

Top Journals on Metals and Alloys: Scientometric based review analysis with Scientific mapping

A Smitha Kranthi

Department of BES-I, Koneru Lakshmaiah education foundation, Green fields, Guntur, Andhra Pradesh, India

Anil Kumar Matta

Natas Consultancy, Natas Heights, Vijayawada, Andhra Pradesh, India

Abstract

Material science requirement is growing rapidly in Society today. Our research goes on all the metals and alloy journals in Scopus data base during 2018 to 2022. Methods and Materials: The data is exported from Scopus data base on 30th jan 2023. The keyword used is 'Metal and Alloys'. The analysis is limited to open access engineering journals with a total of 215 journals. Finally we suggest 31 top Springer Nature journals and Beilstein journal based on SNIP and SJR which contribute the best in Metals and Alloys area based on sjr ranking.

Keywords: Metals and Alloys, Scopus Data, Cite Scope, Documents.

1. The Main Text

Metals and Alloys are finding vast importance in society today; new metals and alloys are required for fast moving automobiles such as Trains. Densely populated countries such as India requires Metals and Alloys. Indian Railways is Asia's largest rail network and second longest in the world. Vijayawada Railway station in AP covers more than four hundred trains per day. [1-26] Fastest trains in India will be operated at a speed of 200km/h. There is a good increase in the advancements of materials science in popular journals globally.

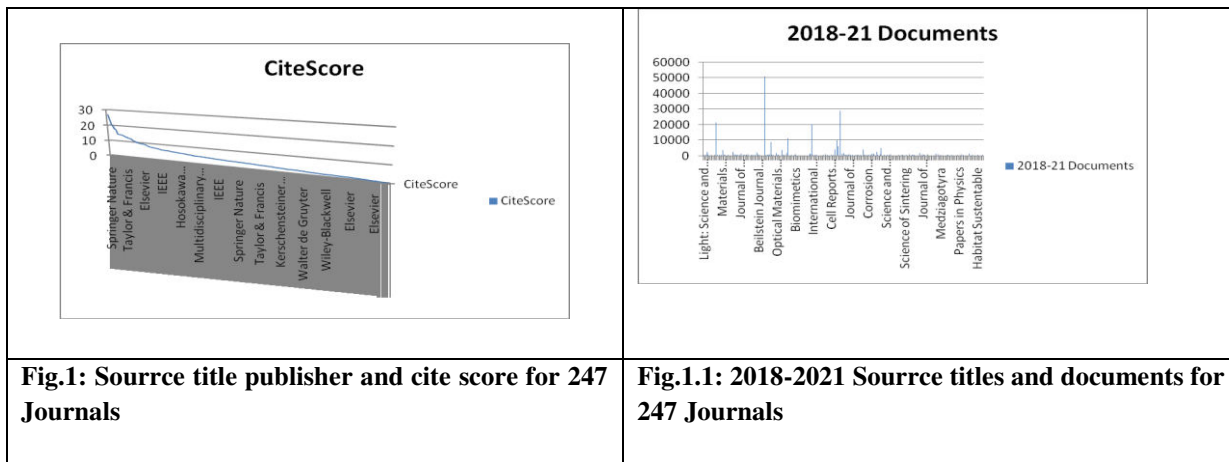
There is no clear cut analysis on journals ranking to researchers on Metals and Alloys, for publishing research articles. Hence, this effort is leayed out to analyze Metals and Alloys of Material Science to cover all the advances and developments of periodic table elements. Focus is kept on open access recent Scopus indexed Journals. Finally research output on cite rate and documents published by publishers are shown, for publication productivity of Publishers and Top brand journals are listed out for Novel research.

2. Materials & Methods

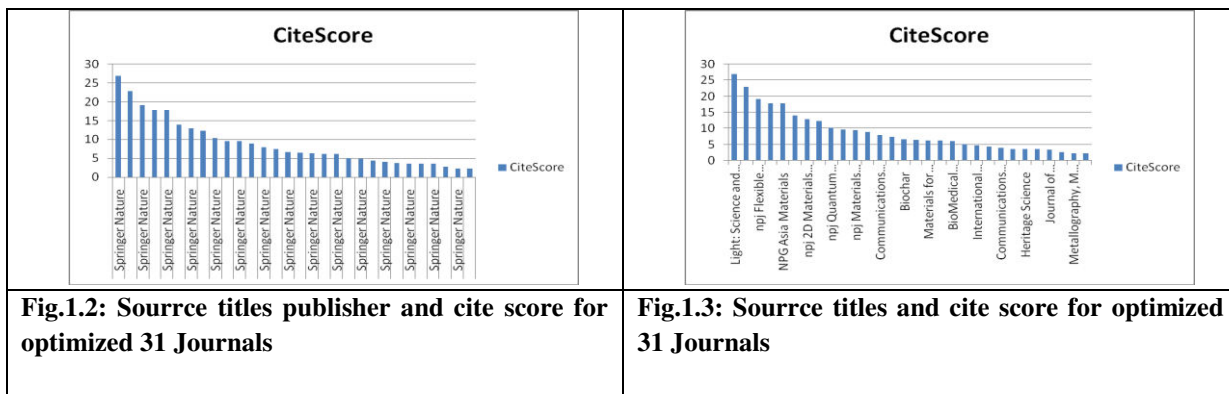
A search was undertaken from Scopus journal data base (www.scopus.com) with a search key word metals and alloys. The search was undertaken only for Journals, excluding book & conference proceedings. The study is just limited to materials science to concentrate on metals and alloys [27-33]. The complete details of journal, source title, cite score, highest percentile, citations, documents, percentage cited; SNIP, SJR and publisher details are thoroughly recorded.

