STSM title: **Chemometric assessment of large data bases of parameters on thermochemical conversion of bio-waste**

COST Action TD1203 “EUBIS” – Food Waste Valorisation for Sustainable Chemicals, Materials and Fuels

Start date: 01 July 2014

End date: 31 July 2014

Host institution:

BIOMASS AND WASTE GROUP, Chemical Engineering Department, Aristotle University of Thessaloniki, Thessaloniki, Greece

STSM Coordinator:

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Applicant: Dr. Nataša Đurišić-Mladenović, Research Associate
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Purpose of the STSM

The main scientific goal of the STSM was the assessment of the bio-waste thermochemical conversion by selected chemometric technique (principal component analysis-PCA) for exploring the multidimensional structure of data sets consisting the parameters of different conversion processes. The study of the main correlations among the process parameters and the important feature of specific processes was performed by exploring the data sets created of the selected experimental results obtained at the BIOMASS AND WASTE GROUP and the comparable literature-based data.

The application of chemometric techniques are rather scarce in domain of thermochemical conversion of biomass contrary to some other fields like the environmental monitoring, pollution source identification, fuel characterization, etc.; in fact, this is the first attempt to compare different biomass (biowaste) gasification studies by PCA looking for the similarities among the gas product quality.

And finally, by setting multidisciplinary approach and goals, the STSM allowed the mutual transfer of knowledge, and particularly the introduction of the grant holder with the possibilities of the food waste chain waste valorization for production of hydrogen and syngas.

STSM grant holder – Nataša Đurišić-Mladenović (third from right), with the team from Biomass and Waste Group from Chemical Engineering Department, Aristotle University of Thessaloniki, Thessaloniki, Greece, coordinated by Prof. Dr. Anastasia Zabanioutou (second from right)

Presentation of the biomass gasification pilot plant for decentralized combined heat and power production designed and constructed at the Chemical Engineering Department, Aristotle University of Thessaloniki