

Etienne Israel Palos | CV

Universidad Nacional Autónoma de México

☎ +52 664 306 5145 • ✉ g5_palo16@cryn.unam.mx

🌐 www.linkedin.com/in/etienne-palos

Education

Academic Qualifications.....

- **Universidad Nacional Autónoma de México** **Ensenada, BC**
○ Undergraduate; Nanotechnology major with emphasis in catalysis and nanostructure physics 2015 -

Research Experience

- **Universidad Nacional Autónoma de México 2017 - Present**
Computer-driven materials discovery and theoretical materials physics with a strong focus on 2D-materials, transition metal chalcogenides and carbonitrides. My responsibilities include *ab initio* investigation as well as materials hydrothermal synthesis.
Advisor(s): Donald H. Galván (theory) and Gabriel Alonso-Nuñez (experimental).
- **University of California at San Diego (STARS) Jun - August 2018**
"STARS: Summer Training Academy for Research Success". Theoretical chemistry (chemical physics) focused on the development of simplistic models to describe light-matter interaction in the strong coupling regime. My responsibilities included mathematical derivation as well as numerical computation. Main tools: Classical Electrodynamics and Quantum Mechanics / Solid State Physics.
Advisor: Joel Yuen-Zhou.
- **University of California at San Diego (NSF-SSSiN) Jul - August 2017**
"SSSiN: Summer School for Silicon Nanotechnology". Electrochemical synthesis and surface chemistry of optically-active nanostructures. My responsibilities included computational wave-guide design for the electrochemical etching of porous silicon (p-Si) photonic crystals as well as organic functionalization of the p-Si surface.
Advisor: Michael J. Sailor
- **Universidad Nacional Autónoma de México (JINyN) Jun - Jul 2017**
Computational condensed matter physics focused on the study of solid-state systems. My project consisted of calculating the electronic structure of a transition metal carbonitride using molecular orbital theory. I am a current member of this group. (See above)
Advisor: Donald H. Galván.
- **CIDETEQ Jun - August 2016**
CIDETEQ: Centro de Investigación y Desarrollo Tecnológico en Electroquímica. Electrochemical synthesis of biopolymer nanoparticles for drug delivery. My responsibilities included the synthesis and characterization of chitosan nanoparticles and their functionalization with various drugs.
Advisor: Eduardo López Maldonado.

Publications

- **Etienne I. Palos**, José I. Paez, Armando Reyes-Serrato, Donald H. Galván. Electronic structure calculations of rhenium carbonitride: an extended Hückel tight-binding study. *Phys. Scr.* **93** (11). 115801. doi:10.1088/1402-4896/aae14c

Presentations

- **Etienne I. Palos**. Semiclassical Kronig-Penney model approach to polaritonic metasurfaces. *UCSD Summer Research Conference*. Aug 17, 2018. La Jolla, CA.
- **Etienne I. Palos** and Hunter Pauker. Hydrophobic porous Si based photonic-crystals for the detection of ethanol during fermentation. *NSF - SSSiN*. Aug 17, 2018. La Jolla, CA.

Honors and awards

- CONACyT Research-Assistantship: Physical chemistry of transition metal chalcogenides with potential applications in catalysis. *G. Alonso-Núñez* 2018-Present.
- XVII National Prototype Competition: National Champion (Mexico). *For developing a computational platform for education in chemistry in Mexico and LatinAmerica*. 2015. Aguascalientes, AGS, Mexico.

Technical and Personal skills

- **Programming Languages:** LaTeX, Wolfram Mathematica, MATLAB, Python, C++ (novice)
- **Computational chemistry and materials modeling:** Quantum Espresso, Wien2K, GAMESS(US), YAEHMOP, XMD
- **Experimental chemistry:** Hydrothermal synthesis of transition-metal chalcogenides and sulfides, electrochemical etching of porous silicon, characterization of materials.
- **Computer Aided Design:** Solid-Works

Outreach and extracurricular activities

- Computational CondMatt Club at CNyN-UNAM : Club founder and administrator.
- Matematiké, A.C. Mathematics Instructor, tutor and administrator.