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Bibliometric Analysis of Top Cited Article in Magnesium Alloy/ AZ91E Mg Alloy from Dimensions

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Abstract- In this survey, top cited article is identified in Magnesium Alloy/ AZ91E Mg alloy from Dimensions data base (2014-2023). Top cited article is defined as the article which is cited more number of times than other articles since 2014. Results showed that 1264 publications with research categories Engineering (1128), materials engineering (785), manufacturing engineering (161), chemical sciences (93) and biomedical engineering (67) were published in the journal's list UGC journal's list Group II, ERA 2023, ERA 2018, ERA 2015, Norwegian register level 2, DOAJ, PubMed, J-STAGE between 2014 to 2023. "Magnesium Alloy or AZ91E Mg alloy" is the key word used to obtain the highest authored paper with 1463 citations.

Keywords- Magnesium alloys; AZ91E; Bibilometric analysis.

I. INTRODUCTION

Completion of Literature review on magnesium alloys requires lot of effort, patience and time with hard work. Hence, most cited article on magnesium alloys requires huge effort from a researcher. Article high citation rate aids in referral speed of a research, there is vast number of publications on mg alloys, but there would always be gaps in the research and a good problem in a thorough review of research articles. The citations on an article reflect scientific impact on materials society [1-27].

Highly cited articles give a holistic progress on scientific society. The purpose of this work is to present bibilometric analysis on top cited articles [46] and to find out the exact scientific progress on magnesium alloys.

METHODOLOGY

For Bibilometric analysis documents are retrieved from 'Dimensions', the search word is 'dimensions.ai' in webpage. Dimensions provide a favorite bar of publication year, researcher, research categories, publication type, source title, journal's list and open access. [28-33]

A search word "magnesium alloy or AZ91E Mg alloy" is given on 16th April 2023 5.11am and 1264 publications, 252 patents were accessed. The publication years from 2014 to 2023 with documents 2014 (64), 2015 (58), 2016 (62), 2017 (61), 2018 (66), 2019 (85), 2020 (90), 2021 (116), 2022 (146), 2023(40) with a overview citations of 45k and citations mean 35.82.

The list of source titles are 54 international journal of fatigue, 51 material science and engineering A, 37 Corrosion science, 36 journal of alloys and compounds, 31 journal of materials engineering and performance, 27 surface and coating technology, 25 the minerals metals and materials, 22 SAE technical papers, 21 materials today proceedings, 20 materials and 18 international journals of metals. Some of the Universities which aid more on magnesium alloys are 27 Guang-Ling song, Xiamen University, china, 23 Comondore Ravi Ravidran, Ryerson University, Canada, 21 Andrej Atrens, University of Queens Land, Australia, 20 Nick Birbilis, Australian National University, Australia, Scott A Whalen, 19 Pacific Northwest National Laboratory, United States. The research categories accessed are Engineering (1128), materials engineering (785), manufacturing engineering (161), chemical sciences (93) and

biomedical engineering (67). The publication types accessed are 973 Articles, 166 chapters, 62 Edited Books, 33 proceedings, 15 Monograph, 15 pre print. The journal's list accessed is 922 UGC journal's list Group II, 860 ERA 2023, 808 ERA 2018, 673 ERA 2015, 643 Norwegian register level 1, 412 VABB-SHW, 230 Norwegian register level 2, 143 DOAJ, 69 PubMed & 35 J-STAGE. Open access type 955 closed, 309 all oa, 150 gold, 74 green, 58 bronze, 27 hybrid.

II. RESULTS AND DISCUSSIONS

Of the 1264 publications in Dimension from 2014 to 2023 which were exported with a copy in mail and excel data with rank, publication id, doi, pmid, pmcid, title, abstract, acknowledgement, funding, source title, anthology title, mesh term, publication date, publication year, publication date (online), publication date (print), volume, issue, pagination, open access, publication type, authors, authors (raw affiliation), corresponding authors, times cited, recent citations, RCR, FCR, source link out, dimensions url, fields of research. Fig.3.1 shows dimensions.ai data with citations overview.

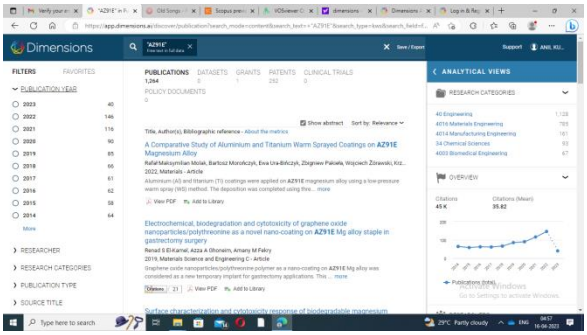

Fig 1. Dimensions.ai data.

