

Program	Program NUCLEU PN 09-13 03 17
Project title (ENG):	New techniques for the mine water treatment using sludge reprocessing and manipulation: dense sludge process and ettringite reuse
Project title (RO):	Noi tehnici de tratare ape de mina cu modificarea chimico-morfologica a namolurilor prin recirculare in faze tehnologice succesive: densificare in sistem HDS si valorificarea potentiala a etringitului
Duration	2014-2015
Team Leader	dipl.eng. Dinu Laurentiu
Summary (short description) ENG	<p>Experimental model and research for densification of metals and gypsum precipitates by recycling after alkaline conditioning.</p> <p>Studies on the decomposition of specific residues from the advanced treatment of ARD- ettringite by reaction in acidic aq media or by reuse in the preliminary treatment phases for pH adjustment and metal precipitation.</p> <p>Technological implications of saturation and desaturation with sulfates processes in the treatment of mine waters.</p> <p>Research on the treatment of an atypical source of mine water, having manganese as the main pollutant, specifically with high ratios Mn / Fe and the potential recovery of useful compounds.</p> <p>Preliminary experimental study for alternative technology for the oxidation of manganese in mine water using SO₂ / air system.</p>
Summary (short description) RO	<p>Model experimental si cercetari pentru densificarea precipitatelor de metale si gips prin recirculare dupa conditionare alcalina</p> <p>Studii privind descompunerea reziduurilor specifice de la tratarea avansata a apelor acide de mina- etringit prin reactie in mediu acid / reutilizare la faze preliminare de corectie pH/ precipitare metale.</p> <p>Implicatii tehnologice ale proceselor de suprasaturare si desaturare cu sulfati in tratarea apelor de mina.</p> <p>Cercetari privind epurarea unei surse atipice de ape de mina avand ca poluant principal mangan la rapoarte foarte mari Mn/Fe, potential cu recuperarea unor compusi valorificabili.</p> <p>Studiu experimental preliminar pentru tehnologie alternativa de oxidare a manganului din apa de mina, in sistem SO₂/aer.</p>
Dissemination of results	
Full-paper ISI	L.Dinu, M.Stefanescu, I. Balaiu, C.Cosma, I.Cristea, V.Badescu, Acid Mine Water Treatment Using High Density Sludge Technology, Journal of Environmental Protection and Ecology 15, No 4, 1700–1717.
	L. Dinu, M. Stefanescu, V. Patroescu, C. Cosma, I. Cristea, V. Badescu, M. Alexie, Trials For The Improvement Of The Ettringite Process For The Mine Water Treatment, Journal of Environmental Protection and Ecology, 17, No 1, pp. 83–93.
Full-paper BDI	Stefanescu M., Dinu L., Patroescu V., Cosma C., Badescu V., <i>Pilot Scale Study On Acid Mine Water Treatment Using High Density Sludge Technology</i> , U.P.B. Sci. Bull., Series B, Vol. 77, Iss. 1 , pp.75-86.
Conferences (platform, poster, abstract / full-paper	L. Dinu, I. Balaiu, M. Stefanescu, C.Cosma, Mine Water Chemistry For Some Closed Mining Sites In Romania And The Available Treatment Technologies, The Central and Eastern European Conference on Health and the Environment. The Environment – A Platform for Health, 4th Edition, Cluj-Napoca May 2014. CEECHE 2014

<p>Conferences (platform, poster, abstract / full-paper)</p>	<p>L. Dinu, M. Stefanescu, I. Balaiu, C.Cosma, I.Cristea, V.Badescu Mine Water Treatment Using High Density Sludge Technology MED ENV 2014 / Vosniakos, Fokion ; Cambrea, Claudia Halichidis, Stela (ed.). - Constanta : Romanian Academy, Ed.Boldas, 2014. 121 (ISBN: 978-606-8066-48-6) Book of abstracts</p>
	<p>L.R. Dinu, C. Cosma, M. Stefanescu, V. Patroescu, I. Cristea, V. Badescu, M. Alexie Trials For The Improvement Of The Ettringite Process For The Mine Water Treatment Simpozionul International "Mediul si Industria" 2015, Bucuresti</p>
	<p>L.R. Dinu, I.V. Patroescu, V. Badescu, A. Niculae, M. Alexie Ettringite Decomposition With Acidic Mine Water For Alkaline Potential Valorisation And Aluminium Hydroxide Recovery, 15th Anniversary International Multidisciplinary Scientific Geoconference & Expo SGEM 2015, Ecology and Environmental Protection, 18-24June 2015, Bulgaria.</p>
<p>Patents</p>	<p>Procedeu de epurare a apelor uzate prin separarea ionului sulfat ca etringit cu produși hidroxilați ai aluminiului recuperați din apă, Dinu Laurentiu, Cerere brevet OSIM A 2016 00242, 2016.</p>