MAPPING OF PHYSICS OUTPUT FROM SELECTED UNIVERSITIES OF INDIA DURING 2001-2010: A STUDY BASED ON WEB OF SCIENCE

Jayendra Kumar Singh,

Research Scholar
Department of Library and Information Science
Banaras Hindu University, Varanasi, Uttar Pradesh, India

ABSTRACT

The present study attempts to analyze the mapping of physics output during the year 2001-2010 as reflected by Web of Science. The study deals 744 contributions (output) of various Indian Universities especially in the field of Physics. It examines the contribution of various universities under heading like publication culture and year wise growth of publication, strong and weak area of physics output with special references to the selected universities in India, contribution of authors of universities in International and National Journals (most preferred journals) and to find out the most prolific authors of the universities and their rank.

Keywords: Physics, Universities, Scientometrics, India.

INTRODUCTION:

After independence one can easily realize that India has achieved significant development in the field of Science and Technology. Physics is considered as a very important branch of Science and Technology. There are numbers of parameter to map out the Physics output of Indian Universities. The main parameters are: Publication counts, Authors productivity, Growth pattern and Core Journal of the concern subject. The publication output of Indian Universities has significantly increased during the past few decades showing Science and Technology development in the Universities. The study aims at the mapping of physics output as covered by the Science Citation Index- Expanded (SCI-E) via Web of Science.

LITERATURE REVIEW:

A number of studies have been done during the last three decade to evaluate the research output/publication output/productivity of Physics in terms of publication share and rank of India in the field of physics output among the top countries in the world, year wise growth, publication culture, strong and weak area of physics subfield with special references to the selected universities in India, contribution of authors of universities in International and National Journals, most prolific authors of the universities and their rank.

In 1998 and 2009, Gupta, B. M., Sharma, L., & Kumar, S. studied about the author productivity and literature growth of Indian physics. A similar study has been also done by Nagpaul, P. S. in 1995 to know about the contribution of Indian Universities in the science stream.

A number of studies have been done by Gupta, B. M & Dhawan S. M to evaluate the research output in the field of Physics in India. (Dhawan, S. M 1988, Dhawan, S. M., & Gupta, B. M 2007, Gupta, B. M., & Dhawan, S. M. 2009 etc).

A similar study has been done by different authors to know about the physics periphery and its subfield (Nagpaul, P. S., & Sharma, L 1994, Pyenson, L., & Singh, M.1997 and Todorov, R. 1995). Pichappan, P (1995) studied about the core journals of science stream.

Barun, T et al 1994, Bhattacharya, S, Singh, S. P. & Sudhakar, P 1997 and Bonilla Calero, A I 2007 etc studied about the productivity in the field of physics in terms of author productivity, literature growth & subject distributions.

Garg, K. C., Dutt, B & Kumar, Suresh showed in his study that 57% of output is concerned with physical sciences, chemical sciences and medical sciences. Indian scientist wants to publish their work in foreign journal also.

In 2010, Husain, S & Mustaq, M studied about the academic ranking of Indian Central Universities in Science and Technology as represented I Science Citation Index- Expanded.

OBJECTIVES OF THE STUDY:

- To analyze the status, publication share and rank of India in the field of physics output among the top 25 countries in the world.
- To study the types of document (Publication culture) and year wise growth of publication output in physics among the universities.
- To identify the strong and weak area of physics (Sub discipline Wise distribution of papers) output with special references to the selected universities in India.
- To analyze the contribution of authors of universities in International and National Journals (most preferred journals).
- To find out the most prolific authors of the universities and their rank.

METHODOLOGY:

The data presented in this paper has been accessed from Web of Science published by Thomson Scientific during the period 2001-2010. All the searched results were saved in text files and then imported into Micro Soft-Excel to organize, analyze and generate the tables, graphs and charts for final study.

RESULTS AND DISCUSSION:

To Analyze the Status, Publication Share and Rank of India in the Field of Physics Output among the Top 25 Countries in the World.

