

EARTH SCIENCE, RECYCLING & SPACE TECHNOLOGY

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COLD SEEPS MACROFAUNAL DIVERSITY ASSOCIATION OVER THE CONTINENTAL PACIFIC MARGIN OF AMERICA

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Cold seeps (CS) support chemo-biotic faunistic associations; the scarce research carried out into the Pacific Sea Coast of America had led the focus, towards the understanding of the relationship between those and the methane hydrate deposits, thus finding biodiversity is somehow related to substrate kind. Our research purpose was to bring some light on the ecologic association of present macrofaunal communities and its relevance with CS, to accomplish, we studied the communities at CS, starting from raw bibliographic data mining, stored and compiled on MySQL's database engine; relied about the Pacific America continental margin, on facts of diversity and distribution, in accordance with its altitudinal range (South and North Cold Areas SCA–NCA and Tropical Area-TRA) reports. With the stored data we conducted analysis as Beta-diversity indexes (Chao1, Bray Curtis), the Olmstead and Tukey's statistical Ranking and the Kruskal Wallis's ANOVA test. The results showed absence of continuous distribution between the assessed areas, indicating species heterogeneity; thus, leading to understand that the better growth progression adjustment, related to diversity and heterogeneity come about in SCA; we identified that Ampharetidae and Solemyidae staked as dominant taxonomic groups on NCA and TRA. The poor similarity observed on the communities dynamics, shows an ecological erratic nexus, stimulating ecological composition and distribution relied on metacommunities. Through the analysis, Vesicomidae and Siboglinidae showed as cosmopolitan taxonomic groups, and also as dominance indicators related with its prevalence on CS's continental margins; thus, the current range of distribution is favored in addition by the continental drift effect; which in conjunction with the marine environment variability and dynamics influenced the spatial arrangement of populations in metacommunities.

BIOGRAPHY

Janeth Viviana Pérez Arteaga got her bachelor degree from the Valle's University, in Cali-Colombia in 2007. Currently, she is Earth Sciences Master's student at the EAFIT's University, Colombia and also partaking as researcher of the Biodiversity, Evolution and Conservation Researcher's Group at the same institution. She has produced four scientific documents laying on biodiversity. Her area of interest is to serve as an environmental consultant on port and marine issues and diary work has led her to get extensive expertise in coastal-marine issues and ecological impact assessment. As a part of her personal and labour development she has been jury on dissertation and scientific research work.

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GOLD ENRICHMENT AND RECOVERY FROM E-WASTE POWDERS

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In this study, hydrocyclone is used to sort electronic waste powders. After sorting, chemical solvent UW860 is utilized to extract gold from electronic waste powders. The effect of operating ways and conditions of hydrocyclone in gathering precious metal is discussed. The use of hydrocyclone can decrease a large amount of powders needed, processed and also lower the usage of chemical solvent to make the process cost of precious metal much cheaper. The experiment result represents that it can sort electronic powders with gold into 70% in underflow by using Type B05 hydrocyclone. The concentration ratio of gold is 1.4 times than prior art. The recovery rate of gold is 99%. On the other hand, the selectivity in underflow takes up 60% by using Type E hydrocyclone, i.e., the enrichment ratio of recycling gold is 1.6 times. In fact, considering the usage of chemical solvent and the costs of operation, it is more practical and valuable to use Type E hydrocyclone..

BIOGRAPHY

Wu JM has completed his PhD from National Taiwan University, Taiwan. He is the Professor of Tamkang University, Taiwan. He has over 50 publications that have been cited over 200 times and 10 patents.

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