RPE 06: Databases and Research Metrics (7 Hrs)

1. Indexing databases
2. Citation database's: Web of Science, Scopus, etc.

Impact Factor of journal as per journal citation report, SNIP, SJR, IPP, Cite Score. Metrics: h-index, g index, i10 index

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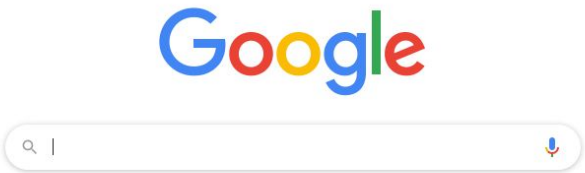
Sources of information



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Publishers

https://www.sciencemag.org/
https://www.nature.com/
IEEE https://ieeexplore.ieee.org/
Elesvier: https://www.sciencedirect.com/
American Institute of Physics: https://www.aip.org/
American Chemical Society: https://pubs.acs.org/
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Year
Volume
Issue
Page Number/Article Number

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Showing **1-25** of **49** for **Power of fuel cell** ×

Filters Applied: Books ×

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Sort By: Relevance

☐ **Chapter 10 Multi-Objective Optimization of Fuel Cell Hybrid Vehicle Powertrain Design—Cost and Energy**

David Wood

Impacting Commercialization of Rapid Hydrogen Fuel Cell Electric Vehicles (FCEV): System Cost

What is Literature search

Lets do it

Publications

Index Journals

- Scopus Indexed Journals
- Web of Science Index
- PubMed Index
- IEEE Index
- Indian Citation Index
- **Google Scholar**

Non-Index Journals

Low Quality Journals
Less Recognition
Less Impact on Research

Nature Index Database is

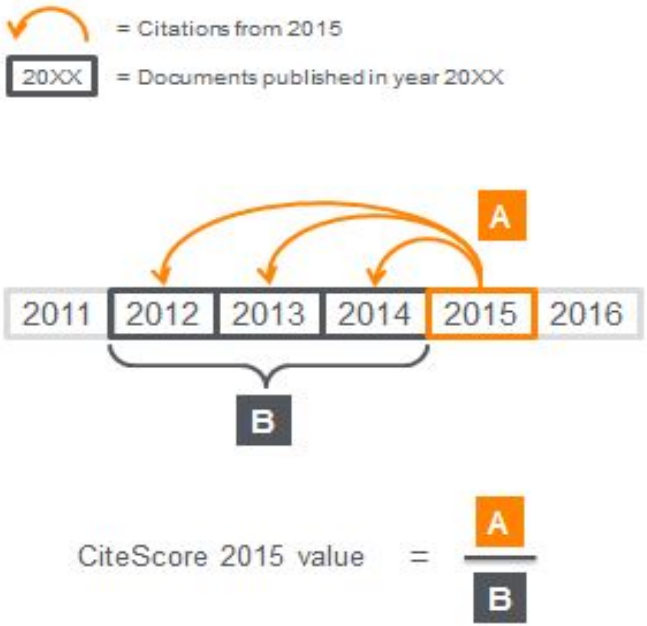
a database of author affiliation information collated from research articles published in an independently selected group of 83 high-quality science journals.

Scopus Indexed Journals

- **Scopus** is Elsevier's abstract and citation database launched in 2004.
- In 2009, the Content Selection and Advisory Board (CSAB) was formed
- Scopus covers nearly 36,377 titles (22,794 active titles and 13,583 Inactive titles) from approximately 11,678 publishers, of which 34,346 are peer-reviewed journals in top-level subject fields Life Sciences, Social Sciences, Physical Sciences and Health Sciences.

Scopus gives four types of quality measure for each title;

- *h*-Index
- CiteScore
- SJR (SCImago Journal Rank)
- SNIP (Source Normalized Impact per Paper).



h number of articles cited by minimum h number of articles

SOURCE NORMALIZED IMPACT PER PAPER (SNIP)

journal's citation count per paper

citation potential in its subject field

The impact of a single citation will have a higher value in subject areas where citations are less likely, and vice versa. Stability intervals indicate the reliability of the score. Smaller journals tend to have wider stability intervals than larger journals.

