

Scientometric Analysis of Materials Science Research

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The paper provides a bird's view about the Materials Science research in the global level as it is necessary of quantifying the research conducted in the field of Materials Science by applying various Scientometric indices and techniques. The study uses Science Citation Index of ISI Thomson Reuters' Web of Science to collect the data. The scientometric data were collected for fifteen years spanning 2002 to 2016 of top fifteen countries in the field of Materials Science. The findings of the study reveal that the percentage share of material science publications is 5.61% out of total scientific publications of the World; the study indicates that the China identified as productive country in the world with 2,87,736 publications, followed by the USA (2,17,422). There is an exponential growth of publication for the world ($R^2 = 0.967$) in Materials Science field; the Annual Growth Rate (RGR) is highest for Iran (through it ranked fifteenth in terms of publications), i.e. 27.00; Activity Index is more than one for nine countries (Japan – 1.093, Russia – 1.043, France – 1.035, England – 1.031, USA – 1.008, Germany – 1.006, Italy – 1.004, Taiwan – 1.003 and Canada – 1.003) which indicates that the research efforts of these countries correspond to the world's average. It is evident from the study that USA (1.48), England (1.19), Australia (1.14), Germany (1.09) and France (1.07) have more than one PEI which clearly indicates that there is an impact of publications in Materials Science by these countries is more than the research effort devoted during 2002 to 2016. China topped the list with the highest mean value of Relative Comparative Advantage for Publication (RCAP) i.e. 2.23. RCAP value of China, South Korea, Taiwan, India, Iran, Japan, Russia and France are more than one. The data indicate that these countries are specialized in the field of Materials Science.

Keywords: Activity index, Citation analysis, Materials science, Scientometric publication efficiency index