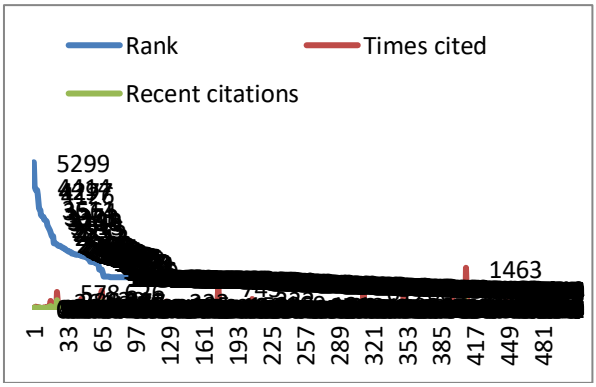

Fig 2. Name of the figure.

Fig.3.2 shows the rank, times cited and recent citations from the chart it is seen that 1463 are the times cited where as the others are from 743 and below, so clear study is the region of 1463, also we can see that 5299 is the ranking.

Even though the ranking is good there is no accurate times cited. It is clear and evident that at 714 rank, 1463 times cited and 254 recent citations the article is beyond natural for magnesium alloy society. From the graph there are no chances of study at other points so we obtained the complete details of articles as 714 rank, 'pub.1046183194 publication id, 10.1016/j.cossms.2009.04.001' doi, 'Degradable biomaterials based on magnesium corrosion' as Title, '2008-10' publication date, '2008' publication year, 12 volume, 5-6 issue, 63-72 pagination, 'all OA, Green' open access, 'article' publication type, 'Witte, Frank; Hort, Norbert; Vogt, Carla; Cohen, Smadar; Kainer, Karl Ulrich; Willumeit, Regine; Feyerabend, Frank' Authors, 'Witte, Frank (Laboratory for Biomechanics and Biomaterials, Hannover Medical School, Anna-von Borries-Str. 1-7, 30625 Hannover, Germany; Department of Biotechnology' Authors (Raw Affiliation), 'Witte, Frank (Hannover Medical School; Ben-Gurion University of the Negev)' Corresponding Authors, 177.32 FCR, 'https://app.dimensions.ai/details/publication/pub.1046183194'Dimensions URL, '40 Engineering; 4003 Biomedical Engineering' Fields of Research (ANZSRC 2020) [34-43], MeSH terms

III. CONCLUSION

In a total, 1264 publications in Dimensions from 2014 to 2023, [44-45] 1463 is the recent citations of the article 'Degradable biomaterials based on magnesium corrosion' which we suggest as a top class article which paves the way to magnesium alloy research from Dimensions.

Also as we have used the search word "Magnesium alloy" or "AZ91E Magnesium Alloy" we suggest that a focus on "Biodegradable AZ91E" or "AZ91E alloy as Biodegradable implant material" defines paves a way for Mg alloy research.

REFERENCES

[1] A.K.Matta. Metallic Product Prototyping, testing and web visibility for manufacturers: Reference module in materials science and materials Engineering, Oxford: Elsevier 2018, pp 1-10.

[2] A.K.Matta. Metal Prototyping the future of Automobile Industry: A review: elseiver, procedia material science, materials today proceedings 5(9), 17597-17601,2018.

[3] A.K.Matta. C based design Methodology and topological change for an Indian Agricultural tractor component: journal of the Institution of Engineers (India): Series A., Springer, vol.04, issue.13, pp.375-378, 2017.

[4] A.K.Matta. Development and Impact Testing of a pultruded composite material highway guardrail: Research Journal of engineering and Technology, Volume 4, Issue 3 July-Sept, 2013, pp 132-135.

[5] A.K.Matta. Experimental analysis of Erosive behavior on Al-Sicp based MMC using micro particle (Al2O3) as Erodent: IOP Conference Series: Material science and engineering, 455(1), pages 012094, 2017.

[6] A.K.Matta. Computer-aided Engineering for four wheeler accelerator pedal:IJPAM, vol.18, issue 24, 2018. PP.1-10.

[7] A.K.Matta. Problems and Challenges in MMC contributing to RP, IJMTST: vol.04, issue 1, 2017.

[8] A.K.Matta. Modeling of micro turbine for Rapid prototyping: vol.no.2, issue 7,IJMTST, july 2016, pp 19- 22.

[9] A.K.Matta. Modeling and optimization of Rapid prototyping for an Agricultural Tractor component: Discovery Engineering, 2016. vol.04, issue.13, pp.375-378.

[10] A.K.Matta. 3D Design support and software compensation for Rapid Virtual prototyping of Tractor Rockshaft arm: Taylor and Francis, CRC PRESS, Balkema publication, 2015, PP.91-94.

[11] A.K.Matta. Optimization of Brake rotor by using Taguchi method and 3D Finite Elements: IJAER, Volume 10, Number 13, pp 33175-33177 (2015).

