highest during 1996 and 2000. and gradual decrease found after 2001. Maharana and Sethi have studied the publication output of Sambalpur University during 2007-2011 and analysed the various scientific parameters of the institution. Arumugam et.al (2019) analysed the Scholarly Research Output of Indian Institute of Management (IIMs) in India and found that significant contribution from the faculty of IIM Ahmedabad with 85.3% publications.

## OBJECTIVES

The objectives of the study is to perform the scientific analysis of Kumaraguru College of Technology, Coimbatore.

- ❖To examine the research productivity of the institution
- ❖To find out the year-wise scholarly output, relative growth rate and Doubling time.
- ❖ To identify the subject domain that has more research productivity.
- ❖To examine the most productive authors, and authorship pattern.
- ❖To analyze the type of publications document preferred by the academics.

- ❖To identify research collaboration of Kumaraguru College of Technology with other countries and institutions.
- ❖To identify the predominant source of publications
- ❖To examine the citations received by publications.

**HYPOTHESES**

The following hypotheses will be formulated for this study based on the stated objectives.

- ❖There exists substantial research productivity among the academics of Kumaraguru College of Technology.
- ❖There exists the domination of collaborative research among Kumaraguru College of Technology
- ❖Journals are the major source of publications in Kumaraguru College of Technology
- ❖There exists steady growth in publication production among academics of Kumaraguru College of Technology

**METHODOLOGY**

For this study, the literature on publication output of Kumaraguru College of Technology was collected from the Scopus, an international citation database. Scopus, a product of Elsevier is covers nearly 30,000 titles from over 5,000 publishers and is the largest abstract and citation database of peer-reviewed literature covering science, technology, medicine, social sciences, arts and humanities. It also provides author profiles which cover affiliations, number of publications and their bibliographic data, references, and details on the number of citations each published document has received. It has a feature to calculate h-index of authors and institutions as well. The following query has been used to download the data [AF-ID ( "Kumaraguru College of Technology" 60012454 ) AND ( LIMIT TO ( ACCESSTYPE(OTHER) ) ) ] to retrieve the details of research publications emanating from KUMARAGURU COLLEGE OF TECHNOLOGY .

**DATA ANALYSIS AND RESULTS**

**Type of Source**

The data collected from Scopus data base has been listed based on type of sources preferred for publications by the academics for their research output and shown in Figure I.

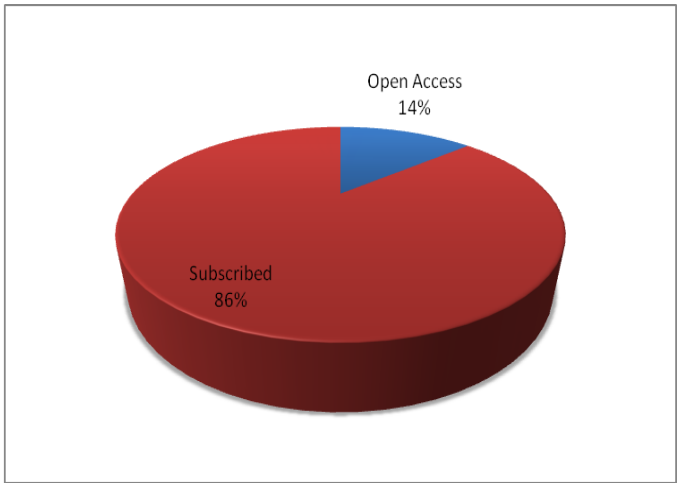



**Figure I : Type of source**

**Chronological Growth of Publications**

Table 1 shows that there is a significant increase in publication started from 1997 with two publications and 2018 and 2019 is the most productive year with 404 (19.15%) publications followed by 2017 and 2015 with 272 (12.9%) and 187 (8.86%) publications respectively. The publication output of last ten years during 2011 to 2020 contributes 1792 (85.3%) publications of the total of 2110.

| S.No | Year Range | Publications | |
|---|---|---|---|
| | | No of Publication | Percentage (%) |
| 1. | 1991-2000 | 13 | 0.61 |
| 2. | 2001-2010 | 305 | 14.52 |
| 3. | 2011-2020 | 1792 | 85.33 |

**Table 1. Year-wise Output of Publications**

**Relative Growth Rate [R(a)]**

The relative growth rate is the increase in the number of publications per unit of time i.e. one year. The mean relative growth rate R(1-2) over a specified period of interval can be calculated from the following equation suggested by Mahapatra

where,

R(1-2) = Mean relative growth rate over a specific period of interval;

W1 = Log W1 (Natural log of initial number of publications at beginning);

W2 = Log W2 (Natural log of initial number of publications at end);

T2 -T1 = Unit difference between the beginning time and end time.