Publication share of top 25 countries in the field of Physics output is given below in the Table1. Global share of publication in the field of Physics shows that out of total publications (183754 publications), 2.954% are contributed by India (5429 publications). During the period 2001-2010, USA contributed 35.279% followed by Japan (11.196%), Germany (11.125%), Peoples R China (8.981%), France (7.681%), England (7.058%) and Italy (5.506%) respectively. India ranked at 12 positions among the top 25 countries. USA ranked at top

position with 64826 publications while Austria ranked at bottom position with 1833 publications.

Table 1: Global share and rank of India in the field of physics output

(Top 25 Countries)

S. NO.	Countries/Territories	records	% of 183754	Rank
1	USA	64826	35.279	1
2	JAPAN	20574	11.196	2
3	GERMANY	20442	11.125	3
4	PEOPLES R CHINA	16503	8.981	4
5	FRANCE	14114	7.681	5
6	ENGLAND	12969	7.058	6
7	ITALY	10118	5.506	7
8	RUSSIA	7644	4.16	8
9	SOUTH KOREA	7520	4.092	9
10	SPAIN	6400	3.483	10
11	CANADA	6369	3.466	11
12	**INDIA**	**5429**	**2.954**	**12**
13	SWITZERLAND	5140	2.797	13
14	TAIWAN	4854	2.642	14
15	NETHERLANDS	4228	2.301	15
16	SWEDEN	3585	1.951	16
17	AUSTRALIA	3435	1.869	17
18	POLAND	3267	1.778	18
19	BRAZIL	3103	1.689	19
20	ISRAEL	2678	1.457	20
21	BELGIUM	2655	1.445	21
22	SINGAPORE	2427	1.321	22
23	UKRAINE	2142	1.166	23
24	SCOTLAND	1842	1.002	24
25	AUSTRIA	1833	0.998	25

TOP 75 INDIAN INSTITUTIONS/ORGANIZATIONS IN THE FIELD OF PHYSICS:

During 2001-2010, about 5429 papers are contributed by India. Out of 5429 papers, 744 papers are contributed by four Indian Universities named University of Delhi, Panjab University, University of Hyderabad and Banaras Hindu University. Among the four Indian Universities, University of Delhi topped with 291 publications followed by Panjab University with 240 publications, University of Hyderabad with 109 publications and Banaras Hindu University with 104 publications respectively.

Table 2: Top 75 Indian Institutions/Organizations in the field of Physics

S. No.	Organizations-Enhanced	records	% of 5429	Rank
1	INDIAN INST TECHNOL	1027	18.917	1
2	TATA INST FUND RES	573	10.554	2
3	IISC BANGLORE	551	10.149	3
4	BHABHA ATOM RES CTR	380	6.999	4
5	UNIV DELHI	291	5.36	5
6	PANJAB UNIV	240	4.421	6
7	UNIV CALIF SYSTEM	230	4.237	7
8	INDIAN ASSOC CULTIVAT SCI	227	4.181	8
9	INST HIGH ENERGY PHYS	222	4.089	9
10	INST THEORET EXPT PHYS	197	3.629	10
11	UNIV MARYLAND	191	3.518	11
12	SAHA INST NUCL PHYS	189	3.481	12
13	PRINCETON UNIV	178	3.279	13