[12] A.K.Matta. Optimization of operation parameters on a Novel internally ventilated cross drilled disc brake by using Taguchi Method: IJESTA, Volume 1, Number 5 (2015), pp. 8-14.

[13] A.K.Matta. The integration of CAD/CAM and Rapid Prototyping in Product Development A review: elseiver, procedia material science pp.3438- 3445, vol.2, 2015.

[14] A.K.Matta. Brake Rotor Design and Finite Element Analysis: IJMER Volume 4, Number 1 (2014), pp. 29-33.

[15] A.K.Matta. Construction of a Test Bench for bike rim and Brake Rotor: IOSR Journal of engineering Volume 2, Issue 8 (August 2012), PP 40-44.

[16] A.K.Matta. Design and Analysis of Steam Turbine Blades using FEM: International Journal of Mechanical Engineering Research, Volume 2, Number 2 (2012), pp. 67-73,2012.

[17] A.K.Matta. Analysis of Gas Turbine blades with materials N155 and INCONEL 718: International Journal of Advances in Science and Technology, Vol.4, No.1, pp 46-50, 2012.

[18] A.K.Matta. Convective Heat Transfer Analysis of Gas Turbine Blades Using Finite Element Method: IJMER, Vol1, no.3, pp 391-397, 2011.

[19] A.K.Matta. An approach to predict loads on Tractor rockshaft arm: ICAI, Space society of mechanical engineers, Gujarat, 5th to 6thapril, PP.290-293, 2016.

[20] A.K.Matta. Sparse Social Dimension Based Collective Behavior Learning in Social Networks: Springer, ICCIDM-2014 20-21st Dec 2014.

[21] A.K.Matta. Analysis of Novel Brake Rotor using FEM: AIMTDR-2014 IIT Guwahati, 12-14 thDec 2014.

[22] A.K.Matta. Experimental Heat Transfer And Transient State Stress Analysis Of a Brake Rotor: APM-2013, CIPET, Lucknow, 1-3 March 2013, PP 17.10-17.20.

[23] A.K.Matta. Scallable learning of collective behaviour. 978-3-330-35098-4.

[24] A.K.Matta. How to develop a component and file a patent. 978-620-2-30228-9. https://www.amazon.com/How-develop-component-file-patent/dp/6202302283, 2017.

[25] A.K.Matta. Allaying of Tractor Wing. 978-613-8-95950-2. https://www.morebooks.de/store/fr/book/allaying-of-tractor-wing/isbn/978-613-8-95950-2, 2021. https://rapid-prototyping-consultancy.business.site

[26] A.K.Matta. MATLAB to Scallable learning, Notion Press, 2022.

[27] A.K.Matta. Making of AZ91E series, Notion Press, 2022.

[28] A.K.Matta. Examination of AZ91E with Ni0.21 Ca0.03, Notion Press, 2022.

[29] A.K.Matta. AZ91E towards GCI, Notion Press, 2022.

[30] A.K.Matta. Relevance of AZ series to humanity, Notion Press, 2022.

[31] A.K.Matta. Modified RS Arm, Indian Patents, 2021.

[32] Anil Kumar Matta. Recent studies on particulate reinforcement AZ91 Magnesium composites fabricated by stir casting- A Review: JMEE, 2020, pp.115-126.

[33] A.K Matta. Preparation and toughness studies of Acetol (POM) & PTFE blend: IJMTST, 2016, pp.63-67.
[34] A.K Matta. Fabrication of six legged robot with crank and slotted lever mechanism using RF communication: IJAER, 2015.
[35] A.K Matta. Preparation and characterization of biodegradable PLA/PCL polymeric blends: Procedia material science, 2014.
[36] A.K Matta. The six sigma approach to reduce specific roll consumption in medium merchant and structural mill: IOSRJEN, 2013.
[37] A.K Matta. Construction of a test bench for bike rim and brake rotor: IOSRJEN, 2012.
[38] A.K Matta. 3D Design support and software compensation for rapid virtual prototyping of tractor rockshaft arm: ICCASCE, 2015.
[39] A.K Matta. Construction of a test bench for bike rim and brake rotor: IOSRJEN, 2012.
[40] A.K Matta. Preparation and characterization of ternary blends composed of polylactide and MWCNT: ICEMAP, 2013.
[41] A.K Matta. Convective heat transfer analysis of gas turbine blades using fem: ICCMM, 2011.
[42] M Anil Kumar. T24 Experimental Investigation of Neem Oil as a fuel in CI engine: ACME, 2010.
[43] KVS Hari Prasad. Scientometric analysis of endocrinology research from India: JSCIRES, 2013.
[44] Xiaohong He. Self healing concrete: A scientometric analysis based review of the research development and scientific mapping, Case studies in construction materials, 2022.
[45] Kun-Yang Chuang. Bibilometric profile of top cited single author articles in the science citation index expanded, Journal of Informatics, vol 8, issue 4, 2014.