

Walailak Journal of Science and Technology - A Scientometric Analysis from 2010 to 2015

Kosin SIRIRAK^{*} and Chitnarong SIRISATHITKUL^{}**

*Walailak Journal of Science and Technology, Institute of Research and Development,
Walailak University, Nakhon Si Thammarat 80161, Thailand*

(*Managing Editor's e-mail: journal.wu@gmail.com; **Editor-in-chief's e-mail: schitnar@wu.ac.th)

Abstract

The growth of Walailak Journal of Science and Technology is chronicled through a scientometric analysis from 2010 to 2015. The number of submissions has vastly increased since the online submission system was introduced in 2011 and surpassed 400 manuscripts per year in 2014 - 2015. It follows that the acceptance ratio has been reduced to the minimum of 25 % in 2015. The 339 published papers, mostly full-length research articles, are categorized into Science (46.61 %), Agricultural technology (23.30 %), Engineering (17.70 %), Health sciences (6.78 %) and Information technology (4.72 %). The journal is benefited from demographic diversity of authors. Papers submitted from 27 different countries were published during this 6-year period. Furthermore, domestic reviewers and editorial board members have become the minority since 2012. The citation recorded in SCOPUS database has continued to improve with the reduction in self-citation ratio. The latest Scimago Journal Rank (SJR) obtained in 2014 is 0.207 with 33 citations and average 0.33 citations per paper.

Keywords: Walailak Journal of Science and Technology, scientometric analysis, journal metrics, citation

Introduction

Walailak Journal of Science and Technology is a multidisciplinary journal covering areas of Agricultural technology and biological sciences, Engineering and physical sciences, Health sciences, Information technology, Applied mathematics and Area based research. Owned by the Institute of Research and Development of Walailak University, Thailand, the journal has no publication fee and manuscripts can be submitted online since 2011. At the journal website [1], the readers are entitled to have full access free of charge. Also, a limited number of hard copies are distributed. The journal is currently indexed by Thai-Journal Citation Index (TCI) [2] and SCOPUS [3] databases.

Publication statistics of Walailak Journal of Science and Technology during 2004 - 2009 were analyzed in [4]. In the first 6 years of the journal, 134 manuscripts were submitted to the journal and 118 papers had been published in 2 issues each year. In this paper, publications in the journal are analyzed by means of scientometrics, previously used to analyze prominent international journals based in India including Indian Journal of Physics [5], Indian Journal of Pure and Applied Physics [6], Pramana Journal of Physics [7], Sadhana Academy Proceeding in Engineering Sciences [8] and Journal of Scientific and Industrial Research [9]. The marked transition and upward trends of journal are explicitly presented.

Materials and methods

All published articles and submissions of Walailak Journal of Science and Technology during 2010 - 2015 were taken into account. The data was acquired from volumes 7 - 12 of the journal as well as all submitted manuscripts and reviewer's reports from the online submission system [1]. Numbers of published papers, pages, authors, references were analyzed. The number of submissions was also a figure of interest and the acceptance ratio was computed from the number of submissions each year and those finally accepted for publication, not necessary in the same year.

Publications were classified according to types (minireview articles, original articles, special articles), research fields (Science including applied mathematics, Agricultural technology, Engineering, Health sciences and Information technology). Since the majority of the current research work is interdisciplinary, the faculty of authors was also used as a factor to determine the research field. A research article was considered as an international collaboration when the co-authors were affiliated to more than one country.

Corresponding authors, editorial board members and reviewers are also classified according to country of affiliation to examine the international characteristics of the journal. In the case of reviewers, only those assessed the published papers were taken into account to represent all reviewers. Finally, Scimago Journal Rank (SJR) and citations are reported based on the SCOPUS database [3]. In additions, percent of self-citation, percent of cited papers and average citations per papers (cites per doc) were also determined.

Results and discussion

From 2010 to 2015, Walailak Journal of Science and Technology had published 339 research papers in total. **Table 1** indicates the substantial increase in the number of publications over the 6-year period of this study. In accordance with its first 6 years, the journal published 2 issues per year with 19 papers in 2010 and 18 papers in 2011. The number of issues since 2012 has been increased to accommodate the increase in publications and Walailak Journal of Science and Technology has settled as a monthly journal in 2014 publishing over 90 papers each year. The growth in publications is due to enhanced international recognitions of the journal since its online submission was introduced in 2011. The number of submission was sharply increased to 220 in 2011, exceeding 400 submissions since 2014. The acceptance ratio has significantly declined from 90 % down to 25 % during this 6-year period.

