The Article Analysis of North China Electric Power University in Recent Years

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Abstract. Based on EI, SCI-E and CPCI-S, the articles of North China Electric Power University (NCEPU) authors were collected and analyzed from 2009 to 2014. It listed the articles, the annual growth rate, first author articles and proportion of first author articles by years. Then it analyzed the articles of SCI-E and CPCI-S database and their scientific influence in the world.

Introduction

EI, SCI and CPCI are the three retrieval tools in the world, and the research articles retrieved by the three retrieval tools are always rewarded in universities and scientific research institutions. North China Electric Power University (NCEPU), as one of the “Project 211” universities, is a national key university under the direct jurisdiction of the Ministry of Education (MOE). The university attaches great importance to research work, is committed to raising the level of scientific and academic, has made great achievements in scientific research. Since the Tenth Five-year Plan, the university has assumed more than 1900 vertical projects from major national research and development projects, Project 973, Project 863, National Science Support Plan, and National Natural Science Foundation of China, and won 162 national and provincial Science Progress Awards. This paper collected the articles of NCEPU in EI, SCI-E and CPCI-S from 2009 to 2014, and analyzed them in detail.

Collect the Articles of NCEPU (2009-2014)

The articles of NCEPU authors were collected based on Engineering Village and Web of Science from 2009 to 2014. The author address and author affiliation were restricted to “North China Electric University”, using the wildcard “*” as “n* china elec* power univ*” or the abbreviated form “NCEPU” or the zip code to search the articles of NCEPU. Then the article database of NCEPU was established according to the above articles after manual selection. There were also miss articles with the address or affiliation “Univ N China Elect Power”, “N China Elect Power Ind”, “N China Elect Power Inst” which were not usually used in spell, the missing articles were all added to the database.

There were 14183 EI articles, 2998 SCI-E articles and 4074 CPCI-S articles which were as the following Table1.

Table.1 the distribution, growth trend and the proportion of the first author articles

		2009	2010	2011	2012	2013	2014
EI	Articles	1825	2320	2256	2441	2629	2712
	Growth		27.1%	-2.8%	8.2%	7.7%	3.2%
	First authors	1610	1997	1917	2093	2204	2243
	Proportion of first authors	88.2%	86.1%	85.0%	85.7%	83.8%	82.7%
SCI-E	Articles	225	316	422	543	612	880
	Growth		40.4%	33.5%	28.7%	12.7%	43.8%
	First authors	139	197	289	404	468	670

	Proportion of first authors	61.8%	62.3%	68.5%	74.4%	76.5%	76.1%
CPCI-S	Articles	1072	366	494	840	729	573
	Growth		-65.9%	35.0%	70.0%	-13.2%	-21.4%
	First authors	1068	362	491	839	726	567
	Proportion of first authors	99.6%	98.9%	99.4%	99.9%	99.6%	99.0%

Figure 1. The annual distribution of articles

From Table1 and Fig.1 the articles of EI and SCI-E showed an increasing trend year by year, the SCI-E articles grew more rapidly than EI, from 225 articles to 880 articles. CPCI-S articles were 1072 in 2009 and decreased to 362 in 2010, this showed that the university attached more attention to the quality of articles than only quantities.

From the proportion of first author, the CPCI-S proportion of first author is highest in the three databases, with a proportion of approximately 99%.

Journal Analysis of All the SCI-E Articles

There were 758 journals of all the 2998 SCI-E articles, the journals that had number of articles more than 20 were listed in Table 2. The partition of CAS (Chinese Academy of Sciences), journal impact factor, the total citations and articles of NCEPU from 2009 to 2014 were all listed as follows. The journal “RENEWABLE & SUSTAINABLE ENERGY REVIEWS”, “IEEE TRANSACTIONS ON POWER DELIVERY” and “ENERGY” had the most articles of NCEPU, which were 66, 65 and 57.

Table.2 the journals with more than 20 articles of SCI-E

Journal	Partition of CAS	Journal IF (2013)	Total citations (2013)	Articles
RENEWABLE & SUSTAINABLE ENERGY REVIEWS	1	5.510	15,126	66
IEEE TRANSACTIONS ON POWER DELIVERY	3	1.657	9,325	65
ENERGY	2	4.159	17,799	57
APPLIED ENERGY	1	5.261	15,437	54
MATHEMATICAL PROBLEMS IN ENGINEERING	4	1.082	2,363	48
SCIENCE CHINA-TECHNOLOGICAL SCIENCES	4	1.113	1,467	43
ENERGY POLICY	1	2.696	18,983	41
RENEWABLE ENERGY	2	3.361	13,133	40