14	KOREA UNIV	166	3.058	14
15	UNIV SCI & TECHNOL CHINA	163	3.002	15
16	UNIV ILLINOIS SYSTEM	160	2.947	16
17	BROOKHAVEN NATL LAB	158	2.91	17
18	SUNY SYSTEM	152	2.8	18
19	LOMONOSOV MOSCOW STATE UNIV	151	2.781	19
20	PRES UNIV LYON	151	2.781	19
21	FIRAT UNIV	150	2.763	20
22	NORTHEASTERN UNIV	149	2.745	21
23	FLORIDA STATE UNIV	146	2.689	22
24	RWTH AACHEN UNIV	146	2.689	22
25	UNIV LYON 1	146	2.689	22
26	SN BOSE NATL CTR BASIC SCI	145	2.671	23
27	SUNGKYUNKWAN UNIV	145	2.671	23
28	FERMI NATL ACC LAB	144	2.652	24
29	UNIV NOTRE DAME	139	2.56	25
30	PURDUE UNIV	138	2.542	26
31	UNIV AMSTERDAM	138	2.542	26
32	UNIV LONDON IMPERIAL COLL SCI TECHNOL MED	137	2.523	27
33	IOWA STATE UNIV	136	2.505	28
34	UNIV MICHIGAN	136	2.505	28
35	COLUMBIA UNIV	134	2.468	29
36	RICE UNIV	134	2.468	29
37	UNIV ROCHESTER	133	2.45	30
38	UNIV TECN LISBON	133	2.45	30
39	NORTHWESTERN UNIV	132	2.431	31
40	BOSTON UNIV	130	2.395	32
41	UNIV KANSAS	130	2.395	32
42	BROWN UNIV	128	2.358	33
43	CZECH ACAD SCI	128	2.358	33
44	RADBOUD UNIV NIJMEGEN	128	2.358	33
45	UNIV VIRGINIA	128	2.358	33
46	INST PLASMA RES	127	2.339	34
47	JOINT INST NUCL RES	127	2.339	34
48	UNIV NEBRASKA SYSTEM	126	2.321	35
49	KANSAS STATE UNIV	124	2.284	36
50	UNIV ANDES CHILE	120	2.21	37
51	UNIV WASHINGTON	120	2.21	37
52	MICHIGAN STATE UNIV	119	2.192	38
53	TOMSK POLYTECH UNIV	118	2.174	39
54	UNIV MISSISSIPPI	118	2.174	39
55	INDIANA UNIV	117	2.155	40
56	IST NAZL FIS NUCL	117	2.155	40
57	PETERSBURG NUCL PHYS INST	117	2.155	40
58	JOHANNES GUTENBERG UNIV MAINZ	116	2.137	41
59	UNIV ESTADO RIO DE JANEIRO	116	2.137	41
60	NATL PHYS LAB	115	2.118	42
61	JAWAHARLAL NEHRU CTR ADV SCI RES	114	2.1	43
62	UNIV PARIS DIDEROT - PARIS VII	114	2.1	43
63	JOSEPH FOURIER UNIV	113	2.081	44
64	PIERRE & MARIE CURIE UNIV - PARIS 6	112	2.063	45
65	CHARLES UNIV PRAGUE	111	2.045	46

66	UNIV COLL DUBLIN	111	2.045	46
67	CNRS	109	2.008	47
68	UNIV BONN	109	2.008	47
69	UNIV HYDERABAD	**109**	**2.008**	**47**
70	UNIV ESTADUAL PAULISTA	108	1.989	48
71	UNIV MANCHESTER	108	1.989	48
72	UNIV LANCASTER	107	1.971	49
73	CINVESTAV	106	1.952	50
74	CTR BRASILEIRO PESQUISAS FIS	106	1.952	50
75	BANARAS HINDU UNIV	**104**	**1.916**	**51**

PUBLICATION CULTURE AMONG THE INDIAN UNIVERSITIES:

Table 3 shows that the maximum numbers of publications are in the form of articles. Out of 744 publications 723 (97.17%) are in the form of articles followed by Review 17 (2.28%), Editorial materials 3 (0.40%) and Book Review 1(0.13%) respectively. University of Delhi topped with 291 publications while least publication has been published by Banaras Hindu University. (104 publications).University of Delhi produced maximum number of articles (286) articles during the year 2001-2010. During the year 2001-2010, University of Delhi has produced maximum percentage (39.11%) of publications followed by the Panjab University (32.25%), University of Hyderabad (14.65%) and Banaras Hindu University (13.97%) respectively.

Table 3 Publication Culture

S. No.	Universities	Types of Document				Total	%
		Article	Review	Book Review	Editorial Material		
1	UOD	286	3	1	1	291	39.11
2	PAU	236	4			240	32.25
3	UOH	106	3			109	14.65
4	BHU	95	7		2	104	13.97
Total	**Four Universities**	**723**	**17**	**1**	**3**	**744**	**100**

UOD= University of Delhi, PAU=Panjab University, UOH=University of Hyderabad & BHU= Banaras Hindu University

YEAR WISE DISTRIBUTION OF PUBLICATIONS:

Table 4 shows the distribution of publications by the year. Total 744 papers have been published by the four Indian Universities during the year 2001-2010. The maximum number of publications has been published in the year 2010 contributing 146 publications (19.62%) followed by 109 publications (14.65%) in the year 2009, 102 publications (13.70%) in the 2007 and 99 publications (13.30%) in the year 2008. The minimum numbers of publications 34(4.56%) were published in the year 2001and 2003.

