CHEMISTRY JOURNAL OF MOLDOVA
General, Industrial and Ecological Chemistry **CJM-0718**

APPLICATION OF INNOVATIVE PROCESSES FOR GOLD RECOVERY FROM ROMANIAN MINING WASTES

Stefano Ubaldini [a*], Igor Povar [b], Tudor Lupascu [b], Oxana Spinu [b], Francesca Trapasso [a], Daniele Passeri [a], Serena Carloni [c], Daniela Guglietta [a]

[a]*Institute of Environmental Geology and Geoengineering, Italian National Research Council, Km 29.300, Salaria str., Monterotondo 00015, Italy*
[b]*Institute of Chemistry, 3 Academiei str., Chisinau, MD2028, Republic of Moldova*
[c]*Institute of Research on Terrestrial Ecosystems, Italian National Research Council, Km 29.300, Salaria str., Monterotondo 00015, Italy;*
**e-mail: stefano.ubaldini@igag.cnr.it; phone: (+39 06) 906 72 748; fax: (+39 06) 906 72 733*

Abstract. The application of a new hydrometallurgical process for gold extraction by thiosulphate leaching from Romanian mining wastes, coming from Balan and Deva deposits, was studied. A further objective of this work was to develop an integrated flow-sheet including the recycling of process solution and of the activated coconut carbon used for gold purification. There was obtained 85% of Au extraction after leaching; moreover, an integrated flow-sheet, including recycling of process solution and carbon, was outlined, based on results obtained at a laboratory scale, using a schematic chemical circuit of treatment. Global recovery of the process (leaching-adsorption-desorption-electrodeposition) of about 75-80% was achieved. The studied integrated flowsheet, allows to recycle the reagents during the process, with a loss of only 5-10%, in particular thiosulphate and alcohol, for each complete circuit of treatment.

Keywords: mining waste, gold, thiosulphate leaching, activated carbon, adsorption, desorption.