3. Results

Over the past years, the role of metals and alloys is drastic. In trends line of journals there is a drastic increase in citations per year with a constant progression during the last 4 years. The bulk lists of journals are from Springer which contributed to this research as shown in Fig.1. The trending line of journals shows ascending order of journals among 247 journal's list, which are: Springer Nature, Taylor & Francis, Elsevier, IEE, Kerschensteiner, Water de Gruyter, Wiley Blackwell. Among the brands cite score is the best for Springer Nature.



From Fig.1.1 it is clear that Beilstein Journal also have made the lead in contributing to Metal and alloys research. The work is optimized based on cite score and the journals are optimized from 247 to 31 journals (Springer Nature). It is clear that among the 31 Springer Nature Journals cite score is good for the following list of Journals they are as shown in the table. 1

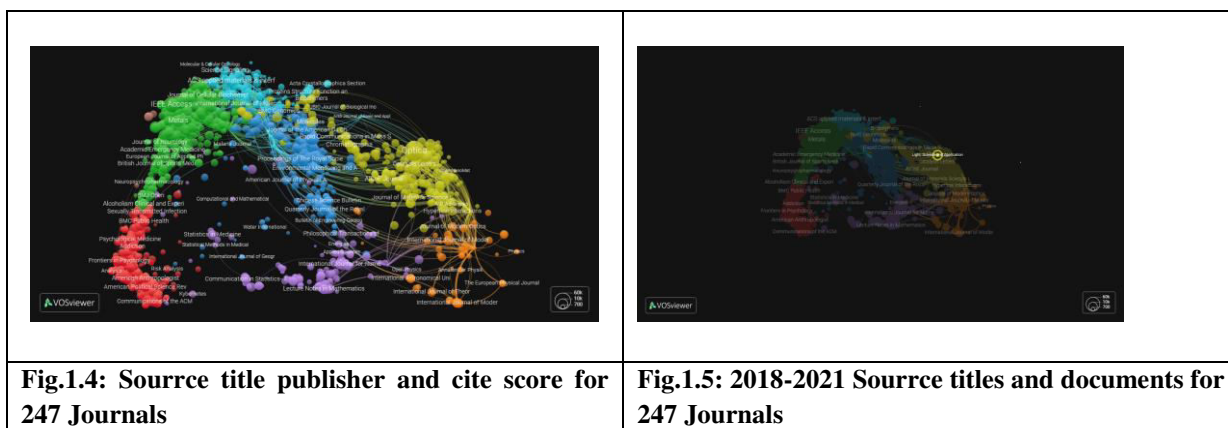


From Tab.1 shows the optimized 31 Journals along with titles base on cite score. And the list of top three journals which contributed more to Metals and alloys were Light: Science and Applications with a cite score of 27, Nano- Micro Letters with and cite score of 22.9, npj Flexible Electronics with a cite score of 19.1. Most of research contributions in these listed top journals plays a vital role in defending the research. All material science works can be communicated to these journals. AZ91E (Magnesium alloys) development [34-43] and approaches can be communicated to the list of top 31 journals.

Source title	CiteScore
Light: Science and Applications	27
Nano-Micro Letters	22.9
npj Flexible Electronics	19.1
Biomaterials Research	17.8
NPG Asia Materials	17.8
npj Computational Materials	14
npj 2D Materials and Applications	12.9
Nano Convergence	12.4
npj Quantum Materials	10.3
Nanoscale Research Letters	9.6

npj Materials Degradation	9.5
Microsystems and Nanoengineering	9
Communications Chemistry	8
Beilstein Journal of Nanotechnology	7.4
Biochar	6.7
Journal of Materials Science: Materials in Medicine	6.5
Materials for Renewable and Sustainable Energy	6.3
npj Microgravity	6.2
BioMedical Engineering Online	6.1
Photonic Sensors	5.1
International Journal of Mechanical and Materials Engineering	4.8
Micro and Nano Systems Letters	4.3
Communications Materials	4
Fashion and Textiles	3.7
Heritage Science	3.6
Journal of Wood Science	3.6
Journal of Analytical Science and Technology	3.5
SN Applied Sciences	2.7
Metallography, Microstructure, and Analysis	2.2
Science of Sintering	2.2

Tab.1: optimized list of 31 Journals



Scientific mapping Fig.1.4 & Fig.1.5 shows highlighted clusters in a manner that display the list of all the journals on metals and alloys. Color is represented to show the occurrence and cooccurrence. [44-45] Various colors represent various journals in the list of journals. Color in Fig.1.5 shows greater frequency of occurrence.

4. Conclusions

Research on metals and alloys is drastic in last four years with a best cite score. The Journals are located in all parts of the world. This research activity must be a part of even school community to develop interest among the groups in developing new series of alloys for the growth and development of newly born states.

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asmithakranthi@kluniversity.in anilkumarmatta7@gmail.com