R(a) = Relative growth rate per unit of publications per unit of time (year).

The Relative Growth Rate R(a) and Doubling Time D(t) of publication output of Kumaraguru College of Technology are derived and presented in Table 2 and the results show that till 2010 there was not good number of publications when compare with the last 10 years. The relative growth rate ranges between 0.12 to 0.69. The mean relative growth rate is 0.32 as shown in Table 2.

**Doubling Time (DT )**

A direct equivalence exists between the relative growth rate and doubling time. The doubling time for publication can be calculated by the following formula suggested by Mahapatra. Therefore, The doubling time for publication output of Kumaraguru College of Technology increased from 2.83 from 2003 to 5.56 in 2009 but decreased during 2010 (4.54) onwards till 2015. The doubling time for publications at the aggregate level has been computed as 3.8 years. There is a progressive growth in the number of publications of research output of Kumaraguru College of Technology, Coimbatore as shown in Table 2.

| Year | No. of Publications | Cumulative | log W1 | log W2 | RGR | Doubling Time |
|---|---|---|---|---|---|---|
| 1997 | 2 | 2 | 0.00 | 0.69 | 0.69 | 1.00 |
| 1998 | 2 | 4 | 0.69 | 1.39 | 0.69 | 1.00 |
| 1999 | 3 | 7 | 1.39 | 1.95 | 0.56 | 1.24 |
| 2000 | 6 | 13 | 1.95 | 2.56 | 0.62 | 1.12 |
| 2001 | 12 | 25 | 2.56 | 3.22 | 0.65 | 1.06 |
| 2002 | 11 | 36 | 3.22 | 3.58 | 0.36 | 1.90 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2003 | 10 | 46 | 3.58 | 3.83 | 0.25 | 2.83 |
| 2004 | 20 | 66 | 3.83 | 4.19 | 0.36 | 1.92 |
| 2005 | 27 | 93 | 4.19 | 4.53 | 0.34 | 2.02 |
| 2006 | 50 | 143 | 4.53 | 4.96 | 0.43 | 1.61 |
| 2007 | 44 | 187 | 4.96 | 5.23 | 0.27 | 2.58 |
| 2008 | 54 | 241 | 5.23 | 5.48 | 0.25 | 2.73 |
| 2009 | 32 | 273 | 5.48 | 5.61 | 0.12 | 5.56 |
| 2010 | 45 | 318 | 5.61 | 5.76 | 0.15 | 4.54 |
| 2011 | 56 | 374 | 5.76 | 5.92 | 0.16 | 4.27 |
| 2012 | 90 | 464 | 5.92 | 6.14 | 0.22 | 3.21 |
| 2013 | 92 | 556 | 6.14 | 6.32 | 0.18 | 3.83 |
| 2014 | 130 | 686 | 6.32 | 6.53 | 0.21 | 3.30 |
| 2015 | 187 | 873 | 6.53 | 6.77 | 0.24 | 2.87 |
| 2016 | 109 | 982 | 6.77 | 6.89 | 0.12 | 5.89 |
| 2017 | 272 | 1254 | 6.89 | 7.13 | 0.24 | 2.83 |
| 2018 | 404 | 1658 | 7.13 | 7.41 | 0.28 | 2.48 |
| 2019 | 404 | 2062 | 7.41 | 7.63 | 0.22 | 3.18 |
| 2020 | 48 | 2110 | 7.63 | 7.65 | 0.02 | 30.12 |

**Table 2 Relative Growth Rate and Doubling Time**

**Annual Growth Rate (AGR)**

This is one of the indicators of Annual Growth Rate (AGR) for each year. The formula for AGR is: **AGR = (Ending Value Beginning Value) / Beginning value**

