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## Achieving a sustainable development through wastewater treatment with low cost activated carbons



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Traditionally, the activated carbons (ACs) used in wastewater treatment are obtained from coal, lignite, wood or animal bones but, recently, the agro-wastes have received much more attention as a cheap source for ACs production. The employment of agro-wastes can contribute to the economic development and to reduce the environmental contamination particularly in developing countries. The eastern region of Cuba concentrates more than 90% of coffee and cocoa crops and there is a special interest in increasing productivity and cultivation areas. The cocoa and coffee husks waste could be converted into added-value products as ACs. In this region are also located the main metallurgic factories, dedicated to the extraction of nickel and cobalt from lateritic ores. During the production of nickel and cobalt mixed sulphide, it is produced the acid liquor waste (WL), which is poured with Ni(II) and Co(II) ions concentration much higher than the prescribed limits by industrial activities, thus leading to the health hazards and environmental degradation. The aim of this research is to study the adsorption characteristics of Ni(II) and Co(II) ions present in multi-elemental solutions, which simulates the wastewater from an acid leaching mineral processing technology with low cost activated carbon from cocoa and coffee husks and the conversion of the exhausted AC in others added value products.

### Biography

Mónica Hernández Rodríguez is an Assistant Professor at Mining-Metallurgical Institute (ISMM), Moa, Cuba. She is doing a PhD in Chemistry at Hasselt University (in Belgium). She received her Master's in Metallurgic Processes at ISMM and a Major's level in Process Engineering at Oriente University, Santiago de Cuba. After coming to ISMM, she has served in the Metallurgic-Chemistry Departments for over 5 years. She has been the Reviewer of the Revista Colombiana de Química.

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