Table 1 Numbers (No.) of issues, publications and submissions of Walailak Journal of Science and Technology from 2010 to 2015.

Year	Volume number	No. of issues	No. of papers	Total submissions	Acceptance ratio (%)
2010	7	2	19	27	90
2011	8	2	18	220	79
2012	9	4	50	283	60
2013	10	6	60	227	45
2014	11	12	95	402	26
2015	12	12	97	419	25
Total		38	339	1578	

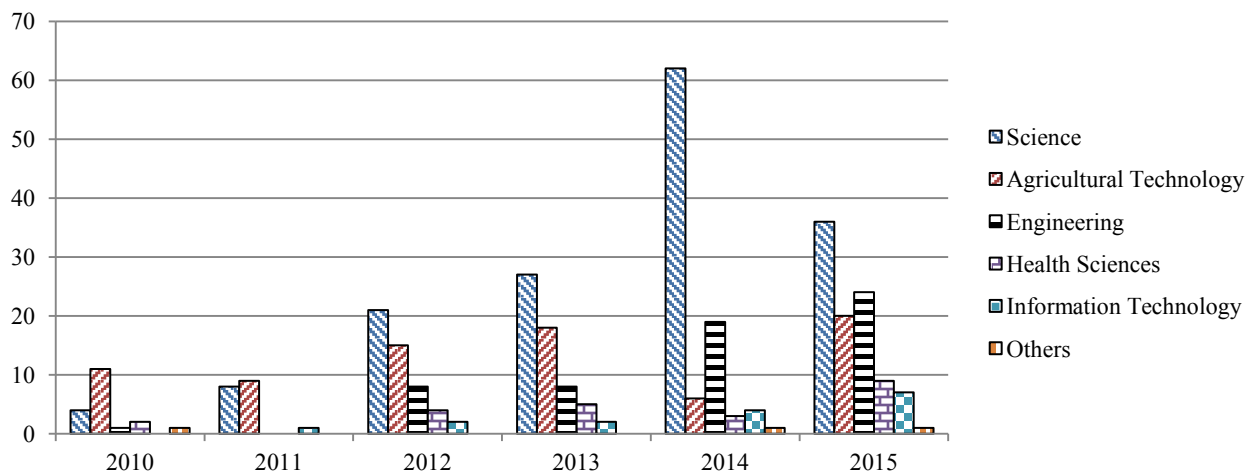


Figure 1 Publication in Walailak Journal of Science and Technology from 2010 to 2015 classified by field of research.

Because of the multidisciplinary scope, it is interesting to analyze the diversity of research in the journal. Agricultural technology had represented the major contents until the expansion of publications in 2012. Since then, Science has become the predominant field whilst publications in Engineering and Information technology have continuously grown in numbers. Publication in field of Science reached the maximum in 2014 and then the contents became relatively balanced in 2015. Accumulated over the 6-year period, the total publications are 158 for Science (including Applied mathematics) (46.61 %), 79 for Agricultural technology (23.30 %), 60 for Engineering (17.70 %), 23 for Health sciences (6.78 %) and 16 for Information technology (4.72 %). Since 2014, thematic issues have been created by organizing papers with related contents in the journal each month.

Table 2 Numbers of pages per publication in Walailak Journal of Science and Technology.

Year	No. of papers	Page range					Total pages	Average pages per paper
		< 6	6 - 10	11 - 15	16 - 20	> 20		
2010	19	3	10	6	0	0	171	9.00
2011	18	1	10	5	2	0	183	10.17
2012	50	9	24	14	3	0	453	9.06
2013	60	3	36	12	7	2	651	10.85
2014	95	5	43	28	15	4	1073	11.29
2015	97	3	42	37	10	5	1120	11.55
Total	339	24	165	102	37	11	3651	
Percent		7.08 %	48.67 %	30.09 %	10.91 %	3.24 %		

