Industrial Effluent Treatment / Tratamientos de Efluentes Industriales

By Dr. María Teresa Certucha Barragán
And Dr. Francisco Javier Almendariz Tapia

Short Course: 27 Nov 2011, Americana Condesa Cancun All Inclusive Resort, Cancun, Mexico

Water is an important resource, vital for both social and economic growth. It is thus imperative that water is managed according to the principles of sustainable development to counteract the combination of increasing economic development and environmental degradation. The constantly increasing degree of industrialization and urbanization, rising standards of living, increasing population growth and agricultural activities are strongly impacting on the use of available water sources and on the quality of water that is found therein. This exhaustive use of limited resources and energy by modern society implies a need for changes in present and future urban water and wastewater treatment systems. The disposal of wastewater has become an international problem; especially for acid mine drainage (heavy metals and cyanide.)

This course will present advances, reported in the literature, in the field of Industrial effluent treatment and examples from industries including treatment of cyanide dumps and acid mine drainage.

Who Should Attend

This course will be beneficial to organizations interested in technical information about wastewater treatment from the mining industry.

Course Outline

The course will discuss various types of wastewater treatments and their characteristics. It will include studies in remediation of contaminated sites (natural, chemical, electrochemical and biological), and specifics cases of studies in México.

Industrial Effluent Treatment

1. Introduction
   - 1.1 Types of pollution sources
   - 1.2 Types of water uses
   - 1.3 Main agents of pollution
   - 1.4 Characterization of wastewater

2. Remediation of contaminated sites
   - 2.1 Natural
   - 2.2 Chemical
   - 2.3 Electrochemical
   - 2.4 Biological

3. Case studies in Mexico
   - 3.1 Treatment of cyanide dumps
   - 3.2 Treatment of acid mine drainage

4. Environmental Laws

Tratamientos de Efluentes Industriales

1. Introducción
   1.1. Tipos de fuentes de contaminación
   1.2. Tipos de usos del agua
   1.3. Principales agentes de contaminación
   1.4. Caracterización de las aguas residuales

2. Restauración de sitios contaminados
   2.1 Natural
   2.2 Químico
   2.3 Electroquímicos
   2.4 Biológicos

3. Casos de estudio en México
   3.1 Tratamiento de terreros de cianuración
   3.2 Tratamiento de drenado ácido de minas

4. Normatividad ambiental

The participants will also receive:

- CD with course material
- Certificate of completion
- A copy of instructor's recently published articles
- Lunch and refreshments

Course Instructors:

Dr. María Teresa Certucha Barragán is currently a full-time research professor (Titular B) at the Chemical Engineering and Metallurgy Department, University of Sonora, where she has worked since 1987. She got her BSc degree in 1980 and the MSc degree in Extractive Metallurgy from the University of Sonora in 1995. In 2009 she received her Ph. D. degree with honors, from the University of Baja California.

Several recognitions prove to be important achievements during her professional career, including: Perfil PROMEP (granted by SESIC (SEP); 15-year and 20-year old recognitions within the teaching staff of the University of Sonora; recognition for boosting up social service projects in the years 2004 and 2005; and more recently, she received her doctorate degree with honors and she belongs to the Sistema Nacional de Investigadores (SNI) (granted by CONACYT).

She has participated in 12 research projects and served as consultant for several mining companies, including Mexicana del Cobre, Exploraciones El Dorado, Minera La Choya, Minera Álamo Dorado (Piedras Verdes), amongst others. She has been in charge of the Bioremediation laboratory, since it was created in 1998.

Dr. Francisco Javier Almendariz Tapia is a full-time research professor at the Chemical Engineering and Metallurgy Department of the University of Sonora, where he has worked since 2006. He studied Bachelor of Biological Chemistry in the UNISON (1996). Years later, he obtained his Master's Degree in Biotechnology (in 2001) and PhD in Biotechnology (in 2005) at the Metropolitan Autonomous University.

Actually, Dr. Almendariz is a member of the "Metallurgy, Materials and Environment" academy, and is leader of the academic group "Environment and Biotechnology", which works in the Environmental Chemistry and Biotechnology area of research. He is Member of the National Researchers System (SNI) since 2008 and has been recognized by the PROMEP (granted by SESIC, SEP) as desirable profile teacher of the University of Sonora.

He has led or collaborated on several research projects related to wastewater treatment of different sectors (mining, petrochemical, aquaculture) financed by CONACYT, PROMEP and industries. He has led, advised and co-directed thesis in the Doctoral, Master and Bachelor levels. He has published over 30 works, including scientific articles, reports and book chapters. He is an evaluator of candidates to calls for scientific research projects in Mexico.

REGISTRATION: https://www.flogen.com/FraySymposium/registration.php