CURRICULUM VITAE JIMENEZ AREVALO NURIA

19/02/2020 now **Advanced Materials and Nanotechnology**
PhD
Universidad Autónoma de Madrid.
Title: Sulfuros metálicos y borocarbonitruros para la producción de hidrógeno.

10/May/2021 **Scientific Stay.**
10/Aug/2021 Scientific stay of three months (10th-may until 10th-august) at Università Sapienzà di Roma, studying the chemical composition of electrodes by XPS.

Sept. 2018/ June. 2019 **Energías Renovables y Combustibles para el Futuro**
Master. Average Mark: Notable. Ended with SPECIAL MENTION.
Universidad Autónoma de Madrid.
Master Thesis (9/10): Growth and characterization of thin film semiconductors for water splitting.

Sept. 2014/ Jul. 2018 **Física**
Bachelor degree. Average Mark: Notable
Universidad Autónoma de Madrid.
Bacherlor thesis (9/10): Exploring new materials for hydrogen production.

RESEARCH EXPERIENCE

15/02/2022 **Researcher in H_2 production**
14/08/2022 *Fundación de la Universidad Autónoma de Madrid.*
Laboratorio MIRE (Materials of Interest in Renewable Energies). Project in collaboration with a company

-Growth of materials by metal sulfurization -
XRD and EDX characterization.
-Electrochemical characterization of electrodes for water electrolysis

31/12/2021 **Researcher**
01/05/2021 *Universidad Autónoma de Madrid.*
Laboratorio MIRE (Materials of Interest in Renewable Energies).
Project: H2 photogeneration by emerging semiconductors.

01/02/2020 **Predoctoral researcher**
30/04/2021 *Universidad Autónoma de Madrid.*
Laboratorio MIRE (Materials of Interest in Renewable Energies).
Project: Metal sulfides for hydrogen production.

Jan. 2019/ Jul. 2019 **Master internship**
Universidad Autónoma de Madrid.
Laboratorio MIRE (Materials of Interest in Renewable Energies).
Project: Borocarbonitride thin film for the oxygen evolution reaction.

Jul. 2017/ **Bachelor degree internship**

Jul. 2018 *Universidad Autónoma de Madrid.*
Laboratorio MIRE (Materials of Interest in Renewable Energies). **Project:**
Growth and characterization of borocarbonitride thin films

Summary of knowledge:

- Growth of materials by CVD, PE-CVD and metal sulfurization.
- Characterization techniques: Analysis of SEM, TEM, EDX, Raman spectroscopy, XRD, XPS spectra, EELS, STM, AFM.

Taking data and analysis of resistivity and optical spectra with and without integration sphere.

- (Photo)electrochemical characterization of electrodes for water electrolysis. Preparation of electrolytes. Characterization with a potentiostat. Cyclovoltammetry, Linear Sweep Voltammetry, Electrochemical Impedance Spectroscopy, Faradaic efficiency, Chronoamperometry and Chronopotentiometry.

AWARDS

Graduate Student Award
EMRS– 2022 Fall Meeting
In recognition of the outstanding paper presented at the symposium "Advanced catalytic materials for (photo) electrochem. Energy Conversión III"

Best Project Award. 2nd prize.
International Summer School on nanosciences and nanotechnologies. NANOSUM-2022.

1st Award Three minute tesis 2022.
Universidades Complutense de Madrid, de Alcalá, Politécnica de Madrid, Autónoma de Madrid y rey Juan Carlos

3rd Award II Concurso #HiloTesis
Universidad Autónoma de Madrid

Special mention
Course 2018/2019
Universidad Autónoma de Madrid

LENGUAGESCOMPUTING

Spanish: Native

English: Advanced
C1. *Advanced Certficate in English (Cambridge Exams)*

Italian: Intermediate
B1 *(Escuela Oficial de Idiomas)*

French: Basic

- Microsoft Office (Word, Excel, Power Point…)
- Igor
- PV Syst, LTSpice, Uipath
- Data analysis Origin and Excel (Macros).

Programming skills in:
-Python -
Matlab
-Visual Basic.Net

SCIENTIFIC ARTICLES

•Jiménez-Arévalo, Nuria, et al. "Highly defective MoS2 ultrathin nanoflakes for electrolytic hydrogen evolution" (Writing)

•Jiménez-Arévalo, Nuria, et al. "Stabilization of TiS3 photoanodes for water splitting in alkaline media: effect of the protection with TiO2 and BCN shells" (Submitted)

•Jiménez-Arévalo, Nuria, et al. "Borocarbonitride Layers on Titanium Dioxide Nanoribbons for Efficient Photoelectrocatalytic Water Splitting."(2021) 5490.