Corresponding to the increase in publications, the number of pages has enhanced during 2010 - 2015 and surpassed 1000 pages per year since 2014. The length of papers is considered according to **Table 2**. The average pages per paper remain rather constant within the 9.00-11.55 page-range and the total average over the 6-year period is 10.77 pages. Nearly 80 % of papers fall into the 6 - 15 page-range. Whereas the journal does not impose the page limit, long (> 20 pages) and short (< 6) articles accounted for only about 10 % of total publications. The length of paper is partly related to the number of references. Average references per paper shown in **Table 3** vary from 23.62 to 36.67. These numbers of pages and references in Walailak Journal of Science and Technology are comparable to the statistics shown by other journals [5-9].

Table 3 Numbers of references cited by publications in Walailak Journal of Science and Technology.

Year	No. of papers	No. of references	Average reference per paper
2010	19	456	24.00
2011	18	660	36.67
2012	50	1330	26.60
2013	60	1503	25.05
2014	95	2244	23.62
2015	97	2437	25.12

Table 4 Types of publications and collaborations in Walailak Journal of Science and Technology.

Year	No. of papers	Type of articles			No. of international collaboration	Percent of international collaboration
		Special article	Minireview	Original article		
2010	19	1	3	15	0	0.00 %
2011	18	0	5	13	2	11.11 %
2012	50	0	8	42	6	12.00 %
2013	60	0	3	57	9	15.00 %
2014	95	1	3	91	9	9.47 %
2015	97	1	7	89	8	8.25 %
Total	339	3	29	307	34	
Percent		0.88 %	8.56 %	90.56 %	10.03 %	

Table 5 Numbers of authors per publication in Walailak Journal of Science and Technology.

Year	Single author	Two authors	Three authors	Four authors	Five authors	More than five	Total authors	Average author per paper
2010	4	7	4	3	0	1	48	2.53
2011	6	4	5	1	2	0	43	2.39
2012	12	7	12	11	4	4	153	3.06
2013	10	13	14	13	7	3	190	3.17
2014	14	32	25	16	5	3	260	2.74
2015	16	29	28	13	8	3	269	2.77
Total	62	92	88	57	26	14	963	
Percent	18.29 %	27.14 %	25.96 %	16.81 %	7.67 %	4.13 %		

Papers are classified into types in **Table 4**. The journal has mostly published full-length original research articles accounting for 90.56 %. Short communications are no longer applicable. Minireviews are published at least 3 times a year and the rest of publications are special articles regarding Hijack journals [10], international publications by Walailak University staff during 2007 - 2014 [11] and publications in Walailak Journal of Science and Technology during 2004 - 2009 [4]. **Table 4** also indicates numbers of papers as a result of collaborations among different countries. The majority of papers are written by co-authors from a single country, either inside or outside Thailand, and international collaborations remain less than 10 papers per year. The number of authors is listed in **Table 5**. More than a half of publications have 2 - 3 authors. Interestingly, single authorship has steadily increased over the period of this study.

The authorship is further analyzed in terms of country of affiliations. During 2010 - 2015, papers submitted from 27 different countries were published. The journal has clearly become the forum of international scholars, especially in Asia. The top 10 countries of the corresponding authorship are shown in **Figure 2**. In addition to Asian countries, contributions from Africa led by Egypt and Nigeria are also significant. The contribution from Thailand is slightly less than one third of the publications. Out of 123 papers from Thailand, only 55 papers are authored by Walailak University staff. Other 27 contributions shown in **Figure 2** are from countries with less than 4 papers, i.e. 3 for Botswana, Saudi Arabia, Tunisia and Turkey; 2 for Italy and Philippines; One each for Brunei, China, Indonesia, Japan, Kenya, Lebanon, Poland, Syria, United Kingdom, United States and Vietnam.