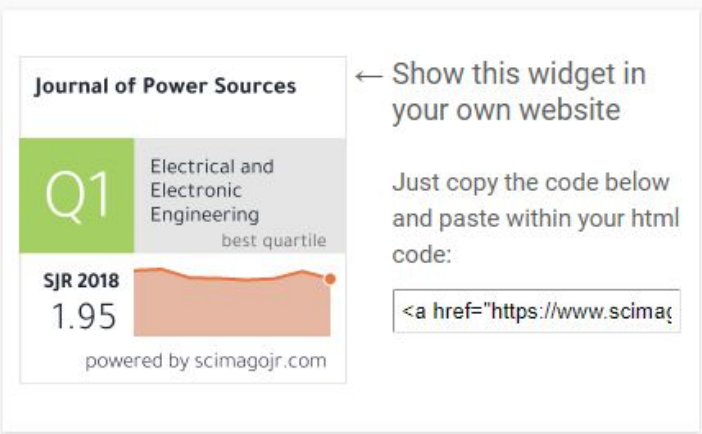
SCImago Journal Rank (SJR indicator) is a measure of scientific influence of scholarly journals that accounts for both the number of citations received by a journal and the importance or prestige of the journals where such citations come from.

The **SCImago Journal & Country Rank** is a publicly available portal that includes the journals and country scientific indicators developed from the information contained in the Scopus® database (Elsevier B.V.).

Journals can be grouped by subject area (27 major thematic areas), subject category (313 specific subject categories) or by country.

Citation data is drawn from over 34,100 titles from more than 5,000 international publishers and country performance metrics from 239 countries worldwide.

The SJCR allows you also to embed significative journal metrics into your web as a clickable image widget


Journal of Power Sources
Q1
Electrical and Electronic Engineering
best quartile
SJR 2018
1.95
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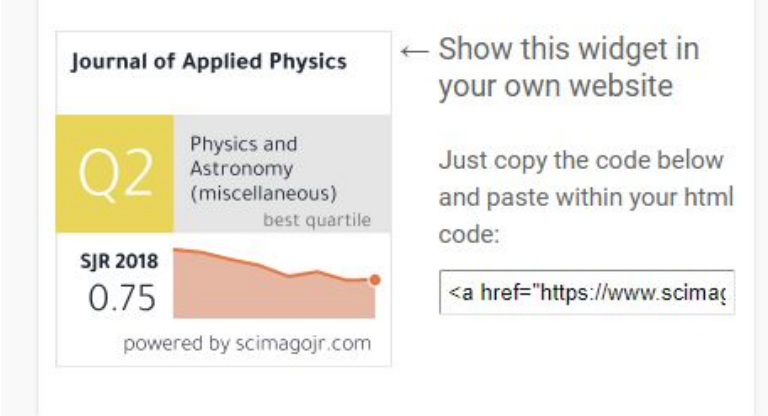
Journal of Applied Physics
Q2
Physics and Astronomy (miscellaneous)
best quartile
SJR 2018
0.75
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IEICE Electronics Express
Q3
Electrical and Electronic Engineering
best quartile
SJR 2018
0.2
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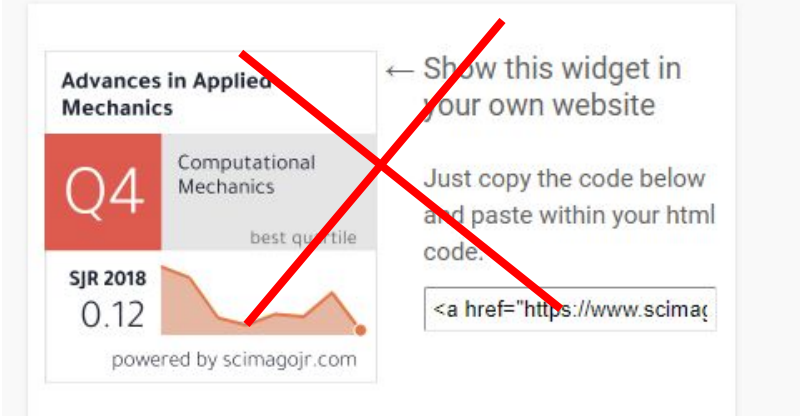
Advances in Applied Mechanics
Q4
Computational Mechanics
best quartile
SJR 2018
0.12
powered by scimagojr.com
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Few Information

According to the Scimago Journal Rankings,

- Nature has the highest *h*-index (1096 as of 2019),
- CA - A Cancer Journal for Clinicians has the highest SJR (72.576 as of 2019).
- **USA** (*h*-index : 2222) is in first place, **UK** (*h*-index : 1373) is in the second place and **Germany** (*h*-index : 1203) is in third place based on national *h*-index.

