GLOBAL ENERGETIC MARKET TENDENCIES: TECHNOLOGIES FOR
THE SECOND GENERATION OF ETHANOL

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Abstract

Nowadays bienergy remains as a reference of sustainable energy production and there is a plethora of raw materials that can be used in order to improve the energy production. This study tries to understand the global effort on knowledge production and the development of a productive process where these materials are entirely used, without wasting products. The methodology used is the scientometric analysis of scientific production and innovation scenarios, and the results, in association with the analysis of patent citation networks and technological categories, indicate some characteristics of this knowledge production. The main reason of this study is to perceive the scientific production of bioenergy, the competitors, the competitive scenario and whether efforts are being devoted to it are being well used.

Key words: bioenergy, scientific production, waste

Introduction

Brazil is an important producer of ethanol, which is shown as a potential substitute for fossil fuel. The production of bioenergy is growing year by year and also the importance of Brazilian bioethanol and the interest on its development.

In this study, it was used a set of keywords associated with “waste” to search publications on ISI Web of Science and the software VantagePoint to construct networks, in order to understand how the scientific production in this topic is moving and to map the stock of knowledge concerning scientific efforts on “waste”.

Results and Discussion

Below there are the main results of the research.

Image 1. Evolution of “waste” scientific production

Image 1 shows that “waste” is a new topic, which is getting more relevant in the past few years. Image 2 highlights one of the main characteristic of this scientific production, the strong tendency to publish articles without collaboration.

Image 2. Five main countries that publish on “waste” and publications in partnership

Results still show that this theme is multidisciplinary, envolving new materials such as chemical and thermodynamic engineering and that the main countries publishing about this topic is China and United States.

Conclusions

As scientific collaboration is related to innovation capacity, the main conclusion of this study is that bioenergy still is not developed enough to substitute fossil fuels. Brazil has a small quantity of studies about bioenergy, which indicates that bioethanol is not ready to fulfill fossil fuels necessity in large scale.

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