Table 4. Year wise distribution of publications

S. No.	Year	Name of Universities				Total	%
		UOD	PAU	UOH	BHU		
1	2001	11	10	6	7	34	4.56
2	2002	17	12	11	4	44	5.91
3	2003	16	7	5	6	34	4.56
4	2004	19	7	10	5	41	5.51
5	2005	26	25	12	7	70	9.40
6	2006	28	19	10	8	65	8.73
7	2007	37	33	12	20	102	13.70
8	2008	39	34	16	10	99	13.30
9	2009	42	36	12	19	109	14.65

10	2010	56	57	15	18	146	19.62
Total	**10 years**	**291**	**240**	**109**	**104**	**744**	**100**
Rank		**1**	**2**	**3**	**4**		

It is also seen from the Graph1 (Fig 1) that maximum number of publications are published in the year 2010 while least number of publications are published in the year 2001 and 2003.

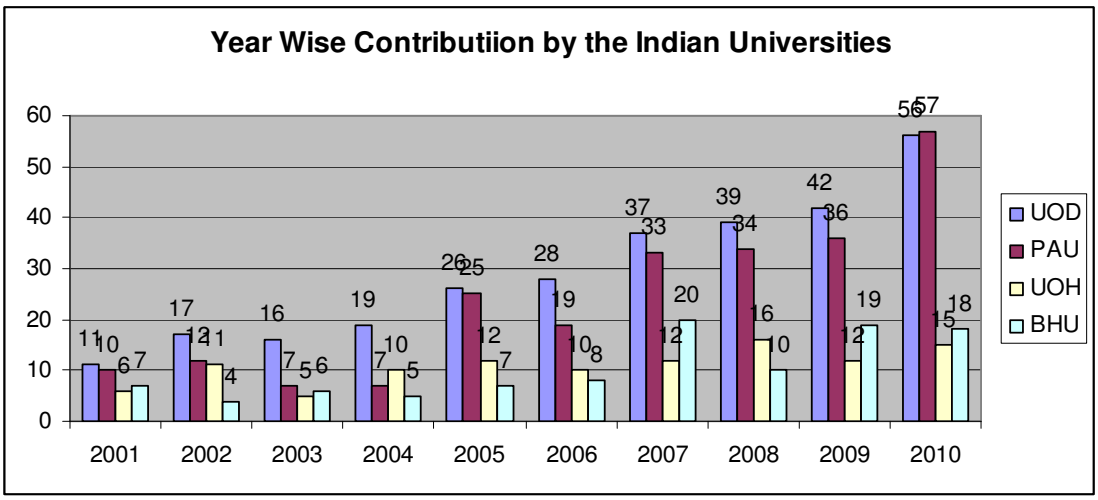

Fig. 1 Year Wise Contribution by the Indian Universities

SUB DISCIPLINE WISE DISTRIBUTION OF PAPERS:

Out of 975 publications, the highest numbers of publications are in the field of multidisciplinary physics contributing 243(24.92%) papers followed by particles physics with 167(17.12%) papers, applied physics with 152 (15.58%) papers, astrophysics with 118 (12.10%) papers and instrumental with 56(5.74%) papers respectively.
Computer Science Interdisciplinary applications, Engineering Multidisciplinary, Information Science-Library Science, Geochemistry-Geophysics and Material Science Ceramic each contributed only one paper(least number of publication). In sub discipline, the highest number of publication has been contributed by University of Delhi with 391(40.10%) papers followed by Panjab University with 310 (31.79%) papers, University of Hyderabad with 138(14.15%) papers and Banaras Hindu University with 136(13.94%) papers respectively.