The formula for AAGR is: **AAGR = (Growth Rate in Period A + Growth Rate in Period B + Growth Rate in Period C + ...Growth Rate in Period X) / Number of Periods**

| YEAR-WISE ANNUAL RATIO OF GROWTH AND ANNUAL GROWTH RATE | | | | |
|---|---|---|---|---|
| **S.No** | **Year** | **No of Publications** | **ARoG** | **AGR** |
| 1. | 1997 | 2 | - | - |
| 2. | 1998 | 2 | 1.000 | 0.000 |
| 3. | 1999 | 3 | 1.500 | 0.500 |
| 4. | 2000 | 6 | 2.000 | 1.000 |

| | | | | |
|---|---|---|---|---|
| 5. | 2001 | 12 | 2.000 | 1.000 |
| 6. | 2002 | 11 | 0.917 | -0.083 |
| 7. | 2003 | 10 | 0.909 | -0.091 |
| 8. | 2004 | 20 | 2.000 | 1.000 |
| 9. | 2005 | 27 | 1.350 | 0.350 |
| 10. | 2006 | 50 | 1.852 | 0.852 |
| 11. | 2007 | 44 | 0.880 | -0.120 |
| 12. | 2008 | 54 | 1.227 | 0.227 |
| 13. | 2009 | 32 | 0.593 | -0.407 |
| 14. | 2010 | 45 | 1.406 | 0.406 |
| 15. | 2011 | 56 | 1.244 | 0.244 |
| 16. | 2012 | 90 | 1.607 | 0.607 |
| 17. | 2013 | 92 | 1.022 | 0.022 |
| 18. | 2014 | 130 | 1.413 | 0.413 |
| 19. | 2015 | 187 | 1.438 | 0.438 |
| 20. | 2016 | 109 | 0.583 | -0.417 |
| 21. | 2017 | 272 | 2.495 | 1.495 |
| 22. | 2018 | 404 | 1.485 | 0.485 |
| 23. | 2019 | 404 | 1.000 | 0.000 |
| 24. | 2020 | 48 | 0.119 | -0.881 |

**Table 3 YEAR-WISE ANNUAL RATIO OF GROWTH AND ANNUAL GROWTH RATE**

Table 3 depicts that the AGR is the highest in 2017(1.495) followed by 2004, 2001and 2000(1.000) respectively. The AGR is the lowest in 2013(0.022). As far as negative growth rate is concerned, the year 2002 has the AGR of -0.083 followed by -0.091 in 2003. There is a fluctuation in the AGR of Kumaraguru College of Technology research output during the study period.

**DOCUMENT TYPE DISTRIBUTION**

Tables 4 shows that the faculty of Kumaraguru College of Technology mostly published their research findings in the form of journal articles (1665 with 16.66%) as the preferred channel for their publications. They have also presented their papers in 350 (2.48%) conferences. They have published 52 (1.48%) review papers as well. Other types like book chapter 31 (0.19%), books

(4 of 0.14%) are also the source of publications. Remaining other forms like short survey, editorial and so on.

**Table 4. Type of Documents**

| S.No | Document Type | No of Publication | Percentage (%) |
|---|---|---|---|
| 1 | Article | 1665 | 16.66 |
| 2 | Conference Paper | 350 | 2.47 |
| 3 | Review | 52 | 1.47 |
| 4 | Book Chapter | 31 | 0.19 |
| 5 | Book | 4 | 0.14 |
| 6 | Short Survey | 3 | 0.09 |
| 7 | Editorial | 2 | 0.04 |
| 8 | Erratum | 1 | 0.04 |
| 9 | Note | 1 | 0.04 |
| 10 | Undefined | 1 | 0.04 |

**Predominant Authors of Kumaraguru College of Technology**

Table 5 reveals that Ramakrishnan, G. is the most productive author with 60 (2.86%) publications followed by Sanal Kumar, V.R. with 47 (2.23%) publications. Below table represents the top 20 predominant authors based on the publications.