•Jimenez-Arevalo, Nuria, et al. "Ultrathin Transparent B–C–N Layers Grown on Titanium Substrates with Excellent Electrocatalytic Activity for the Oxygen Evolution Reaction. "*ACS Applied Energy Materials*(2020) 1922-1932.

•Leardini, Fabrice, et al. "A fast synthesis route of boron–carbon–nitrogen ultrathin layers towards highly mixed ternary B–C–N phases."*2D Materials*(2019) 035015.

CONGRESSES

• Nuria Jiménez-Arévalo(*), Jinan Hussein Awadh Al Shuhaib, Rodrigo Bautista Pacheco, Antonella Cutrupi, Mahmoud M Saad Abdelnabi, Riccardo Frisenda, Maria Grazia Betti, Carlo Mariani, Yolanda Manzanares, Cristina Gómez Navarro, Antonio Martínez Galera, Jose Ramón Ares, Isabel Jiménez Ferrer, Fabrice Leardini. "Highly defective MoS2 ultrathin nanoparticles for electrolytic hydrogen evolution". **EMRS-Fall Meeting 2022**. 19th23rd September 2022– Warsaw (Oral contribution).

•Nuria Jiménez-Arévalo (*) , Eduardo Flores, Alessio Giampietri, Marco Sbroscia, Maria Grazia Betti , Carlo Mariani, José R. Ares, Isabel J. Ferrer, Fabrice Leardini. "Capas de TiO2 y BCN sobre TiS3 para la producción de hidrógeno en electrolitos acuosos". **CNMAT 2022.** 28th June– 1st July. Universidad Castilla la Mancha– Ciudad Real (Oral contribution).

•Nuria Jiménez-Arévalo (*) , Eduardo Flores, Alessio Giampietri, Marco Sbroscia, Maria Grazia Betti , Carlo Mariani, José R. Ares, Isabel J. Ferrer, Fabrice Leardini. "TiO2 and BCN coatings on TiS3 for H2 generation in alkaline electrolytes". **Advanced Energy Materials 2022.** 6th -8th April 2022. Imperial College of LondonLondon. (Oral contribution).

•Nuria Jiménez-Arévalo (*) , Eduardo Flores, Alessio Giampietri, Marco Sbroscia, Maria Grazia Betti , Carlo Mariani, José R. Ares, Isabel J. Ferrer, Fabrice Leardini. "TiO2 and BCN coatings on TiS3 for water splitting in alkaline electrolytes. Synthesis, characterization and photoelectrochemical results." **XXIV Jornada de Jóvenes científicos. Instituto Universitario de Ciencia de Materiales Nicolas Cabrera.** 17th December 2021. (Oral contribution)

•Nuria Jiménez-Arévalo (*), Fabrice Leardini, Isabel Jiménez Ferrer, José Ramón Ares, Carlos Sánchez, Mahmoud M. Saad Abdelnabi, Maria Grazia Betti, Carlo Mariani. "2D borocarbonitride layers as efficient electrocatalyst for the oxygen evolution reaction" **EMRS Spring Meeting 2021**. Virtual Conference. 31st May– 3rd June 2021. (Oral contribution)

•Nuria Jimenez-Arevalo (*), Isabel J. Ferrer y Fabrice Leardini. "Ultrathin Transparent B-C-N layers grown on titanium substrates with excellent electro-catalytic activity for oxygen evolution reaction". **XXII Jornada de Jóvenes científicos. Instituto Universitario de Ciencia de Materiales Nicolas Cabrera.** 19th December 2019. (Oral contribution).

•Nuria Jimenez-Arevalo (*), Isabel J. Ferrer y Fabrice Leardini. "Boron-Carbon-Nitrogen ultrathin nanolayers with remarkable photo-electro-catalytic activity for water splitting". **XXI Jornada de Jóvenes científicos. Instituto Universitario de Ciencia de Materiales Nicolas Cabrera.** 21 diciembre 2018. (Poster).

(*) Author who presented the work

SEMINARS and COURSES

2022– *SummerLIB 2022*. SummerSchool about lithium batteries (50h)-. CIVIS Universities.

2022– *NanoSUM 2022*. SummerSchool about nanoscience. (10 days)- Universidad Aix-Marseille.

2022- Electrochemical Impedance Spectroscopy. A powerful technique for the development of Batteries.

2022- Peer Review Excellence
2021- Advanced paper writing (4h)
2020- Smart Grid. Fundamentos técnicos. EdX. (40h)
2020- Machine Learning. Miriadax. (20h)

2019- Robotic Process Automation. Escuela de Organización Industrial/ Mc Kinsey. (358h)