

A Strategy Study on the SCI List of Nuclear Engineering and Technology (NET)

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1. Introduction

The number of papers published in SCI (Science Citation Index) journal is used as a standard for evaluating the level of science technology and a comparative ranking among countries; thus, relevant methods are proposed for the list of NET, the journal of the Korean Nuclear Society (KNS), in the SCI. For the SCI, there are 3,750 journals of core (standard) and 4,824 journals of expanded versions; however, NET belongs to the expanded versions. As of January 2014, only 12 Korean journals were listed in the SCI core journals and 90 journals were listed in the expanded version.

2. Analysis of NET and target Journals

The NET was published regularly four times a year from its first publication on September 25, 1969 to December 25, 1994, and since 1995 it has been published six times a year. Currently, the number of KNS members is about 3,500. NET now provides Internet service as an open access resource, and printed copies are distributed to the institutions or libraries for free. The types of literature included in NET are classified into papers of an academic character, invited papers, and technical note (refer to Table I)

Table I. Classification of literature included in NET by type over the last 5 years (2008-2012)

	Invited Papers	Papers	Technical Note	Fore-word	President Message	Congratulatory Message	Total
No. of items	103	247	53	7	1	5	415
Ratio	24.8	59.3	12.8	1.7	0.2	1.2	100

In Table II, the main authors of the literature included in NET are classified as Korean and overseas, and the main authors in Korea are shown to be more than twice the main authors overseas. In Table III, classification of the affiliation of the main authors in Korea is shown and research institutes accounted for about 60%. Among the journals in the same category (Nuclear Science & Technology) as that of NET, 20 journals were selected primarily in accordance with a high impact factor (IF).

Table II. Classification by Korean and overseas of main authors of literature included in NET over the last 5 years

	2008	2009	2010	2011	2012	Total (%)
Korea	39	83	45	47	60	274(68)
Overseas	25	40	22	11	31	129(32)
Total	64	123	67	58	91	403(100)

Table III. Classification of the affiliation of main authors from Korea of literature published in NET over the last 5 years

	2008	2009	2010	2011	2012	Total (%)
Research inst.	24	50	28	24	29	155(57)
Academic circle	10	22	11	14	20	77(28)
Industry	5	11	6	9	11	42(15)
Total	39	83	45	47	60	274(100)

Then, the target journals were chosen and are shown in Table IV. The reason for selection is that the "Journal of Nuclear Science and Technology" (JNST) has been published by the Atomic Energy Society of Japan, "Nuclear Technology" (NT) has been published by the American Nuclear Society, and "Nuclear Engineering and Design" (NED) is a historic journal published by Elsevier. NET and the target journals were subject to a comparative analysis by diverse methods for the period

Table IV. Selection of target journals from 2008 to 2012 including a comparison of the number of included papers and cited literature, analysis

Name of journal	No. of published papers in 2012	Frequency	Impact factor		
			2010	2011	2012
Nuclear Engineering and Design	479	12	0.885	0.765	0.805
Journal of Nuclear Science and Technology	117	12	0.400	0.707	1.033
Nuclear Technology	131	12	0.662	0.601	0.447

by paper type, analysis of data type by cited literature type, IF, Eigen factor, JCR ranking, and the organization of the editing committee. In the Figure 1, the IF trend of three different journals including from NET is shown. The IF of JNST is shown to increase rapidly from 2011, and this is because JNST changed its publication to an overseas publication company, Taylor & Francis, at that time. Subsequently, the papers received greater exposure and their promotion was reinforced.

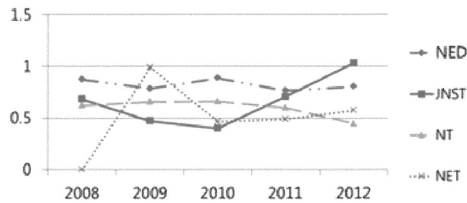


Fig. 1. IF Trend

3. SCI Journals Benchmarking

The result of analyzing NET and the target journals shows that it is necessary to consider transferring the publication of NET to a famous overseas publication company to raise the IF and benchmark famous overseas publication companies. Accordingly, Elsevier, Springer, Taylor & Francis, and John Wiley & Sons were benchmarked. Benchmarking results involve the operation of an independent website in English, transfer of a publication institute to a famous overseas publication company, selection of those with authority as editors, attraction of members to submit papers, and the publication of a small number of strictly selected papers by increasing the paper dropout rate.

4. Method to Pursue Publication in the SCI

Review of the observance of SCI selection criteria and assessment procedure proposed by Thomson Reuters and as a method to pursue listing in the SCI, first, there is a need to attract contributions from member institutes. Detailed methods involve the preparation, maintenance, and distribution of the list of citable papers, encouragement and awards for the citation of NET papers, encouragement of the publication of papers in NET, active attraction of doctoral dissertations in NET, and special consideration of Korean SCIE papers (including NET). Second, it is necessary to reinforce the activities of the NET editing committee. Methods may include the discovery and prompt publication of good papers, opening of an independent website in English, and expansion of internationalization of judges. Third, a promotion and reinforcement method is needed.

5. Conclusion and Proposal for Applications

In order for NET of KNS to grow as an international journal, it must be listed in the SCI. With a view to pursuing this goal, it is imperative to undertake the following efforts. First, many good papers should be attracted. That is, the publication of invited papers should be promoted, and a special edition should be issued with the inclusion of prestigious scientists in Korea and overseas who are able to raise the IF. Also, a contributor should be given direct and indirect incentives, and, above all, academic personnel should be actively involved. Second, internationalization of the journals is needed. In other words, the authors, editors, and reviewers should be more international. In particular, the activities of foreign editors should be fortified. Third, promotion should be reinforced. That is, an independent website of NET should be operated, and in particular, a paper submission system should be composed scientifically. Fourth, the society system should be improved. In other words, for many good papers to be submitted, an institutional improvement is required to revise the regulations under which the results of a citation analysis can be reflected and to strengthen the activities of the editing committee.

In addition, as a result of undertaking an assignment for pursuing the list of NET in the SCI, the following is proposed. First, as a result of benchmarking other institutes, the pursuit of the listing of NET in the SCI is not a goal to be achieved within a single year. It needs continual effort for at least 3 years; thus, it needs full support at the society level. Second, it will be effective to change the currently operated SCI-TFT of NET as a working group in which academic circles, research circles, and industrial circles participate actively, to be established additionally in the society, and to be proceeded with until the goal is achieved. Third, the firm determination of the society president and chief editor toward the goal of being listed in the SCI is the most crucial factor. Furthermore, there should be an effort to create an environment for proceeding toward this goal. Fourth, the transfer of the publication of NET to a famous overseas publication company, which was proposed as the surest method of enhancing the IF, should be actively considered.

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