ACTA PHYSICA SINICA	4	0.845	8,589	38
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS				36
ENERGIES	3	1.602	1,276	29
INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER	2	2.522	26,902	29
APPLIED THERMAL ENGINEERING	2	2.624	11,248	27
JOURNAL OF HAZARDOUS MATERIALS	1	4.331	55,367	27
CHINESE PHYSICS B	4	1.392	6,188	24
JOURNAL OF ENVIRONMENTAL INFORMATICS	2	3.773	332	24
CHINESE SCIENCE BULLETIN	3	1.365	9,439	23
STOCHASTIC ENVIRONMENTAL RESEARCH AND RISK ASSESSMENT	3	2.673	1,653	23
IEEE TRANSACTIONS ON POWER SYSTEMS	2	3.530	16,619	22

Subject Distribution of SCI-E and CPCI-S

The subject distribution of SCI-E and CPCI-S was analyzed statistically on the platform of Web of Science. From the statistics, “ENGINEERING” was more than a half of all the articles and the top 20 subjects were listed in Table 3.

Table.3 The top 20 subject of NCEPU in SCI-E and CPCI-S

Subject	Articles	Proportion
ENGINEERING	3752	53.531%
ENERGY FUELS	1504	21.458%
MATERIALS SCIENCE	1399	19.960%
COMPUTER SCIENCE	1249	17.820%
AUTOMATION CONTROL SYSTEMS	674	9.616%
PHYSICS	634	9.046%
ENVIRONMENTAL SCIENCES ECOLOGY	491	7.005%
MATHEMATICS	418	5.964%
MECHANICS	417	5.949%
CHEMISTRY	305	4.352%
OPERATIONS RESEARCH MANAGEMENT SCIENCE	295	4.209%
THERMODYNAMICS	244	3.481%
SCIENCE TECHNOLOGY OTHER TOPICS	186	2.654%
INSTRUMENTS INSTRUMENTATION	158	2.254%
BUSINESS ECONOMICS	155	2.211%
TELECOMMUNICATIONS	153	2.183%
CONSTRUCTION BUILDING TECHNOLOGY	147	2.097%
WATER RESOURCES	109	1.555%
NUCLEAR SCIENCE TECHNOLOGY	84	1.198%
OPTICS	82	1.170%
METALLURGY METALLURGICAL ENGINEERING	66	0.942%

Scientific Research Cooperation of SCI-E and CPCI-S

There were 38 various regions & countries and 872 articles that cooperated with NCEPU. The countries were mainly concentrated in Canada, USA, Australia and England.

Figure 2. The regions & countries cooperated with NCEPU and their proportions

There were 803 scientific research institutions that cooperated with NCEPU scattered in 3354 articles. The top 3 were CHINESE ACAD SCI, UNIV REGINA and TSINGHUA UNIV with the proportion of 8.88%, 5.13% and 4.00%.

Table.4 the scientific cooperation institutions of NCEPU in SCI-E and CPCI-S

Cooperation institution	Articles cooperated	Proportion in all articles
CHINESE ACAD SCI	298	8.88%
UNIV REGINA	172	5.13%
TSINGHUA UNIV	134	4.00%
PEKING UNIV	70	2.09%
BEIJING NORMAL UNIV	60	1.79%
HARBIN INST TECHNOL	48	1.43%
XI AN JIAO TONG UNIV	41	1.22%
SHANDONG UNIV	39	1.16%
HEBEI UNIV	39	1.16%
JILIN UNIV	31	0.92%
UNIV SCI TECHNOL BEIJING	30	0.89%
UNIV SCI TECHNOL CHINA	29	0.86%
BEIJING INST TECHNOL	27	0.81%
ZHEJIANG UNIV	25	0.75%
CHINA ELECT POWER RES INST	25	0.75%
NANYANG TECHNOL UNIV	23	0.69%
BEIJING INFORMAT SCI TECHNOL UNIV	23	0.69%
UNIV ADELAIDE	21	0.63%
BEIHANG UNIV	21	0.63%
TIANJIN UNIV	20	0.60%

Analysis on the Influence of NCEPU Articles in the World

There were 2289 articles cited in Web of Science platform, with citing articles of 11817. Of all the citing articles there were 6209 articles in Chinese, the other articles scattered in 117 regions & countries, which reflected the scientific influence of NCEPU in the world.

Figure 3. The regions & countries of citing articles

Conclusion

The paper collected the articles of NCEPU authors in EI, SCI-E and CPCI-S from 2009 to 2014. The articles of EI and SCI-E were increasing year by year, and the articles of SCI-E increased faster than EI. The university paid more and more attention to the scientific research with the increasing of scientific articles. The authors were paying effort to improve the quality of articles than only quantities. So the articles of CPCI-S decreased a lot and SCI-E articles increased rapidly than before.

Articles of "Engineering" subject were over a half of all SCI-E and CPCI-S articles. And there were 803 institutions scattered in 38 regions and countries that cooperated with NCEPU. There were 76% articles that cited in Web of Science with 11817 citing articles from 117 regions & countries.

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