Table 5 Sub discipline Wise distribution of papers

S. NO.	Web of Science Categories	records UOD	PAU	BHU	UOH	Total	%
1	Physics Multidisciplinary	91	123	14	15	243	24.92
2	Physics Applied	74	7	46	25	152	15.58
3	Physics Particles Fields	64	75	5	23	167	17.12
4	Astronomy Astrophysics	41	53	9	15	118	12.10
5	Instruments Instrumentation	28	25	2	1	56	5.74
6	Physics Fluids Plasmas	17	1	3		21	2.15
7	Engineering Electrical Electronic	14		3		17	1.74
8	Physics Condensed Matter	12		4	1	17	1.74
9	Materials Science Multidisciplinary	6		3		9	0.923
10	Nuclear Science Technology	6	4	1	1	12	1.23
11	Physics Nuclear	6	11	3	5	25	2.56
12	Spectroscopy	6	4	2		12	1.23
13	Education Scientific Disciplines	4		2		6	0.615
14	Multidisciplinary Sciences	4	3	2	1	10	1.02
15	Physics Atomic Molecular	4	3	10	34	51	5.23

	Chemical						
16	Nanoscience Nanotechnology	3		2		5	0.512
17	Optics	3		6		9	0.923
18	Physics Mathematical	3		2	12	17	1.74
19	Energy Fuels	2				2	0.205
20	Mathematics Applied	2		1		3	0.307
21	Chemistry Physical	1		2	3	6	0.615
22	Mechanics		1	1		2	0.205
23	Geosciences Multidisciplinary			4		4	0.410
24	Meteorology Atmospheric Sciences			4		4	0.410
25	Telecommunications			2		2	0.205
26	Computer Science Interdisciplinary Applications			1		1	0.102
27	Engineering Multidisciplinary			1		1	0.102
28	Geochemistry Geophysics			1		1	0.102
29	Information Science Library Science			1		1	0.102
30	Materials Science Ceramics			1		1	0.102
Total	**30 Sub fields**	**391**	**310**	**138**	**136**	**975**	**100**

MOST PREFERRED JOURNALS LIKED BY INDIAN UNIVERSITIES:

Indian Universities in the field of Physics preferred to publish their papers in the journals listed in Table 6. The most productive journal is Physical Letters with 119 papers and 15.99% of all the papers published in this field. The 2nd most productive journal is Physical Review D with 110 papers (14.78%) followed by Journal of Applied Physics with 94 papers (12.63%) , Physics Letters B with 87 papers(1169%), Journal of Chemical Physics with 49 papers (6.58%), Journal of Instrumentation with 41 papers (5.51%) and Applied Physics Letters with 36 papers (4.83%) respectively. Out of 83 journals, 45 journals contributed minimum number of paper, each contributed one paper.

Table 6. Most Preferred Journals liked by Indian Universities

SN	Source Titles	UOD	PAU	UOH	BHU	Total	%
1	Journal Of Applied Physics	45	6	16	27	94	12.63
2	Physical Review Letters	45	68	1	5	119	15.99
3	Physical Review D	39	53	14	4	110	14.78
4	Physics Letters B	31	50	5	1	87	11.69
5	Journal Of Instrumentation	21	20			41	5.51
6	Physics Of Plasmas	16			3	19	2.55
7	Applied Physics Letters	15		6	15	36	4.83
8	European Physical Journal C	6	11	2		19	2.55
9	Nuclear Instruments Methods In Physics Research Section A Accelerators Spectrometers Detectors And Associated Equipment	6	4		1	11	1.47
10	Pramana Journal Of Physics	6	4	6	3	19	2.55
11	Journal Of High Energy Physics	5	4	1		10	1.34
12	Solid State Electronics	5				5	0.67
13	Journal Of Chemical Physics	4	3	33	9	49	6.58
14	Semiconductor Science And Technology	4				4	0.53
15	Current Science	3		1	1	5	0.67
16	Journal Of Physics G Nuclear And Particle Physics	3	2	1		6	0.80
17	American Journal Of Physics	2			2	4	0.53
18	Chaos	2				2	0.26
19	European Journal Of Physics	2				2	0.26

