

Program	Programul National de Cercetare Dezvoltare CEEEX, contract: 735 / 24.07.2006
Project title (ENG):	Innovative combined technologies for in-situ protection and remediation of soils polluted with heavy metals in order to decrease their bioavailability, (REMSOL)
Project title (RO):	REMSOL - tehnologii combinate inovative pentru protecția și remedierea in-situ a solurilor poluate cu metale în scopul reducerii biodisponibilității acestora, (REMSOL)
Duration	2006-2009.
Team Leader	Dr. ing Bogatu Cornel
Summary (short description) ENG	In this project are studied innovative biotechnological processes coupled with physico-chemical processes, electro kinetic remediation in-situ for some soils in areas polluted with metals mining process, to restore bio-geo-chemical circuit of land affected by pollution. The studied methods of remediation by: amending the upper layers of sterile mine with natural materials, volcanic tuffs indigenous as such supported and phytoremediation their different plant species was studied mobilization of metals in the soil electric field, for redistribution their view facilitating adsorption on volcanic tuffs incurred. It has developed an experimental model of in-situ remediation of land contaminated with heavy metals through integrated processes and physicochemical biotechnology, and on this basis it has developed a technology combined mobilization of metal ions by methods electro kinetic - adsorption volcanic tuffs supported - phytoremediation plant species suitable area for protection and remediation of soils polluted with heavy metals and application in the area of SW of the country's dumps tailings.
Summary (short description) RO	S-au studiat procedee inovative biotehnologice cuplate cu procedee fizico-chimice, electrocinetice pentru remedierea in-situ a unor soluri poluate cu metale situate în zone miniere, în vederea redării circuitului bio-geo-chimic a terenurilor afectate de poluare. S-au studiat procedee de remediere prin:amendarea straturilor superioare de steril de mină cu materiale naturale, tufuri vulcanice indigene ca atare și suportate prin fitoremedierea lor cu diferite specii de plante. S-a studiat mobilizarea metalelor din sol în camp electric, pentru redistribuția lor în vederea facilitării adsorbției pe tufuri vulcanice suportate; S-a elaborat un model experimental de remediere in-situ a terenurilor poluate cu metale grele, prin procedee integrate fizico-chimice și biotehnologice. Și pe baza acestuia s-a elaborat o tehnologie combinată: mobilizarea ionilor metalici prin procedee electrocinetice – adsorbție pe tufuri vulcanice suportate – fitoremediere cu specii de plante adecvate zonei, pentru protecția și remedierea solurilor poluate cu metale grele și aplicarea în zona din S-V a țării la haldele de steril minier.
Dissemination of results	
Full-paper ISI	Dragomir N., Masu S., Bogatu C., Lazarovici M., Cristea C., Mobilization of Heavy Metals from Mining Wastes by Phytoremediation with Lotus species, <i>Journal of Environmental Protection and Ecology</i>, 2009, 10 (1), 365-370, ISSN: 1311-5065, WOS:000208898800008
	Dragomir N., Masu S., Bogatu C., Lixandru B., Lazarovici M., Cristea C., In-situ remediation of Soils Polluted with Heavy MetalsPart 1. Using of supported materials, <i>Journal of Environmental Protection and Ecology</i>, 2009, 9 (1), 42-47, ISSN: 1311-5065, WOS:000208898800008

	Dragut L. , Bogatu C., Verbitchi V., Ionescu D., Harjan I., Masu S., In-situ remediation of Soils Polluted with Heavy Metals Part II. Using of Electrokinetic Treatment, <i>Journal of Environmental Protection and Ecology</i> , 2009 , 9 (2), 49-55, ISSN: 1311-5065, WOS:000208898800008
Full-paper BDI	Mășu S. , Pricop A., Turuga L., Phytoremediation methods of soil contaminated with heavy metals, <i>Annals of University of Timișoara, Series of Chemistry</i> , 2007 , 16 (2), 7-12, ISSN 1224-9513, WOS:000184327300009
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	Bogatu C. , Masu S., Dragomir N., Copper accumulation from mining dump in revegetation with grasslands. <i>Lucrări științifice Zootehnie și Biotehnologii</i> , 2008 , 41, 212-217, ISSN 1221-5287.
	Mășu S. , Bogatu C., Dragomir N., Some aspects regarding revegetation of mining dump with pillared tuf. <i>Lucrări științifice Zootehnie și Biotehnologii</i> , 2008 , 41, 218-222, ISSN 1221-5287.
	Lixandru B. , Rus V., Peț I., Pricop A., Mășu S., Rechițean D. The effect of biosolids on Medicago sativa and Festuca arundinacea plants phytoremediation process of waste dump. <i>Lucrări științifice Zootehnie Si Biotehnologii</i> , 2008 , 41, 217-221, ISSN 1221-5287
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	Pricop A. , Lixandru B., Masu S. ,Bogatu C., Szucs S. ,Studies regarding the chelate-induced hyperaccumulation of Cu and Fe using <i>Lolium Perenne</i> species in mining areas <i>Lucrări științifice Zootehnie Si Biotehnologii</i> 2009 , 42(1), 186-190, ISSN 1221-5287..

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