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Renewable energy: a bibliometric analysis

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Abstract

The aims of this paper are to identify existing research on renewable energy; identify the most influential publications, authors, organizations to understand the research areas. The paper is centered on the bibliometric analysis based on the Web of Science database for the key phrase renewable energy in the article title until 2020. We analyzed the publications about renewable energy by years, by research areas, by geography, by research organizations and research sponsors, by journals, by citations of journals, authors, publications, co-occurrence by keywords. Analysis of the most cited publications and authors, analysis of cooccurrence by keywords was performed using VOSviewer. We performed hierarchical cluster analysis, and clusters were selected using VOSviewer. We found 17805 scientific publications on renewable energy published in scientific journals (51.7% of publications were published during 2016-2020). The most popular research areas are energy fuels, engineering, science technology, environmental sciences, ecology, and business economics. The majority of papers was published by the scientists from the United States, China, and India. In addition, we identified six main research clusters. They are related to an optimizer, renewable energy, biomass, co2 emissions, model, desalination. Conclusions: This analysis confirmed the authors hypothesis about the definition of new scientific horizons of renewable energy research. Our results can help scientists interested in renewable energy looking for research funding and research project risks based on renewable energy.

Keywords: renewable energy, research trends, research areas, research clusters, biomass, CO2 emissions, desali

Full text

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