20	Indian Journal Of Pure Applied Physics	2				2	0.26
21	International Journal Of Modern Physics A	2				2	0.26
22	Journal Of Renewable And Sustainable Energy	2				2	0.26
23	Microelectronics Journal	2				2	0.26
24	Applied Physics Express	1		1		2	0.26
25	Astrophysical Journal	1				1	0.13
26	Electronics Letters	1				1	0.13
27	European Physical Journal Applied Physics	1				1	0.13
28	Fortschritte Der Physik Progress Of Physics	1				1	0.13
29	Ieee Transactions On Electron Devices	1			1	2	0.26
30	International Journal Of Theoretical Physics	1		1		2	0.26
31	Japanese Journal Of Applied Physics	1		1	1	3	0.40
32	Journal Of Cosmology And Astroparticle Physics	1		1		2	0.26
33	Journal Of Optoelectronics And Advanced Materials	1				1	0.13
34	Journal Of Physics D Applied Physics	1		1		2	0.26
35	Journal Of Plasma Physics	1				1	0.13
36	Microelectronic Engineering	1				1	0.13
37	Modern Physics Letters A	1		3		4	0.53
38	Nature	1	2			3	0.40
39	Nuclear Physics B	1		1		2	0.26
40	Optical Engineering	1				1	0.13
41	Physica Status Solidi A Applied Research	1				1	0.13
42	Physics And Chemistry Of Liquids	1				1	0.13
43	Physics Letters A	1				1	0.13
44	Review Of Scientific Instruments	1	1			2	0.26
45	Superlattices And Microstructures	1				1	0.13
46	Transactions Of The Charles S Peirce Society	1				1	0.13
47	Physical Review C		7		3	10	1.34
48	European Physical Journal A		1			1	0.13
49	Nuclear Physics A		1			1	0.13
50	Physica Scripta		1			1	0.13
51	Physics Of Fluids		1			1	0.13
52	Science		1			1	0.13
53	Journal Of Mathematical Physics			7		7	0.94
54	Accounts Of Chemical Research			1		1	0.13
55	Journal Of Physical Chemistry B			1		1	0.13
56	Journal Of Physics A Mathematical And Theoretical			1		1	0.13
56	Nuclear Instruments Methods In Physics Research Section B Beam Interactions With Materials And Atoms			1		1	0.13
57	Reviews In Mathematical Physics			1		1	0.13
58	Surface Review And Letters			1		1	0.13
59	Zeitschrift Fur Naturforschung Section A A Journal Of Physical Sciences			1	1	2	0.26
60	Annales Geophysicae				2	2	0.26
61	Digest Journal Of Nanomaterials And Biostructures				2	2	0.26
62	Physical Review B				2	2	0.26
63	Advances In Space Research				1	1	0.13
64	Computer Physics Communications				1	1	0.13

65	Iau Symposia				1	1	0.13
66	Iee Proceedings Optoelectronics				1	1	0.13
67	Infrared Physics Technology				1	1	0.13
68	International Journal Of Nonlinear Sciences And Numerical Simulation				1	1	0.13
69	Journal Of Astrophysics And Astronomy				1	1	0.13
70	Journal Of Earth System Science				1	1	0.13
71	Journal Of Modern Optics				1	1	0.13
72	Journal Of Physical And Chemical Reference Data				1	1	0.13
73	Journal Of Physics Condensed Matter				1	1	0.13
74	Journal Of Quantitative Spectroscopy Radiative Transfer				1	1	0.13
75	Journal Of The American Ceramic Society				1	1	0.13
76	Optics Communications				1	1	0.13
77	Optoelectronics And Advanced Materials Rapid Communications				1	1	0.13
78	Physical Review A				1	1	0.13
79	Physics Reports Review Section Of Physics Letters				1	1	0.13
80	Progress In Electromagnetics Research Pier				1	1	0.13
81	Recent Insights Into The Physics Of The Sun And Heliosphere Highlights From Soho And Other Space Missions				1	1	0.13
82	Solid State Communications				1	1	0.13
83	Surveys In Geophysics				1	1	0.13
Total	**83 Journals**	**291**	**240**	**109**	**104**	**744**	**100**

MOST PROLIFIC AUTHOR OF INDIAN UNIVERSITIES:

Out of 37 authors, Banerjee S topped with 139 papers (Affiliated to Panjab University) followed by Shivpuri RK (Affiliated to University of Delhi) with 129 papers, Gavrilov V (Affiliated to Panjab University) with 122 papers, Beri SB (Affiliated to Panjab University), Beuselinck R (Affiliated to University of Delhi) with 121 papers , Bean A (Affiliated to Panjab University) with 120 papers respectively. Ellison J (Affiliated to Panjab University) and Hadley NJ (Affiliated to University of Delhi) are the least productive authors each contributing with 101 papers.

