Editorial: Machining: a bibliometric analysis

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Machining, also known as metal cutting or subtractive manufacturing, is a process with wide industrial applications, namely, in automotive, aeronautical, aerospace, die and mould, biomedical industries, and other industries. A significant value of all mechanical components manufactured worldwide is derived from machining processes (Astakhov, 2006; Davim 2008, 2011, 2016).

The bibliometric analysis used the database Scopus/Elsevier to search for the documents. Using the term {machining}, TITLE-ABS-KEY ({machining}), 203,826 documents were identified (search carried out on 5th October 2024).

The results obtained in documents can be seen in Table 1, for the first ten positions concerning year, source, author, affiliation, country, document type, scientific area, and funding support.

Table 1 Documents (203,826)

	Year	*Source*	*Author*	*Affiliation*
1	2023 (12,255)	*Int. J. Adv. Manuf. Tech*. (9,065)	B. Denkena (513)	Ministry of Education of China (5,597)
2	2022 (11,593)	*Advanced Materials Research* (4,349)	F. Klocke (413)	Harbin Institute of Technology (3,036)
3	2019 (10,905)	*Proceedings of SPIE* (4,001)	E. Uhmann (408)	Nanjing Univ. of Aeronautics and Astronautics (2,856)
4	2020 (10,884)	*Key Engineering Materials* (3,324)	D. Biermann (309)	Chinese Academy of Sciences (2,398)
5	2021 (10,672)	*Procedia CIRP* (3,003)	S.Y. Liang (309)	Shanghai Jiao Tong University (2,186)
6	2018 (10,263)	*Materials Today Proceedings* (2,629)	N. He (272)	Shandong University (1,984)
7	2017 (9,199)	*J. Mater. Process. Technol*. (2,452)	J.P. Davim (270)	Dalian University of Technology (1,931)
8	2014 (8,289)	*Applied Mechanics and Materials* (2,241)	M. Chen (268)	Huazhong Univ. of Science and Technology (1,768)
9	2016 (8,244)	*Int. J. Mach. Tools. Manuf*. (2,067)	S. To (266)	Northeastern University (1,649)
10	2015 (7,560)	*Lect. Notes Mech. Eng.* (2,057)	T. Bergs (258)	Tsinghua University (1,479)

Source: Scopus/Elsevier (5 October 2024)

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Table 1 Documents (203,826) (continued)

	Country	*Type*	*Area*	*Funding support*
1	China (56,964)	Article (132,147)	*Engineering* (154,979)	National Natural Sci. Found. of China (19,074)
2	USA (23,357)	Conference paper (61,709)	*Materials Sci.* (71,436)	Ministry of Education of China (5,594)
3	India (20,326)	Review (3,734)	*Physics and Astr.* (405,66)	National Key Res. and Dev. Program of China (2,843)
4	Germany (11,517)	Book chapter (3,048)	*Computer Sci.* (38,284)	Fundamental Res. Funds for the Central Univ. (2,472)
5	Japan (11,291)	Conference review (1,563)	*Mathematics* (14,741)	National Science Foundation (2,131)
6	UK (7,792)	Short survey (335)	*Chemical Eng.* (13,303)	D. Forschungsgemeinschaft (2,001)
7	Russian Fed. (5,237)	Note (303)	*Chemistry* (12,247)	China Postdoctoral Science Foundation (1,480)
8	South Korea (5,042)	Book (278)	*Energy* (7,543)	European Commission (1,408)
9	France (4,545)	Report (248)	*Environmental Sci.* (6,724)	Japan Society for the Promotion of Science (1,290)
10	Canada (4,432)	Editorial (97)	*Business Manag.* (5,812)	Natural Sci. and Eng. Res. Council of Canada (1,204)

Source: Scopus/Elsevier (5 October 2024)

The better results obtained show in function of the number of documents produced: year 2023 (12,255), followed by the years 2022 (11,593) and 2019 (10,905); source *International Journal of Advanced Manufacturing Technology* – Springer (9,065) followed by *Advanced Materials Research* – Trans Tech Publications (4,349) and *Proceedings of SPIE* – The International Society for Optical Engineering (4,001); author B. Denkena – Gottfried Wilhelm Leibniz Universität Hannover (513), followed by F. Klocke – Rheinisch-Westfälische Technische Hochschule Aachen (413) and E. Uhmann – Fraunhofer Institute for Production Systems and Design Technology IPK (408); affiliation Ministry of Education of China (5597) followed by Harbin Institute of Technology (3,036) and Nanjing University of Aeronautics and Astronautics (2,856); country China (56,964) followed by USA (23,357) and India (20,326); document type article (132,147) followed by conference paper (61,709) and review (3,734); scientific area engineering (154,979) followed by materials science (71,436) and physics and astronomy (40,566) and funding support National Natural Science Foundation of China (19,074) followed by Ministry of Education of China (5,594) and National Key Research and Development Program of China (2,843).

References

Astakhov, V.P. (2006) 'An opening historical note', *Int. J. Machining and Machinability of Materials*, Vol. 1, No. 1, pp.3–11.

Davim, J.P. (2008) *Machining: Fundamentals and Recent Advances*, Springer [online] https://link.springer.com/book/10.1007/978-1-84800-213-5 (accessed 5 October 2024).

Davim, J.P. (2011) *Modern Machining Technology: A Practical Guide*, Elsevier [online] https://shop.elsevier.com/books/modern-machining-technology/davim/978-0-85709-099-7 (accessed 5 October 2024).

Davim, J.P. (2016) *Metal cutting Technologies: Progress and Current Trends*, DE Gruyter [online] https://www.degruyter.com/document/doi/10.1515/9783110451740/html?lang=en (accessed 5 October 2024).