**Table 5: Ranking of Authors**

| S. No | Name of the Author | No of Publication | Percentage (%) |
|---|---|---|---|
| 1 | Ramakrishnan, G. | 60 | 2.85 |
| 2 | Sanal Kumar, V.R. | 47 | 2.23 |
| 3 | Dhurai, B. | 46 | 2.19 |
| 4 | Srinivasan, J. | 39 | 1.85 |
| 5 | Vijayanandh, R. | 39 | 1.85 |
| 6 | Gokarneshan, N. | 38 | 1.80 |
| 7 | Thottungal, R. | 29 | 1.38 |

| | | | |
|---|---|---|---|
| 8 | Velmurugan, C. | 29 | 1.38 |
| 9 | Senthil Kumar, M. | 27 | 1.28 |
| 10 | Syed Shabudeen, P.S. | 27 | 1.28 |
| 11 | Aravind, J. | 26 | 1.23 |
| 12 | Marimuthu, R. | 26 | 1.23 |
| 13 | Sundaresan, S. | 24 | 1.14 |
| 14 | Vasuki, A. | 23 | 1.09 |
| 15 | Prakash, C. | 20 | 0.95 |
| 16 | Sasikala, L. | 20 | 0.95 |
| 17 | Sivamani, S. | 20 | 0.95 |
| 18 | Kanmani, P. | 19 | 0.90 |
| 19 | Kannan, R. | 19 | 0.90 |
| 20 | Kannan, T. | 18 | 0.85 |

**Authorship Pattern**

Table 6 shows that 1959 papers are collaborative publications. Two author papers (686 with CAI 234.21) and followed by more than two author's collaborative papers (1272 with CAI 80.47). 152 papers (CAI 64.30) were contributed by single authors.

**Table 6. Authorship Pattern**

| Year | Single Author | CAI | Two Authors | CAI | More than Two Authors | CAI | Total |
|---|---|---|---|---|---|---|---|
| 1997 | 0 | 0.00 | 0 | 0.00 | 2 | 133.48 | 2 |
| 1998 | 1 | 297.54 | 2 | 480.26 | 0 | 0.00 | 3 |
| 1999 | 0 | 0.00 | 3 | 720.39 | 0 | 0.00 | 3 |
| 2000 | 4 | 595.08 | 2 | 240.13 | 0 | 0.00 | 6 |
| 2001 | 10 | 743.85 | 2 | 120.07 | 0 | 0.00 | 12 |
| 2002 | 9 | 730.32 | 1 | 65.49 | 1 | 12.13 | 11 |
| 2003 | 7 | 624.83 | 2 | 144.08 | 1 | 13.35 | 10 |
| 2004 | 12 | 563.76 | 6 | 227.49 | 1 | 7.03 | 19 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2005 | 2 | 66.12 | 12 | 320.17 | 13 | 64.27 | 27 |
| 2006 | 5 | 89.26 | 22 | 316.97 | 23 | 61.40 | 50 |
| 2007 | 4 | 81.15 | 14 | 229.22 | 26 | 78.88 | 44 |
| 2008 | 4 | 66.12 | 13 | 173.43 | 37 | 91.46 | 54 |
| 2009 | 1 | 27.89 | 8 | 180.10 | 23 | 95.94 | 32 |
| 2010 | 6 | 119.02 | 15 | 240.13 | 24 | 71.19 | 45 |
| 2011 | 5 | 79.70 | 20 | 257.28 | 31 | 73.89 | 56 |
| 2012 | 4 | 39.67 | 41 | 328.18 | 45 | 66.74 | 90 |
| 2013 | 6 | 58.21 | 35 | 274.06 | 51 | 74.00 | 92 |
| 2014 | 7 | 48.06 | 47 | 260.45 | 76 | 78.04 | 130 |
| 2015 | 5 | 23.87 | 75 | 288.93 | 107 | 76.38 | 187 |
| 2016 | 4 | 32.76 | 41 | 270.97 | 64 | 78.38 | 109 |
| 2017 | 16 | 52.51 | 87 | 230.42 | 169 | 82.94 | 272 |
| 2018 | 15 | 33.14 | 111 | 197.93 | 278 | 91.85 | 404 |
| 2019 | 22 | 48.61 | 112 | 199.71 | 270 | 89.21 | 404 |
| 2020 | 3 | 55.79 | 15 | 225.12 | 30 | 83.43 | 48 |
| **Total** | 152 | 64.30 | 686 | 234.21 | 1272 | 80.47 | 2110 |

**Degree of Collaboration**

Collaborative co-efficient is used to measure the extent of collaboration. The measure of the degree of collaboration in a discipline lies between 0 and 1 according to the formula of Subramanyam12

$$C = Nm/Nm+Ns.$$

C: Degree of Collaboration

Nm: Number of multi-authored publications

Ns: Number of single authored publications

Hence C = 0.92 Hence, it is found that the degree of collaboration of publications of Kumaraguru College of Technology faculty is 0.92.