Table 7. Top 25 most prolific authors of the Indian Universities

S. No	Name of the Author	Productivity Count	Affiliation	Rank
1	BANERJEE S	139	Panjab University	1
2	SHIVPURI RK	129	University of Delhi	2
3	GAVRILOV V	122	Panjab University	3
4	BERI SB	121	Panjab University	4
5	BEUSELINCK R	121	University of Delhi	4
6	BEAN A	120	Panjab University	5
7	GERSHTEIN Y	120	University of Delhi	5
8	DEMINA R	119	Panjab University	6
9	BUEHLER M	119	University of Delhi	6
10	ALVES GA	118	Panjab University	7
11	BANERJEE S	118	University of Delhi	7
12	BARINGER P	117	Panjab University	8
13	BARBERIS E	117	University of Delhi	8
14	JAIN S	116	Panjab University	9
15	ALVES GA	116	University of Delhi	9
16	BARINGER P	115	University of Delhi	10
17	JAIN S	114	University of Delhi	11

18	BOSE T	113	Panjab University	12
19	LI J	111	Panjab University	13
20	BOSE T	111	University of Delhi	13
21	FILTHAUT F	110	Panjab University	14
22	AVILA C	109	Panjab University	15
23	IASHVILI I	108	University of Delhi	16
24	ASKEW A	107	Panjab University	17
25	AVILA C	107	University of Delhi	18
26	ALVERSON G	106	Panjab University	19
27	ASKEW A	106	University of Delhi	20
28	DAVIES G	105	Panjab University	21
29	ATRAMENTOV O	105	University of Delhi	21
30	ADAMS T	104	Panjab University	22
31	ALVERSON G	104	University of Delhi	22
32	HADLEY NJ	103	Panjab University	23
33	ADAMS T	103	University of Delhi	23
34	CHANDRA A	102	Panjab University	24
35	HAYS J	102	University of Delhi	24
36	ELLISON J	101	Panjab University	25
37	HADLEY NJ	101	University of Delhi	25

CONCLUSION:

The present study focuses on contributions made by the selected Indian Universities in the field of physics during 2001-2010. Total 744 contributions have been made by the four Indian Universities during the period 2001-2010. During the study period, University of Delhi has produced maximum percentage (39.11%) of publications followed by the Panjab University (32.25%), University of Hyderabad (14.65%) and Banaras Hindu University (13.97%) respectively. The study also shows that maximum number of publication (146) has been published in the year 2010 by the four Indian Universities. A majority of work has been done upon the area of Physics Multidisciplinary (24.92%) followed by Physics Particle Field (17.12%), Physics Applied (15.58%), Astronomy Astrophysics (12.10%) and Instrument Instrumentation (5.74%) respectively. A very little work had been done in the field of Computer Science Interdisciplinary Applications, Engineering Multidisciplinary, Geochemistry-Geophysics, and Material Science Ceramics. Each field contributed only one paper (0.102%).The most productive journals are Physical Review Letters with 119 publications (15.99%) followed by Physical Review D with 110 publications (14.78%), Journal of Applied Physics with 94 publications (12.63%) and Physics Letters B with 87 publications (11.69%) respectively. In the most productive authors list Banerjee, A affiliated to Panjab University at the first rank with 139 publications followed by Shivpuri, RK (affiliated to University of Delhi) at the 2nd rank with 129 papers, Gavrilov, V (affiliated to Panjab University) at the 3rd rank with 122 papers, Beri, SB (affiliated to Panjab University) at the rank 4th with 121 publications and Bean, A (Panjab University) at rank 5th with 120 publications. The research output/publication productivity made by Indian Universities in the field of physics is not satisfactory as compared to the universities of developed countries like USA, Japan, Germany etc. Special attention should be given to the universities for improving their quality & quantity of research outputs. More attention should be given from the author community to increase their productivity level in foreign periodicals. It is quite evident that technological infrastructure and research funds are necessary prerequisites to overcome this problem.

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