

Bibliometric analysis on simultaneous saccharification and fermentation using ISI web of science database

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ABSTRACT

The conversion from lignocellulosic biomass to bioethanol consists of a series of steps, one of which is known as Simultaneous Saccharification and Fermentation (SSF). The current research aims to evaluate the global research trends in SSF from 1981-2020, to identify the specific area of research activities, and to identify new areas for future development concerning SSF. A bibliometric analysis was conducted on 3,116 research articles of SSF obtained from the ISI Web of Science database in terms of publication output, co-authorship, countries, institutions, research areas, document types, and keywords. Some of the collected data sets were visualised in the form of a network map using VOSviewer software. Results have shown that China contributed the most publications. In terms of institution or organisation, the United States Department of Energy in the USA produced the highest number of research articles in SSF. The most preferred journal in SSF is Bioresource Technology. New areas for future development concerning SSF were also identified. For improving and upscaling the SSF process from lab or pilot scale to industrial scale, modelling, simulation, optimisation, and computational fluid dynamic (CFD) are crucial; hence, these are the essential areas for further research. This study will help researchers to identify a particular interest in the field of SSF and potential research collaboration.

KEYWORDS

Bibliometric analysis; ISI Web of Science database; Fossil fuels; Biomass

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