**Pattern of Co-Authorship**

In order to assess the Pattern of Co-Authorship (CAI), the following formula suggested by Garg and Padhi has been employed.

$$CAI = \frac{Nij/Nio}{Noj/N\infty}$$

Where, Nij = Number of papers having authors in block i

Nio = Total output of block i

Noj = Number of papers having j authors for all blocks

N∞ = Total number of papers for all authors and all blocks

Hence CAI= 64.3 for single author, 234.21 for two authors, 80.47 for multiple author.

**Source wise Distribution**

Table 7 shows that the distribution of journals based on publications on which the papers appeared indicates a high degree of scatter in terms of number of journals. The top 20 journals listed below as the predominant journals preferred by academics of Kumaraguru College of Technology, Coimbatore.

**Table 7. Ranking of Journals based on Publications**

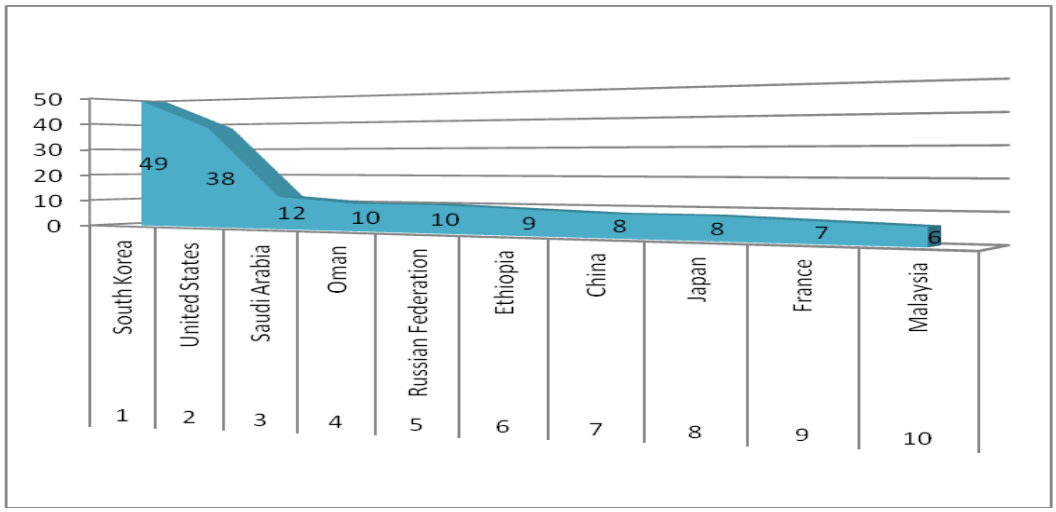
| S.No | Name of the Source | No of Publication | Percentage (%) |
|---|---|---|---|
| 1 | International Journal of Innovative Technology And Exploring Engineering | 125 | 5.95 |
| 2 | International Journal of Recent Technology And Engineering | 105 | 5 |
| 3 | International Journal of Engineering And Advanced Technology | 99 | 4.71 |
| 4 | International Journal of Mechanical And Production Engineering Research And Development | 84 | 4 |
| 5 | Journal of Advanced Research In Dynamical And Control Systems | 59 | 2.80 |

| | | | |
|---|---|---|---|
| 6 | International Journal of Applied Engineering Research | 53 | 2.52 |
| 7 | International Journal of Civil Engineering And Technology | 47 | 2.23 |
| 8 | Asian Journal of Microbiology Biotechnology And Environmental Sciences | 43 | 2.04 |
| 9 | Colourage | 37 | 1.76 |
| 10 | Rasayan Journal of Chemistry | 36 | 1.71 |
| 11 | Man Made Textiles In India | 33 | 1.57 |
| 12 | Textile Magazine | 29 | 1.38 |
| 13 | Asian Textile Journal | 24 | 1.14 |
| 14 | European Journal of Scientific Research | 24 | 1.14 |
| 15 | International Journal of Advanced Manufacturing Technology | 17 | 0.80 |
| 16 | Journal of The Textile Association | 17 | 0.80 |
| 17 | Ecology Environment And Conservation | 16 | 0.76 |
| 18 | Aip Conference Proceedings | 15 | 0.71 |
| 19 | Indian Journal of Fibre And Textile Research | 14 | 0.66 |
| 20 | Journal of Industrial Textiles | 14 | 0.66 |

**Collaborative Country**

Figure 2 shows that the faculty of Kumaraguru College of Technology collaborated with researchers of South Korea (49) followed by United States 38 publications.

