

**Dra. Diana Barraza Jiménez**

Researcher and Academic
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SNI Level I

Education:

Doctor of Philosophy in Materials Science (2008) Advanced Materials Research Center.
Maestría en Ciencia y Tecnología Ambiental (2005) Advanced Materials Research Center.
Chemical Engineer (2002) Instituto Tecnológico de Chihuahua.

Professional Experience:

Researcher and Academic in Research Center for Food and Development (2009-2015).

Research Lines:

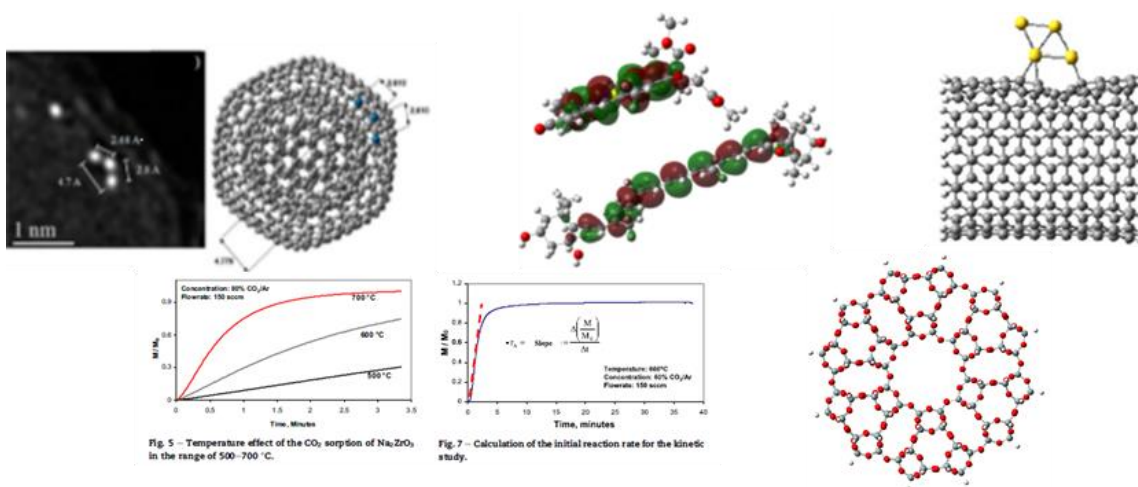
- Computational Simulation of nanomaterials and moléculas
- Nanomaterials Synthesis

Research Areas:

Carbon Nanostructures: graphene, carbon nanotubes, fullerenes, diamond, which are applied in catalysis, biomedic use and sensors.

Zeolites Nanostructures: a) with organic molecules applied in artificial photosynthesis, b) water and soil decontamination, c) agriculture use

Nanostructured materials: metallic oxides applied to catalysis and photocatalysis.

**Selected Publications:**

- F. Torres-Rivas, M. A. Flores-Hidalgo, D. Glossman-Mitnik and **D. Barraza-Jimenez** (2015) “Geometric description and electronic properties of the principal photosynthetic pigments of higher plants: a DFT study” *Journal of Molecular Modeling*, 21 (10): 256
- **D. Barraza Jiménez**, M. A. Escobedo Bretado, D. Lardizábal Gutiérrez, J. M. Salinas Gutiérrez, A. López Ortiz, V. Collins-Martínez. (2013) “Kinetic study and modeling of the high temperature CO₂ capture by Na₂ZrO₃ solid absorbent” *International Journal of Hydrogen Energy* 38 (5): 2557–2564.



- D. Santiago, G. G. Rodríguez-Calero, A. Palkar, **D. Barraza-Jimenez**, D. H. Galvan, G. Casillas, A. Mayoral, M. Jose-Yacamán, L. Echegoyen, and C. R. Cabrera (2012) “*Platinum Electrodeposition on Unsupported Carbon Nano-Onions*” *Langmuir*. 28(49):17202-10
- **D. Barraza-Jimenez**, D. H. Galvan, A. Posada-Amarillas, M. A. Flores-Hidalgo, D. Glossman-Mitnik, M. Jose-Yacaman (2012) “*Computational study of Au₄ Nanocluster on a carbon nanotube with and without defects using QM/MM methodology*”. *J Mol Model* 18:4885–4891
- **D. Barraza-Jimenez** A. Flores-Hidalgo, D. Glossman-Mitnik (2009). “*Theoretical analysis of anthracene and its carbonyl and carboxyl derivatives using DFT and TD-DFT*” *Journal of Molecular Structure: THEOCHEM* 894: 30 (1–3) 64–70

Directed Thesis:

- Francisco Torres Rivas. CIAD. *Computational Study of Geometric and Electronic Properties of Photosynthetic Pigments Dyads: A Step toward Artificial Photosynthesis* (Ph.D. candidate, in process)
- Jesús Francisco Monzón Bensojo. CIAD. *Computational Evaluation of Photosynthetic Pigments and Zeolite L to Model an Artificial Photosynthetic Antenna* (Doctorate Thesis, in process)