

VALORIZATION OF ENERGETIC POTENTIAL FOR AGRO-INDUSTRIAL RESIDUES THROUGH BIODEGRADATION PROCESSES AND CATALYTIC COMBUSTION OF OBTAINED BIOGAS

Goal of the project

The main purpose of the project involves a novel contribution in a direction which is currently under development at national level by providing relevant information impacting the quality of life by increasing regional and local autonomy in the context of valorization the renewable energy resources. The degree of novelty for the project also involves developing an experimental pilot for testing liquid substrates in anaerobic fermentation processes, which can have further industrial applications.

Short description of the project

The proposed project highlights the way different biodegradable materials can be used for biogas production

Project implemented by

Pilot installation and small scale test rigs, used for testing different materials in terms of their potential relative to obtaining biogas, measuring equipment and IT equipment for mathematical / modelling approach.

Implementation period

01.10.2015 – 30.09.2017

Main activities:

Determining the preliminary materials which will be used inside the anaerobic fermentation processes, Laboratory analysis for determining the characteristics of the chosen materials, Using third party infrastructure for comparative and complementary laboratory determinations, Identifying the mathematical models which are to be used inside determinations, Creation and computation of different scenarios for obtaining preliminary data for chosen mathematical models, Preparing and testing inside the reactors of 1l, 2l, 6l, Optimization of pilot installation and tests, Laboratory determinations on resulting materials, Catalysts obtaining and laboratory testing, Comparison of experimental and modeling data, Results dissemination.

Results

Publication of at least 2 papers in ISI journals, publication of at least 2 papers in BDI indexed journals, attendance to a minimum of 2 national or international conferences, publication of a book chapter or book with the obtained results.

Applicability and transferability of the results

The results obtained in the project can be further tested at larger scale in terms of material recipe / biogas quality and quantity and also the development of the pilot installation can be used as an example of combining fossil and renewable sources of energy in order to produce biofuels with impact at local level relative to obtaining of a certain degree of energetic autonomy.

Financed through/by

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Research Centre

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