Figure 2. Collaborative Countries



**Collaborative Institutions**

Table 8 shows that researchers from 20 institutions collaborated with the faculty of Kumaraguru College of Technology for more than 20 publications. Among them, PSG College of Technology stands first with 132 publications followed by Anna University with 68 publications.

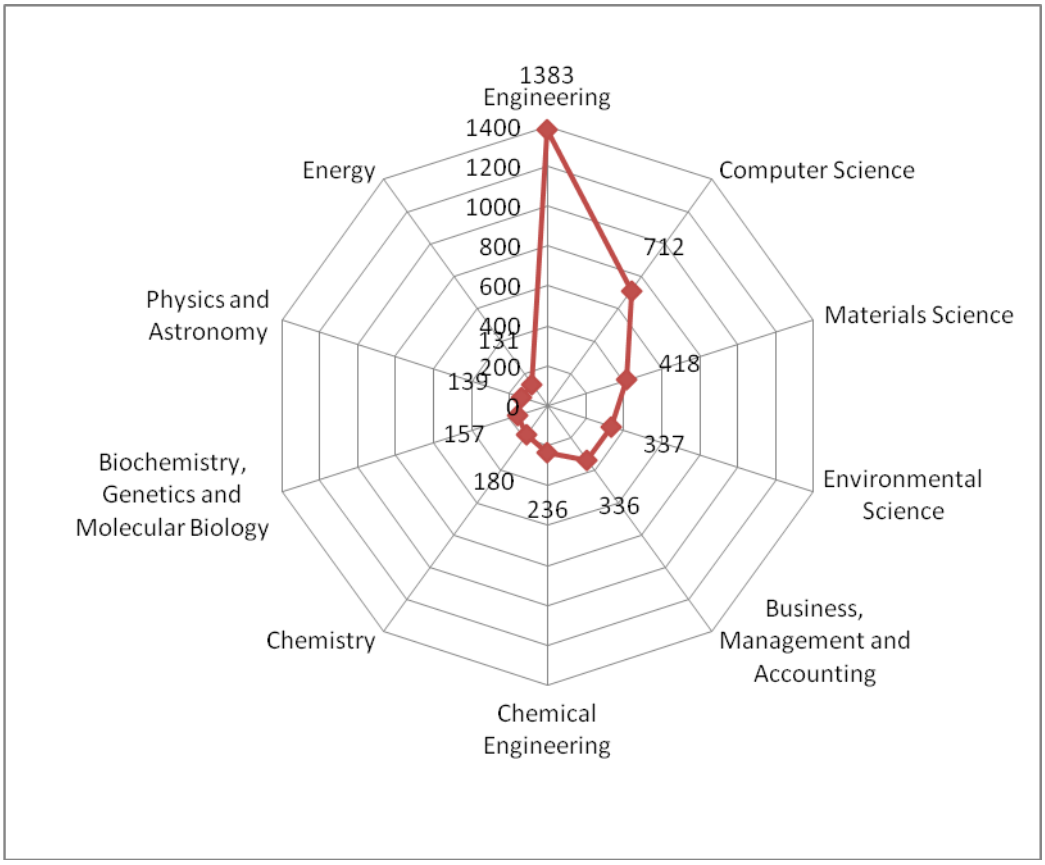
**Table 8. Ranking of Collaborative Institutions**

