Program	Program Nucleu, contract 20N/2019, project code: PN 19 04 01 01
Project title (ENG):	Advanced research regarding the transfer of emerging contaminants from abiotic environmental factors to aquatic organisms and plants through bioaccumulation (BIOACUM)
Project title (RO):	Cercetari avansate privind transferul contaminantilor emergenti din factorii de mediu abiotici la organismele acvatice si plante prin bioacumulare (BIOACUM)
Duration	2019-2022
Team Leader	PhD. Chem. Toma GALAON
Summary (short description) ENG	The objective of the project is to evaluate the transfer and bioaccumulation of emergent contaminants from abiotic environmental factors to aquatic organisms and plants. The project validate-in house three analytical methods for ultra-trace detection of three distinct emergent contaminants classes: (a) endocrine disruptors (UV filters and degradation products) from surface water and wastewater, (b) pharmaceuticals (anti - diabetics and metabolites) from surface water and wastewater, (c) herbicides (synthetic auxins) from water, vegetation and soil samples. The validated methods were used to quantify the content of endocrine disruptors, anti - diabetics and metabolites, synthetic auxins in wastewater, surface water, soil and vegetation. The transfer factors of the toxic metals As, Cd, Ni and Pb from the polluted soil to the roots and aerial parts of chamomile (Matricaria Chamomilla) and mint (Mentha Piperita) were determined. The degree of contamination with organic pollutants adsorbed on microplastics from Jiu river was evaluated (upstream and downstream of the wastewater treatment plants Targu-Jiu and Craiova respectively).
Summary (short description) RO	Obiectivul proiectului este de a evalua transferului si bioacumularea contaminantilor emergenti din factori de mediu abiotici la organisme acvatice si plante. Proiectul contine dezvoltarea si validarea in house a trei metode de analiza pentru detectia la nivel de ultra-urme a trei clase distincte de contaminanti emergenti: (a) disruptori endocrini (filtre UV si produsi degradare) din apa de suprafata si apa uzata, (b) farmaceutice (anti-diabetice si metaboliti) din apa de suprafata si apa uzata, (c) erbicide (auxine sintetice) din probe de apa, vegetatie si sol. Metodele validate au fost utilizate la determinarea continutului de disruptori endocrine, anti-diabetice si metabolite, auxine sintetice din probe de apa uzata, apa de suprafata, sol si vegetatie. S-au determinat factorii de transfer ai metalelor toxice As, Cd, Ni si Pb din solul poluat catre partile subterane si aeriene ale musetelului (Matricaria Chamomilla) si mentei (Mentha Piperita). S-a evaluat gradul de contaminare cu poluanti organici adsorbiti pe microplastice din raul Jiu (amonte si aval de statiile de epurare

	Targu-Jiu, respectiv Craiova).
Dissemination of results	
PhD Thesis – Title RO, ENG	Anda Gabriela Tenea, University of Craiova, 2019-2021 Noi metode de determinare ale unor metale toxice din componenta biotica si studii de evaluare ale unor ecosisteme poluate New methods for determination of toxic metals from the biotic component and evaluation studies regarding polluted ecosystems
Full-paper ISI	*SPE-LC/MS/MS Method for Detection of Antidiabetic Contaminants in Municipal and Rural Wastewater*, Vasile-Ion Iancu, Gabriel-Lucian Radu, Roxana Scutariu, Laura-Florentina Chiriac, Toma Galaon, Jana Petre, *Revista de Chimie*, vol. 70, no. 12, pp. 4607-4613, 2019.
	In Vitro Sorption Study of Some Organochlorine Pesticides on Polyethylene Terephthalate Microplastics, Roxana-Elena Scutariu, Diana Puiu, Gheorghe Nechifor, Marcela Niculescu, Luoana Florentina Pascu, Toma Galaon, *Revista de Chimie*, vol. 70, no. 12, pp. 4620-4626, 2019
	Liquid Chromatography Tandem Mass Spectrometry Method for Ultra-Trace Analysis of Organic UV Filters in Environmental Water Samples, Florentina Laura Chiriac, Iuliana Paun, Florinela Pirvu, Luoana Florentina Pascu, Marcela Niculescu, Toma Galaon, *acceptat pentru publicare*, *in press*, *Revista de Chimie*, vol. 71, no. 1, 2020.
	Effects of Toxic Metals Cd, Ni and Pb on Matricaria Chamomilla L. Growth in a Laboratory Study, Ecaterina Anca Serban, Gabriela Geanina Vasile, Stefania Gheorghe, Corina Ene, *in press***,** *Revista de Chimie (Bucharest)*, vol. 71, 2020.
	PTV In Situ Derivatization of Several Acidic Herbicides Using a Newly Developed GC-MS/MS Method, Diana Puiu, Alina Tatarus, Roxana Scutariu, Liliana Cruceru, Toma Galaon, *in press*, *Revista de Chimie*, vol. 71, no. 1, 2020.
Conferences (platform, poster, abstract / full-paper)	*Fast and sensitive GC-MS/MS method for detection of some auxin herbicides residues in environmental samples*, Diana Puiu, Roxana Scutariu, Vasile Iancu, Alina Tatarus, Marcela Niculescu, Toma Galaon, International Symposium "The Environment and the Industry", Book of Abstracts, pg. 69-70, September 26-27, 2019, Bucharest.
	Determination of glyburid, glimepirid and repaglinid in wastewater samples, Vasile Iancu, Gabriel Lucian Radu, Jana Petre, Toma Galaon, Roxana Scutariu, Florinela Parvu, Iuliana Paun, Gabriel Serban, International Symposium "The Environment and the Industry", Book of Abstracts, pg. 67-68, September 26-27, 2019, Bucharest.
	D*esorption of phthalates from Microplastics into surface water. In vitro study*, Roxana, Scutariu, Diana Puiu, Gheorghe Nechifor, Vasile Iancu, Alina Tatarus, Toma Galaon, International Symposium "The Environment and the Industry", Book of Abstracts, pg. 65-66, September 26-27, 2019, Bucharest.