India 21st position h-index: 570

Web of Science Index

Acceptable content for Web of Science is determined by an evaluation and selection process based on the following criteria: impact, influence, timeliness, peer review, and geographic representation

Impact Factor

$$\mathrm{IF}_y = \frac{\mathrm{Citations}_{y-1} + \mathrm{Citations}_{y-2}}{\mathrm{Publications}_{y-1} + \mathrm{Publications}_{y-2}}$$

For example, *Nature* had an impact score of 41.456 in 2014:[2]

$$\mathrm{IF}_{2014} = \frac{\mathrm{Citations}_{2013} + \mathrm{Citations}_{2012}}{\mathrm{Publications}_{2013} + \mathrm{Publications}_{2012}} = \frac{29753 + 41924}{860 + 869} = 41.456$$

Name of the Journal	Year of Publication	No. of Articles published	Overall citations of the articles in the year 2018
Y	2016	M (Ex: 50)	A (Ex: 25)
Y	2017	N (Ex: 70)	B (Ex: 35)

Impact factor of Journal "Y" in the year 2018 is = $\frac{A+B}{M+N}$

IF of Journal "Y" in the year 2018 = $\frac{25+35}{50+70} = \frac{60}{120} = 0.5$

Journal Impact Factor

- Number of citations to a journal in a given year from articles occurring in the past 2 years, divided by the number of scholarly articles published in the journal in the past 2 years

100	Citing references appearing in 2019, to articles published in Journal in 2017 and 2018
200	Total number of articles in Journal published in 2017 and 2018
0.50	**JIF of Year 2019**

5 Year Journal Impact Factor

- Number of citations to a journal in a given year from articles occurring in the past 5 years, divided by the number of scholarly articles published in the journal in the past 5 years

2500	Citing references appearing in 2019, to articles published in Journal in 2014 and 2018
2000	Total number of articles in Journal published in 2014 and 2018
1.25	**5 Year IF of Year 2019**

Immediacy Index

- The Immediacy Index is the average number of times an article is cited in the year it is published.
- The **journal Immediacy Index** indicates how quickly articles in a journal are cited.
- The **aggregate Immediacy Index** indicates how quickly articles in a subject category are cited.

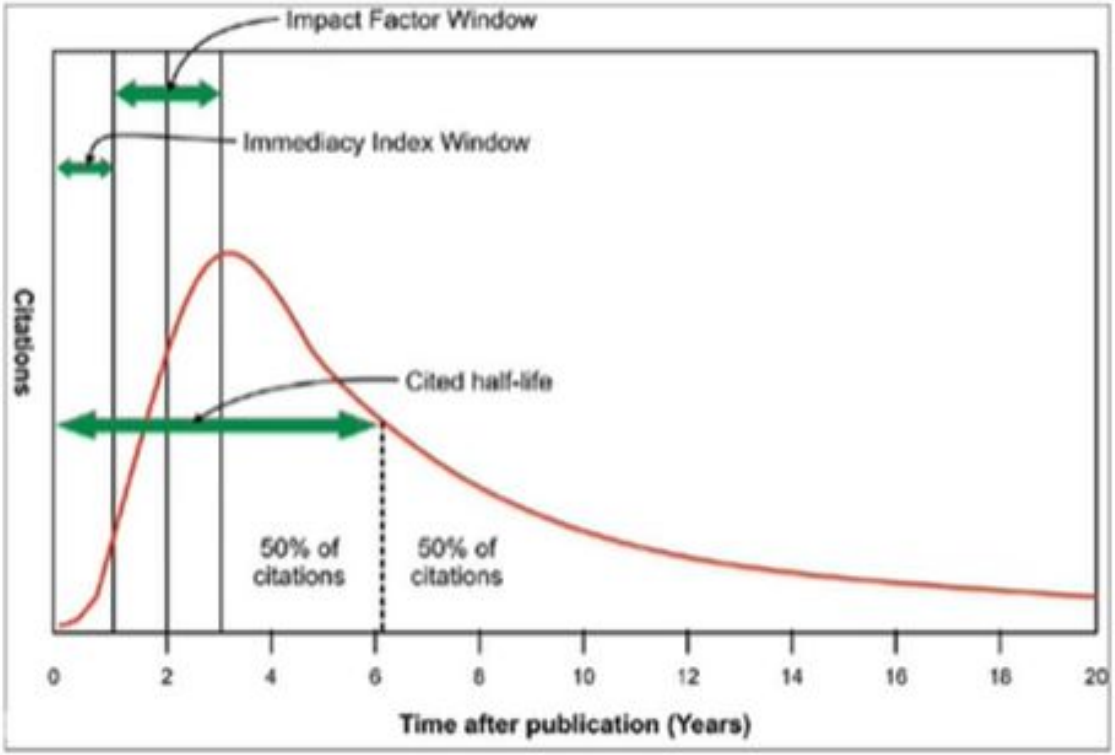
250	Citing references appearing in 2019, to articles published in Journal in 2019
1000	Total number of articles in Journal published in 2019
0.25	**Immediacy Index of Year 2019**

Cited Half Life

Median age of the articles that were cited in the JCR year.