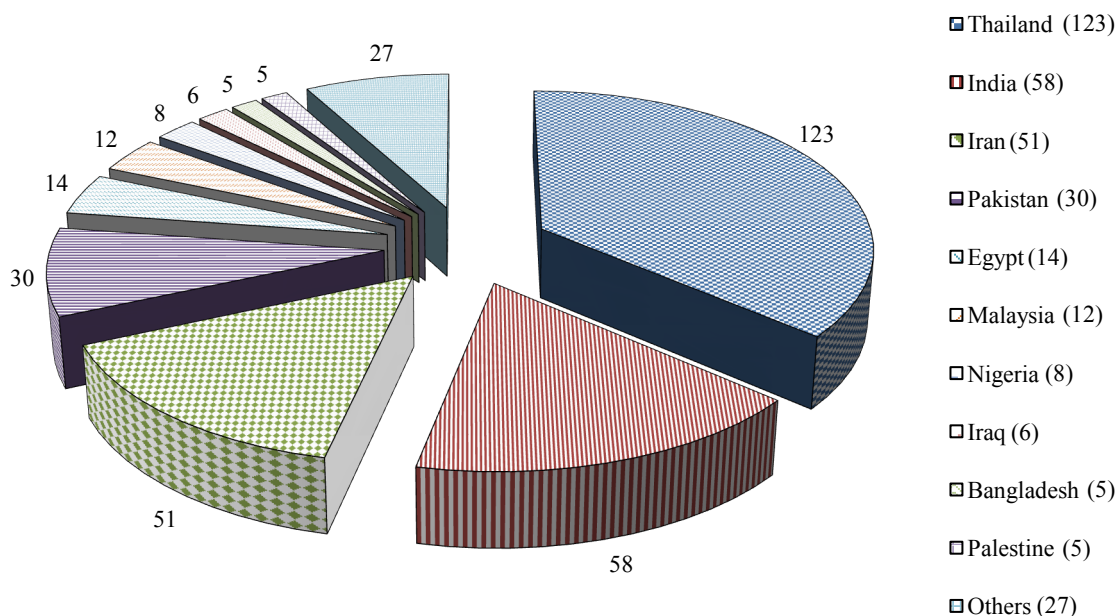


Figure 2 Country of corresponding authorship in Walailak Journal of Science and Technology.

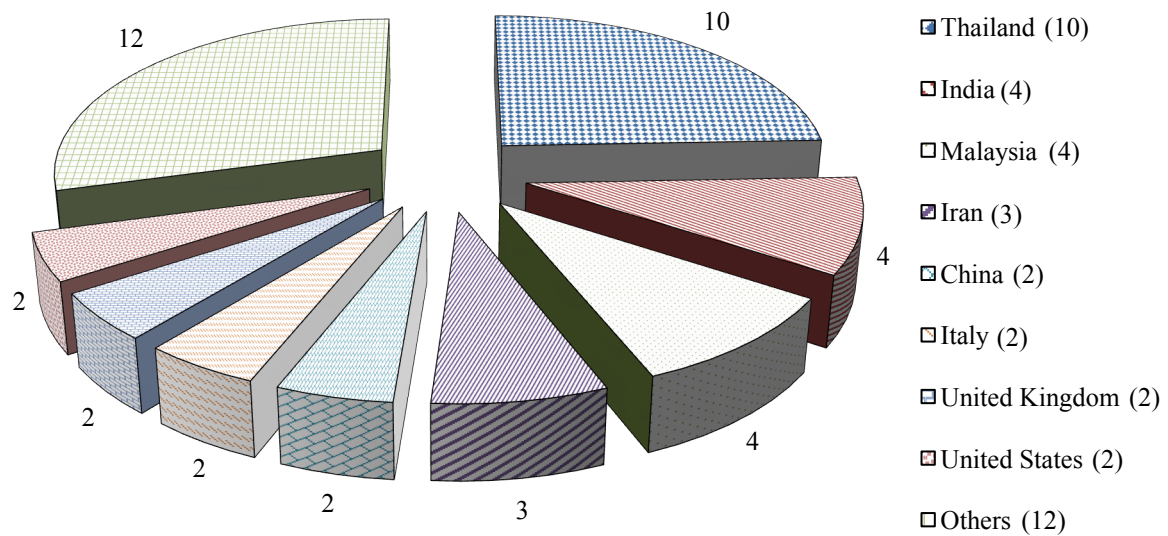


Figure 3 Number of editorial board members of Walailak Journal of Science and Technology classified by country of affiliations.

Table 6 Numbers of reviewers for accepted publications in Walailak Journal of Science and Technology.

