Program	Program NUCLEU PN **16 25 03 09**
Project title (ENG):	Technology for the treatment by sonolysis of active sludge resulted from the treatment of municipal wastewater
Project title (RO):	Tehnologie de pretratare prin sonoliza a namolurilor active rezultate din tratarea apelor uzate orasenesti
Duration	2016-2017
Team Leader	Mihai STEFANESCU
Summary (short description) ENG	The experimental research has lead to elaboration of new technology for hybrid ultrasonic pre-treatment (alkaline digestion + ultrasonic) of biological active sludge from medium and big wastewater treatment plants which could improve the biogas production, by anaerobically treatment, by 30-40%, methane content being 65-70%. This technology could be integrated in present treatment flows with significant savings of energy and reagents.
Summary (short description) RO	Cercetarile experimentale au condus la elaborarea unei tehnologii de pretratare ultrasonica hibrida (digestie alcalina + ultrasonicare) a namolului biologic activ din statiile de epurare medii si mari, care poate conduce la cresterea productiei de biogaz, prin fermentare anaeroba, cu 30-40%, continutul de metan fiind de 65-70%. Tehnologia poate fi integrata in fluxurile actuale de epurare conducand si la economii semnificative de energie si reactivi.
Dissemination of results	
PhD Thesis – Title RO, ENG	Contributii la imbunatatirea productiei de biogaz din statiile de epurare ape uzate orasenesti prin aplicarea tratarii ultrasonice a namolului biologic, inainte de etapa de fermentare anaeroba. Contribution to biogas generation from municipal wastewater treatment plants by ultrasonic treatment of biological sludge, before anaerobically digestion phase.
Full-paper ISI	Mihai Stefanescu, Gheorghe Nechifor, Costel Bumbac, Ioana Ionescu, Olga Tiron, *Improvement of active biological sludge quality for anaerobic digestion phase in the wastewater treatment plant by ultrasonic pretreatment*, Revista de Chimie, vol. 69, no. 1, pp. 31-33, 2018
Patents (approved or proposal)	Cerere brevet: Procedeu combinat de pretratare ultrasonică și hidroliză alcalină a nămolurilor biologice din stațiile de epurare pentru îmbunătățirea randamentelor de obținere biogaz prin fermentare anaerobă Mihai Stefanescu, Costel Bumbac, Dinu Laurentiu, Viorel Patroescu, Cristiana Cosma - **OSIM A/00870/27.12.2017**