The University of Arizona
Chemical and Environmental Engineering Department – Seminar

"Biohydrogen production from organic solid waste"

Ivan Moreno Andrade, Ph.D.
Laboratory for Research on Advanced Processes for Water Treatment
Institute of Engineering, Universidad Nacional Autónoma de México (UNAM)

Tuesday, April 25, 2017 - 3:30-4:30PM
Harshbarger Bldg., Room 206

Coffee Hour – 3:00 – 3:30 PM
Harshbarger, Room 118B

ABSTRACT

Hydrogen (H2) is an energetic vector that in recently years is increasing its importance due to its benefits compared with other fuels, for example, the H2 combustion generates only water as sub-product and has a high specific energy compared to other fuels as natural gas, oil, diesel, ethanol, etc. However, it is necessary to decrease the cost of H2 production. One of the promising technologies to produce H2 is the dark fermentation using low-cost substrates including wastewater and organic solid waste. Organic solid wastes have high concentrations of carbohydrates that can be used for the production of biogas by dark fermentation, using that process there is a cost reduction and raise up the sustainability of the process. There are several parameters in the bioprocess that need to be optimized as the hydraulic residence time, temperature, pH and the organic loading rate in order to maximize the H2 production. In the seminar, a research about the H2 production from organic solid waste of restaurants, including some operation strategies of the bioreactors, will be presented.

BIOSKETCH

Dr. Moreno Andrade is a full time research scientist at the Institute of Engineering of the UNAM in Queretaro, Mexico since 2008. He received his Ph.D. in Biological Sciences from UNAM in 2006 and was a postdoctoral fellow at UC-Berkeley USA (2007-2008). His current research interests focus on bioprocesses for wastewater treatment and environmental microbiology, particularly on the improvement of granular sludge application to industrial wastewater treatment and the bio-refinery (production of hydrogen and methane) of organic waste.

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