| S.No | Collaborative Institutions | No of Publication |
|---|---|---|
| 1 | PSG College of Technology | 132 |
| 2 | Anna University | 68 |
| 3 | Government College of Technology, Coimbatore | 54 |
| 4 | Coimbatore Institute of Technology | 46 |
| 5 | Bannari Amman Institute of Technology | 38 |
| 6 | Bharathiar University | 37 |
| 7 | Indian Institute of Science, Bengaluru | 35 |
| 8 | Sona College of Technology | 31 |
| 9 | Kongu Engineering College | 31 |
| 10 | Hindusthan College of Engineering & Technology | 29 |
| 11 | Sri Ramakrishna Engineering College | 28 |
| 12 | Indian Space Research Organization | 27 |
| 13 | Avinashilingam Institute for Home Science and Higher Education for Women | 23 |
| 14 | Vellore Institute of Technology, Vellore | 23 |
| 15 | Karunya Institute of Technology and Sciences | 22 |
| 16 | Sri Krishna College of Engineering and Technology, Coimbatore | 22 |
| 17 | Kongunadu Arts and Science College | 21 |
| 18 | Dr. N.G.P. Institute of Technology | 21 |
| 19 | SVS College of Engineering | 20 |
| 20 | Sathyabama Institute of Science and Technology | 19 |

**Subjectwise Distribution**

Figure 3 shows that 1383 papers were published in the broad area of ‘Engineering’ followed by Computer Science (712) and Material Science (418).

**Figure 3. Broad Subject Areas of Publication**




**Top Cited Papers**

Table 9 shows that top 20 cited papers. It is evident that 990 papers have received below 100 citations and 8 papers have received more than 100 citations. 1112 papers have not received single citations.

**Table 9. Top Cited Papers**

| Title of the Paper | Year | Journal | Citation |
|---|---|---|---|
| Application of response surface methodology for predicting weld bead quality in submerged arc welding of pipes | 1999 | Journal of Materials Processing Technology | 354 |
| The antioxidant activity and free radical scavenging potential of two different solvent extracts of Camellia sinensis (L.) O. Kuntz, | 2008 | Food Chemistry | 188 |

| | | | |
|---|---|---|---|
| Ficus bengalensis L. and Ficus racemosa L. | | | |
| UV protection finishing of textiles using ZnO nanoparticles | 2009 | Indian Journal of Fibre and Textile Research | 107 |
| In vitro antioxidant studies in leaves of annona species | 2007 | Indian Journal of Experimental Biology | 105 |
| Evaluation of antioxidant potential in selected green leafy vegetables | 2009 | Food Chemistry | 102 |
| Quercetin modulates OTA-induced oxidative stress and redox signalling in HepG2 cells - Up regulation of Nrf2 expression and down regulation of NF-κB and COX-2 | 2014 | Biochimica et Biophysica Acta - General Subjects | 96 |
| Prediction of tool wear using regression and ANN models in end-milling operation | 2008 | International Journal of Advanced Manufacturing Technology | 87 |
| An experimental study on a regenerative solar still with energy storage medium - Jute cloth | 2010 | Desalination | 74 |
| Optimization of machining parameters using genetic algorithm and experimental validation for end-milling operations | 2007 | International Journal of Advanced Manufacturing Technology | 70 |
| Study of adsorption properties and inhibition of mild steel corrosion in hydrochloric acid media by water soluble composite poly (vinyl alcohol-o-methoxy aniline) | 2014 | Journal of the Association of Arab Universities for Basic and Applied Sciences | 69 |
| Environmental applications of chitosan and cellulosic | 2017 | Bioresource Technology | 65 |

| | | | |
|---|---|---|---|
| biopolymers: A comprehensive outlook | | | |
| Identification of α amylase inhibitors from Syzygium cumini Linn seeds | 2008 | Indian Journal of Experimental Biology | 65 |
| Experimental investigation on corrosion and hardness of ion implanted AISI 316L stainless steel | 2010 | Materials and Design | 58 |
| Remediation of chromium contaminants using bacteria | 2012 | International Journal of Environmental Science and Technology | 54 |
| A genetic algorithm-based artificial neural network model for the optimization of machining processes | 2009 | Neural Computing and Applications | 53 |
| Neuro fuzzy schemes for fault detection in power transformer | 2007 | Applied Soft Computing Journal | 50 |

**Funding Sponsors**

Table 10 represented the top 20 funding agencies for Kumaraguru College of Technology. Department of Science and Technology, Government of Kerala have sponsored for (10) publications followed by All India Council for Technical Education(7), Department of Science and Technology, Ministry of Science and Technology, India(4) and so on.

