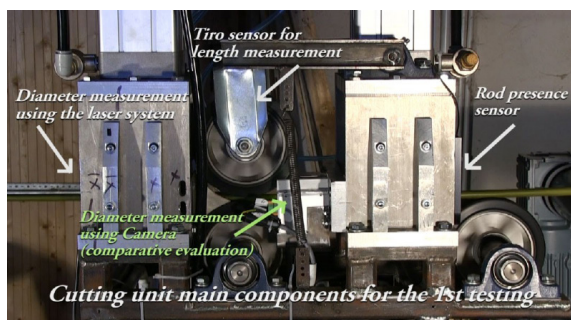


## RESGAS2011: RESEARCH FOR BIOGAS PRODUCTION AND SUITABLE RENEWABLE ENERGY CARRIER

### Goal of the project

The main objective of the project is to perform research and development activities in support of innovation in the field of biogas production. A major shift in the energy policy of both countries could only come from updated technologies, together with best practice exchange. The partners identified possible improvements of the biogas production in both liquid and solid phase, based on different input materials.



### Short description of the project

By the end of the project, the partners will have undertaken several joint research projects aiming at providing added value for the field. The goal is to connect technology, policy, industry, education, finance and public services in order to increase the understanding of the challenges brought by the immense consume of energy, combined with the limited character of the resources. This can be an opportunity for fundamental change in the way the world produces and consumes energy. The synergy between the project partners has a multiplication effect on both sides of the border.

### Fields of interest

The main fields of interest connected with the project applicability and implementation are: biotechnology (analytical characterisation for the chosen substrates); overall characterisation of process in regards to anaerobic fermentation general parameters (temperature, pH, produced quantities, partial composition of biogas in terms of methane and CO<sub>2</sub> percentages); ways of potentially optimize biogas production both in terms of the used materials and process control.

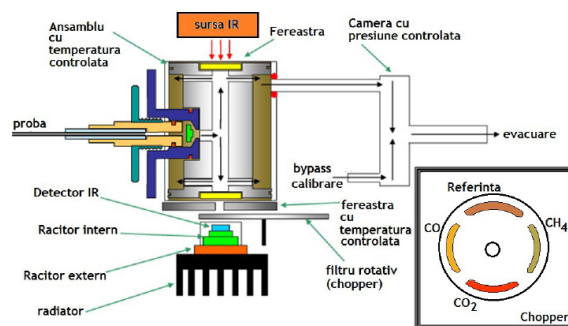
### Project implemented by

Research centre for Thermal Machines and Equipment, Transportation and Pollution Control of UPT, in partnership with the University from Szeged, USAMVB Timișoara and Alapítvány Foundation from Szeged..

### Main activities

Studies connected with fermentation of pre-treated and hydrolyzed biomass as way to increase the biomass conversion ratio and energetic capitalization of biogas. Based on the previous detailed investigations appropriate suggestions will be made on the use and monitoring of the proper microbiological community to be employed for the anaerobic digestion of various organic waste substrates. Methods will be optimized and recommended for the characterization of the biogas production technologies from a microbiological point of view and interested users will be educated to carry out the necessary tests.

Recommendations were formulated for the future advancement of the biogas biotechnology, such as the large scale production of the key microbes and enzymes to be employed.



### Implementation period

01.06.2012-30.11.2013

### Research centre

Research centre for Thermal Machines and Equipment, Transportation and Pollution Control

## Results

- Study regarding & Technological description for the energetic capitalization of biogas;
- Integrated biogas technology description provided for a number of applications;
- Testing different substrates at small scale and inside a pilot installation;
- Report concerning the fermentation of pre-processed biogas of novel biogas improvement technologies;
- Joint book with CD covering the main experimental results of the project and the achieved reports, as well additional theory.

The main results of the joint scientific activity belong to the public domain and were already and will continue to be published in recognized international scientific journals by the Partners and will be presented at domestic and international conferences. Training in modern molecular biology techniques were carried out. The final results and conclusions over the undertaken activities and a final report were delivered.



## Financed through/by

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## Applicability and transferability of the results

The results obtained during the joint research project can be further tested and potentially applied (after thorough consideration) inside semi – industrial or low scale installations for determining the real potential of the different types of materials used for obtaining biogas.

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