Dr. Miguel Angel Escobedo Bretado

Academic Coordinator of the Master of Science in Nanotechnology and Chemistry of Materials
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SNI Level I

Education:
Bachelor of: Materials Science, Faculty of Chemical Sciences, University UJED, Durango, MEXICO
Masters: Materials Science, Research Center CIMAV Chih, MEXICO
Ph.D: Materials Science, Research Center CIMAV Chih, MEXICO
Postdoctoral: Materials Science, Research Center CIMAV Chih, MEXICO

Professional Experience:
Professor in the Faculty of Chemical Sciences, University UJED (Universidad Juarez del Estado de Durango) (2009 - to date).

Research Lines:
- Synthesis and characterization of materials to be used in production processes of hydrogen and CO_2 absorption.
- Production processes of hydrogen and methane (biological, photocatalytic and steam reforming of hydrocarbons).
- Photocatalytic degradation of persistent organic pollutants (POPs) and volatile organic compounds (VOCs).
- Synthesis, characterization and toxicological evaluation of nanomaterials.

Selected Publications:
- Na_2ZrO_3 stability under reforming/regeneration cycles during the steam reforming of ethanol with CO_2 absorption. Int. J. Hydrogen Energy. (2015). A. López Ortiz, M.A. Escobedo Bretado, J. Salinas Gutiérrez, M. Meléndez Zaragoza, R.H. Lara Castro, V. Collins Martínez.
- Enhanced ethanol steam reforming by CO_2 absorption using CaO, CaO*MgO or Na_2ZrO_3. Int. J. Hydrogen Energy. 39 (2014). 16595-16607. D.Y. Aceves Olivas, M.R. Baray Guerrero, M.A. Escobedo Bretado, M. Marques da Silva Paula, J. Salinas Gutiérrez, V. Guzmán Velderrain, A. López Ortiz, V. Collins-Martínez.
- Experimental and modeling kinetic study of the CO_2 absorption by Li_4SiO_4 Int. J. Hydrogen Energy. 39 (2014), 16656-16666. A. López Ortiz, M.A. Escobedo Bretado, V. Guzmán Velderrain, M. Meléndez Zaragoza, J. Salinas Gutiérrez, D. Lardizábal Gutiérrez, V. Collins-Martínez.
- Absorption enhanced reforming of light alcohols (methanol and ethanol) for the production of hydrogen: Thermodynamic modeling. Int. J. Hydrogen Energy. 38 (2013), 12539-12553. Virginia Collins-Martinez, Miguel Escobedo Bretado, Miguel Meléndez Zaragoza, Jesús Salinas Gutiérrez, Alejandro Lopez Ortiz.

- Kinetic study and modeling of the high temperature CO_2 capture by Na_2ZrO_3 solid absorbent. Int. J. Hydrogen Energy. 8 (2013), 2557-2564. Diana Barraza Jiménez, Miguel A. Escobedo Bretado, Daniel Lardizábal Gutiérrez, Jesús M. Salinas Gutiérrez, Alejandro López Ortiz, Virginia Collins-Martínez.

Directed Thesis:

Graduate students (Master's 2 and 11 Bachelor's degree)

In process:

- Jenny Paola Melendez Saucedo. Synthesis of TiO_2-SnO_2 thin film and evaluation of degradation of methylene blue under UV-VIS radiation.
- Rosa Paola Quiñones Ramírez. Cycles of hydrogen production through steam ethanol reforming combined with CO_2 absorption by Na_2ZrO_3.