Year	No. of papers	Total reviewers	Average reviewer per paper	No. of domestic reviewer	Percent of domestic reviewer
2010	19	45	2.37	45	100.00 %
2011	18	50	2.78	50	100.00 %
2012	50	160	3.20	73	45.62 %
2013	60	199	3.32	68	34.17 %
2014	95	291	3.06	50	17.18 %
2015	97	314	3.24	91	28.98 %

In addition to the diversity of authorship, the characteristics of international journal are reflected by international editorial board and reviewers. Walailak Journal of Science and Technology owes greatly to global board members, guest editors and reviewers. According to **Figure 3**, editorial board consists of more than 10 internationals and around 75 % of members are scholars working outside Thailand. After the implementation of the online system, the review procedure became fully international in 2012 and the number of domestic reviewers is reduced to less than a half of total reviewers as shown by **Table 6**. The average number of reviewers per published paper has appropriately been kept at 2.37 - 3.32 over the years.

Table 7 Citations and Scimago Journal Rank (SJR) of Walailak Journal of Science and Technology in SCOPUS database.

Year	SJR	Total citation	No. of self-citation	Percent of self-citation	Percent of cited papers	Average Citations per paper
2013	0.134	7	3	42.86 %	21.21 %	0.21
2014	0.207	33	7	21.21 %	14.85 %	0.33

Walailak Journal of Science and Technology has been indexed in the SCOPUS database since 2012. From **Table 7**, the SJR was increased from 0.134 in 2013 to 0.207 in 2014 thanks to the increase in citations. Only 14.85 - 21.21 % of total papers are cited but result in respectable 0.21 - 0.33 citations per paper. Those citations which appear in Walailak Journal of Science and Technology, referred to as self-citation, contribute to 42.86 % in 2013 and 21.21 % in 2014. Such simultaneous increase in total citations with reduction in self-citation ratio clearly indicates the upward trend of the journal.

Conclusions

During its 7th - 12th year, Walailak Journal of Science and Technology has undergone significant transition. In addition to multidisciplinary contents, the journal exhibits demographic diversity of authors, editorial board members and reviewers. The publication indicators including numbers of submissions and citations as well as acceptance ratio confirm the growth of the journal.

Acknowledgements

Editors are grateful to international board members, guest editors and reviewers for their volunteered contributions to the journal.

References

- [1] Walailak Journal of Science and Technology, Available at: <http://wjst.wu.ac.th>, access March 2016.
- [2] Thai-Journal Citation Index Centre, Available at: http://www.kmutt.ac.th/jif/public_html, accessed March 2016.
- [3] SCImago Journal & Country Rank, Available at: <http://www.scimagojr.com>, accessed March 2016.
- [4] C Sirisathitkul and K Sirirak. Publications in Walailak Journal of Science and Technology from 2004 to 2009. *Walailak J. Sci. & Tech.* 2010; **7**, 1-4.
- [5] S Nattar. Indian Journal of Physics: A scientometric analysis. *Int. J. Libr. Inform. Sci.* 2009; **1**, 055-061.
- [6] J Kumar Singh. A Scientometric analysis of Indian Journal of Pure and Applied Physics (2006-2010): A study based on Web of Science. *Res. J. Libr. Sci.* 2014; **2**, 7-12.
- [7] A Kumar, ER Prakasan, VL Kalyane and V Kumar. Pramana - Journal of Physics: A scientometric analysis. *Ann. Libr. Inform. Stud.* 2008; **55**, 52-61.
- [8] C Arya. Sadhana - Academy Proceedings in Engineering Sciences: A scientometric analysis. *Sadhana* 2013; **38**, 761-71.
- [9] P Rajendran, R Jeyshankar and B Elango. Scientometric analysis of contributions to Journal of Scientific and Industrial Research. *Int. J. Digit. Libr. Serv.* 2011; **1**, 79-89.
- [10] M Jalalian and H Mahboobi. Hijacked journals and predatory publishers: Is there a need to re-think how to assess the quality of academic research? *Walailak J. Sci. & Tech.* 2014; **11**, 389-94.
- [11] C Sirisathitkul and Y Sirisathitkul. Publications of Walailak University from 2007 to 2014 in ISI, SCOPUS and TCI databases. *Walailak J. Sci. & Tech.* 2015; **12**, 733-7.