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Recent advancements in the field of Nanomaterials and Nanotechnology

In 1959 a renowned physicist Richard Feynman in his talk “There’s Plenty of Room at the Bottom” discussed about nanotechnology in which he described the possibility of synthesis via direct manipulation of atoms. The term “nanotechnology” was first used by Norio Taniguchi in 1974. Nanotechnology works at the very initial level of atoms and molecules for the living systems. Nanotechnology accelerates the developments of many techniques and tools for society. At nanoscale, unifying features of nature give a new foundation for fundamental research and new potential applications. Nanotechnology brings knowledge, innovation, and integration of technology together with novel nanomaterials. Nanotechnology research has shown developments due to innovative, advantageous properties of nanomaterials.

In this report, we have extracted data from Scopus (www.scopus.com) from 2010 to 2017 (February 2017) as “Nanomaterials and Nanotechnology” in all the field of search indicates that since 2010, on Nanomaterials Sciences 5400 documents have been published from over 120 countries. Number of documents reported on nanomaterials increased from 575 to 845 since 2010 to 2017 (February 2017). The graph depicts significant increase in the nanotechnology research after 2010 (**Fig. 1a**).

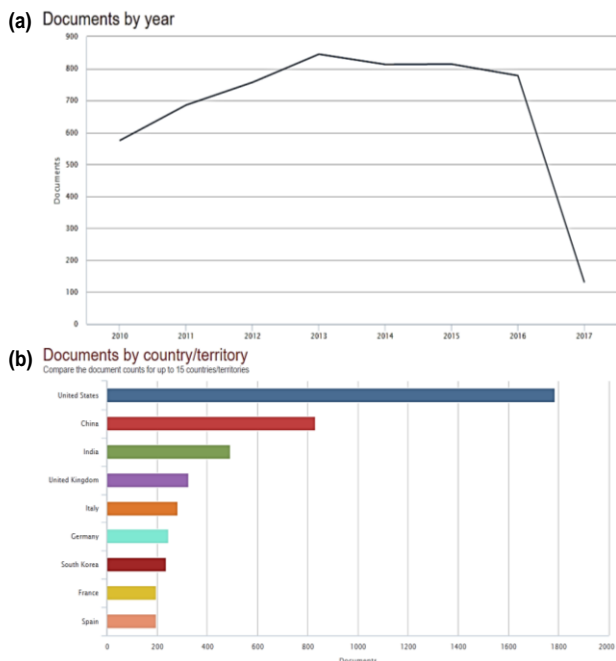


Fig. 1. Distribution of (a) documents per year and (b) documents by country since 2010. The data were extracted as “Nanomaterials and Nanotechnology” in all fields from Scopus (February 2017).

The most active countries are United States, China, India, United Kingdom, Italy, Germany, South Korea, France and Spain ranked with respect to the documents reported during

six years (**Fig. 1b**). Since 2010, 49.5% of the documents are reported as a research article and 36.9% of research is carried out in the field of material science (**Fig. 2**).

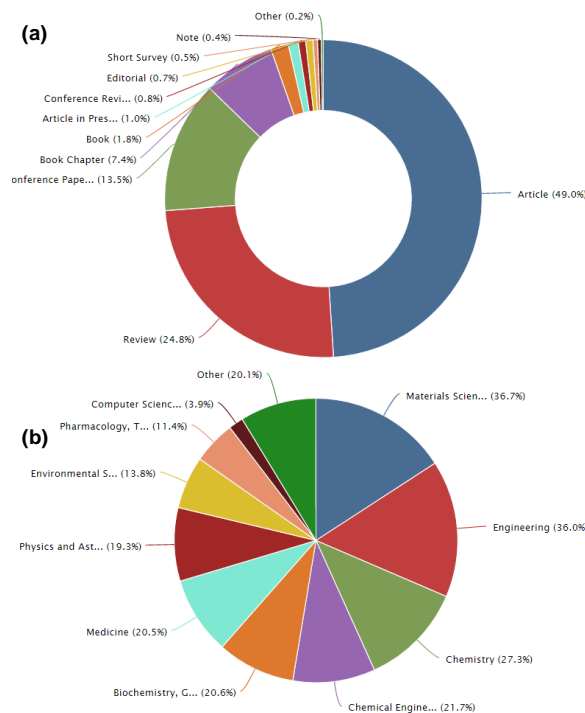


Fig. 2. Distribution of documents reported in Nanomaterials and Nanotechnology by (a) Type and (b) subject area since 2010. The data were extracted as “Nanomaterials and Nanotechnology” in all fields from Scopus (February 2017).

Table 1. List of top-ten nanotechnology researcher institutes/organisation and their world ranking based on the number of articles published*.

World ranking	Name of Organisation	Country	Number of documents published
1.	Chinese Academy of Sciences	China	102
2.	National Institute for Occupational Safety and Health	US	64
3.	Nanyang Technological University	Singapore	63
4.	Massachusetts Institute of Technology	US	56
5.	Duke University	US	45
6.	University of California	US	43
7.	United States Environmental Protection Agency	US	39
8.	Tsinghua University	China	37
9.	Northwestern University	US	36
10.	National University of Singapore	Singapore	35

Table 2. List of top-ten nanotechnology researchers and their world ranking based on the number of articles published*.

World ranking	Name of Researcher	Affiliation	Number of documents published
1.	Charles L. Geraci	National Institute for Occupational Safety and Health, Washington, United States	22
2.	Bernd Nowack	Forschungsinstitution für Materialwissenschaften Und Technologie Eth-Bereichs, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland	21
3.	Thomas Jay Webster	Northeastern University, Department of Chemical Engineering, Boston, United States	19
4.	Philip Demokritou	Harvard School of Public Health, Center for Nanotechnology and Nanotoxicology, Boston, United States	18
5.	Yuliang Zhao	Chinese Academy of Sciences, Center for Excellence in Nanoscience, Beijing, China	17
6.	Alberto Bianco	Université de Strasbourg, Laboratory of Immunopathology and Therapeutic Chemistry, Strasbourg, France	16
7.	Xingjie Liang	Chinese Academy of Sciences, Beijing, China	15
8.	Ramazan Asmatullı	Wichita State University, Department of Mechanical Engineering, Wichita, United States	14
9.	Chunying Chen	Chinese Academy of Sciences, Beijing, China	14
10.	Bengt Fadeel	Karolinska Institutet, Institute of Environmental Medicine, Stockholm, Sweden	14

*The data were extracted as “nanomaterials and nanotechnology” in all fields from Scopus (February 2017).

Nanomaterials research gives a materials science-based approach to nanotechnology for advancements in materials and also covers preparation, characterization and application of all nanomaterials. Nanomaterials are materials in size range of 1 to 100 nm with many unique properties e.g. quantum size effects. These are not simply miniaturization of materials but require several approaches to construct different sizes classified as ‘top-down’ and ‘bottom-up’. New nanomaterials with engineered surfaces with tailored properties such as large surface area or specific reactivity are used regularly in a range of applications such as in field of energy generation and storage. The key objective of Nanotechnology and Nanomaterials research is to involve science and applications of nanoscale and nanostructured materials with concern of societal and environmental effects [1-39].

We trust that *Advanced Materials Letters* offers an international interactive platform for both industrial and academic researchers, professors and students active in the fields of applied or fundamental materials science related to biological, chemical, earth, atmosphere, ocean and planetary, engineering, mathematical, medical and physical sciences. The journal is expected to become popular accompanied with a high impact factor.

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With best regards

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