**Table 10. Funding Sponsors**

| S.No | Predominant Funding Sponsor | No of Publication |
|---|---|---|
| 1 | Department of Science and Technology, Government of Kerala | 10 |
| 2 | All India Council for Technical Education | 7 |
| 3 | Department of Science and Technology, Ministry of Science and Technology, India | 4 |

| | | |
|---|---|---|
| 4 | Indian Institute of Science | 4 |
| 5 | Russian Foundation for Basic Research | 4 |
| 6 | Department of Biotechnology, Government of West Bengal | 3 |
| 7 | Koch Cultural Trust | 3 |
| 8 | National Natural Science Foundation of China | 3 |
| 9 | Bangladesh Council of Scientific and Industrial Research | 2 |
| 10 | Council of Scientific and Industrial Research | 2 |
| 11 | CouncilÂ ofÂ Scientific and Industrial Research, India | 2 |
| 12 | Department of Science and Technology, Government of West Bengal | 2 |
| 13 | Department of Science and Technology, Ministry of Science and Technology | 2 |
| 14 | King Saud University | 2 |
| 15 | National Research Foundation of Korea | 2 |
| 16 | Pusan National University | 2 |
| 17 | Research and Development | 2 |
| 18 | Science and Engineering Research Board | 2 |
| 19 | Sri Krishna College of Engineering and Technology | 2 |
| 20 | University Grants Commission | 2 |

**FINDINGS OF THE STUDY**

- ❖ 2110 papers were published by the faculty of Kumaraguru College of Technology in the span of 24 years from 1997 to 2020.
- ❖ Journals are the most preferred channels followed by conference proceedings.
- ❖ The relative growth rate ranges between 0.12 to 0.69
- ❖ The paper entitled ‘Application of response surface methodology for predicting weld bead quality in submerged arc welding of pipes.’ by Gunaraj V., Murugan N.., in the ‘Journal of Materials Processing Technology’ in 1999 is the most cited paper of Kumaraguru College of Technology and has received 354 citations as of now;

- ❖ Eight papers have received more than 100 citations and 990 papers have received 01 to 99 citations. 1112 papers have not received single citation.

## CONCLUSION

The quality of the institutions is nowadays measured in various criteria such as contribution towards research and innovation in the academic environment. This study brings out the scholarly output of one of the named institution in the Coimbatore region in the Engineering domain. Scientometric study indicates and experience the academicians to understand the current position, and the area of research to be improved. This study gives an overview of research calamities of the Technical institution which is need of the hour to estimate and proceed further to do more research and innovation in the field of engineering.

## References


1.Bharvi, D., Garg, K.C. & Bali, A. (2003). Scientometrics of the international journal Scientometrics. Scientometrics, 56(1), 81-93. Retrieved from: https://doi.org/10.1023/A:1021950607895

2.Garg, K. (2002). Scientometrics of laser research in India and China. Scientometrics, 55(1), 71-85. Retrieved from: https://doi.org/10.1023/A:1016050920365

3.Hood, W., & Wilson, C. (2001). The literature of bibliometrics, scientometrics, and informetrics. Scientometrics, 52(2), 291-314. Retrieved from: https://doi.org/10.1023/A:1017919924342

4.M Mani M Prakash, J Arumugam (2018) . Scholarly Research Output of Indian Institute of Management (IIMs) in India : Emerging Trends in Librarianship: Role of Libraries in Learning Environment (ISBN 9788192999906). 621-629.

5.Meera, & Sahu, S.K. (2014). Research output of University College of Medical Science, University of Delhi: A bibliometric study. COLLNET Journal of Scientometrics and Information Management. 8(2): 401-418.

6.Moin, M., Mahmoudi, M., & Rezaei, N. (2005). Scientific output of Iran at the threshold of the 21st century. Scientometrics, 62(2), 239- 248. Retrieved from https://doi.org/10.1007/s11192-005-0017

7.Savanur, K., & Konnur, P.V. (2012). Growth and impact of research output of Bangalore University, 1971-2010: A scientometric study. International Journal of Library and Information Science. 3(5): 71-80.

8.Vasistha, S. (2011). Assessment of academic research output during 1996-2009: A study of PEC University of Technology, Chandigarh. DESIDOC Journal of Information Technology. 31(2): 136-142.