All the citations earned by Journal X (citing year = JCR year) to any year are essentially lined up in order of the cited item publication year. This body of citations is then split in half. The "location" of this split is the Cited Half-Life.

TIMEFRAME OF INDEXES



Amin M, Mabe M. Impact factors use and abuse. Perspectives in publishing N1, 2000, Elsevier

Researcher Indicator

Impact Factor – Fast indicator
Citation – Wait long
Your Contribution in the work
Scopus/WoS index Journals

Hit these journals or Nature Index Journal

Science
Nature Group Journals
PNAS
Willy Journals: Advance Materials, SMALL etc
APS Journals: PRL, PRX, PRB, etc
ACS Journals: JACS, ACS Nano, ACS Catalyst, JPCC
RSC Journals: Nanoscale, JMCA, PCCP, etc.
IOP Journals: 2D Materials, Nanotechnology, JPCM
AIP Journals: APL, JCP
Elsevier Journals: SEM&SC, Journal of Catalysis, etc
IEEE Journals: IEEE Transactions…

Affiliation and Authorship

1. Corresponding Author/ First Author

Design/conceive the study
Writes first draft
Partners with last author for subsequent drafts

Last author

Usually experienced investigator who partners with first author in interpretation, analysis, and writing

2. Second Author

3. Co-author

4. Two affiliation (During Initial year after joining)

Metrics: h-index, g index, i10 index

https://www.youtube.com/watch?v=WKDmC7q_scw

h-Index (Manual Calculation)

Publication	Citations
P-1	26
P-2	12
P-3	06
P-4	11
P-5	02
P-6	29
P-7	14
P-8	11
P-9	07
P-10	15
P-11	09
P-12	04

Rank	Citations	Publication
01	29	P-6
02	26	P-1
03	15	P-10
04	14	P-7
05	12	P-2
06	11	P-4
07	11	P-8
08	09	P-11
09	07	P-9
10	06	P-3
11	04	P-11
12	02	P-5

h-Index (Comparison)

Author A		Author B		Author C	
Rank	Citations	Rank	Citations	Rank	Citations
1	11	1	36	1	220
2	7	2	24	2	180
3	7	3	23	3	80
4	7	4	15	4	44
5	6	5	6	5	30
6	6	6	3	6	2
7	3	7	2	7	1
8	0	8	1	8	1

i10-Index (Manual Calculation)

Publication	Citations
P-1	26
P-2	12
P-3	06
P-4	11
P-5	02
P-6	29
P-7	14
P-8	11
P-9	07
P-10	15
P-11	09
P-12	04

Rank	Citations	Publication
01	29	P-6
02	26	P-1
03	15	P-10
04	14	P-7
05	12	P-2
06	11	P-4
07	11	P-8
08	09	P-11
09	07	P-9
10	06	P-3
11	04	P-11
12	02	P-5

G-INDEX

- The *G-index* was proposed by Leo Egghe in his paper *"Theory and Practice of the G-Index"* Scientometrics, Vol. 69, No. 1 in 2006 as an improvement on the *h-Index*.

The *G-Index* is the (unique) largest number such that the top **G** articles (together) received at least $\mathbf{G^2}$ citations."

G-Index (Manual Calculation)

Publication	Citation (C)
P-1	26
P-2	12
P-3	06
P-4	11
P-5	02
P-6	29
P-7	14
P-8	11
P-9	07
P-10	15
P-11	09
P-12	04

Rank (r)	Citations (C)	$\sum C$	r^2
01	29	29	01
02	26	55	04
03	15	70	09
04	14	84	16
05	12	96	25
06	11	107	36
07	11	118	49
08	09	127	64
09	07	134	81
10	06	140	100
11	04	144	121
12	02	146	144

G-Index (Comparison)

Author A				Author B				Author C			
r	C	∑C	r^2	r	C	∑C	r^2	r	C	∑C	r^2
1	11	11	01`	1	36	36	01`	1	220	220	01`
2	7	18	04	2	24	60	04	2	180	400	04
3	7	25	09	3	23	83	09	3	80	480	09
4	7	32	16	4	15	98	16	4	44	524	16
5	6	38	25	5	6	104	25	5	30	554	25
6	6	44	36	6	3	107	36	6	2	556	36
7	3	47	49	7	2	109	49	7	1	557	49
8	0	47	64	8	1	110	64	8	1	558	64