


# Néstor Guijarro Carratalá


Ramon y Cajal Research Professor &  
ERC Starting Grant fellow

Institute of Electrochemistry, University of Alicante (Spain)

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## 1. EDUCATION

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### University of Alicante

Spain

14/05/2013

**Ph.D. in Materials Science** (*Cum laude*)

*Dissertation: "Study of the Photoelectrochemical Properties of Nanostructured Titanium Oxide Electrodes Sensitized with Quantum Dots: Application to Hybrid Solar Cells"* [Link](#)

Advisors: Prof. Roberto Gómez and Prof. Teresa Lana Villarreal

### University of Alicante

Spain

30/06/2007

**B.Sc. & M.Sc. in Chemistry** (duration 5 years, GPA 3.7/4)

*Emphasis on analytical, inorganic, organic and physical chemistry*

## 2. EMPLOYMENT HISTORY

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### University of Alicante

Spain

09/2020 – present

**Tenure-track Assistant Professor** (Ramon y Cajal Professorship)

Head of the **Advanced Solar Schemes and Electrochemical Technologies** (ASSET) laboratory for environmental sustainability. [Link](#)

### École Polytechnique Fédérale de Lausanne (EPFL)

Switzerland

Laboratory for Molecular Engineering of Optoelectronic Nanomaterials (*Head: Prof. Kevin Sivula*)

**Research Project Leader** (Ambizione Energy Fellow)

06/2016 – 12/2020

**Post-doctoral Research Scientist** (Marie Curie Fellow)

06/2013 – 05/2016

### University of Alicante

Spain

01/2008 – 05/2013

Group of Photochemistry and Electrochemistry of Semiconductors (*Head: Prof. Roberto Gómez*)

**Graduate Research Assistant**

*Including research studies developed at Imperial College London (United Kingdom) and the University of Electro-Communications (Japan) as visiting scholar.*

### University of Alicante

Spain

07/2007 – 12/2007

Group of Electrocatalysis and Polymer Electrochemistry (*Head: Prof. José Vazquez*)

**Undergraduate Research Assistant**

## 3. INSTITUTIONAL RESPONSIBILITIES

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### University of Alicante (UA)

Spain

04/2021 – present

Elected **representative at the executive board** of the Institute of Electrochemistry (UA)

## 4. APPROVED RESEARCH PROJECTS

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### ERC Starting Grant

“Refining Lignin by advanced Catalytic schemes powered by Sunlight (RELICS)(Ref. #948829”. **Role:** Principal Investigator (PI); **Budget:** EUR 1'536'183.00 ([link](#)). **Starting-Ending date:** 01/09/2021 – 31/08/2026.

Spain

06/2021 – 05/2026

**Ramon y Cajal (tenure-track) Research Professorship** from the Spanish Ministry of Science, Innovation and Universities (Ref. RYC2018-023888-I).

“Novel materials for efficient photoelectrochemical energy conversion: from nanoscale engineering to device fabrication”. **Role:** PI; **Budget:** EUR 308'600.00 ([link](#)). **Success Rate:** 7 %. **Starting-Ending date:** 01/09/2020 – 30/08/2025.

Spain

09/2020 – 08/2025

**Ambizione Energy Grant** from the Swiss National Science Foundation (Ref. PZENP2\_166871)

“Novel Interfacial Characterization and Surface Engineering in Semiconductor Electrodes for Optimized Solar Fuel Production”. **Role:** PI; **Budget:** CHF 774'192.00 ([link](#)). **Success Rate:** 16 %. **Starting-Ending date:** 01/06/2016 – 31/12/2019.

Development of a novel electrochemical platform for the characterization of the electrode-electrolyte interface during solar water splitting reactions.

Switzerland

06/2016 – 12/2019

**Intra-European Marie Curie Fellowship (IEF)** from European Commission (Ref. 326919)

“Development of Electrodes Based on Copper Chalcogenide Nanocrystals for Photoelectrochemical Energy Conversion (COCHALPEC)”. **Role:** Co-PI; **Budget:** EUR 184'709.40 ([link](#)).

Project conceived to establish new routes for utilizing semiconductor chalcogenide nanocrystals as building blocks for the fabrication of highly efficient photocathodes for solar water reduction.

Switzerland

06/2013 – 06/2016

**Training of University Teaching Staff grant** from the Spanish Ministry of Education

“Study of the Photoelectrochemical Properties of Nanostructured Titanium Oxide Electrodes Sensitized with Quantum Dots: Application to Hybrid Solar Cells”. **Role:** Fellow; **Budget:** EUR 54'000.

Design, optimization and fundamental understanding of quantum dot-sensitized solar cells. The studies encompassed the synthesis of chalcogenide nanocrystals, thin-film processing and device fabrication as well as the characterization of carrier dynamics by electrochemical tools and pump-probe spectroscopies.

Spain

07/2008 – 05/2013

## 5. SUPERVISION OF RESEARCHERS

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**Yongpeng Liu.** PhD Student, linked to the Ambizione Energy Grant; **Thesis co-director;**

**Project:** Development of new tools for directly monitoring the electrochemical dynamics at the semiconductor-liquid junction and buried junctions under operating conditions.

Switzerland

02/2017 – 07/2021

**Javier Quiñonero.** Visiting Scholar.

**Project:** Designing nanostructured LaFeO<sub>3</sub> photoanodes for photoelectrochemical water oxidation.

Switzerland

07/2018 – 10/2018

**Laura Bujouves.** Master Student

**Project:** Morphology control of hybrid nanocrystals by ligand-assisted colloidal synthesis.

Switzerland

03/2018 – 07/2018

**Xiaodi Zhu.** Visiting Scholar

Switzerland

<b>Project:</b> Defect engineering of ZnFe <sub>2</sub> O <sub>4</sub> thin-films for enhanced water oxidation performance.	<b>10/2016 – 07/2018</b>
<b>Pauline Borno.</b> PhD Student	<b>Switzerland</b>
<b>Project:</b> Organic semiconductors as photoanodes for water oxidation.	<b>2013 – 2017</b>
<b>Mathieu Prévot.</b> PhD Student	<b>Switzerland</b>
<b>Project:</b> Investigating and controlling charge carrier behavior in p-type delafossite CuFeO <sub>2</sub> photocathodes for solar fuel production.	<b>2013 – 2017</b>
<b>Xiaoyun Yu.</b> PhD Student	<b>Switzerland</b>
<b>Project:</b> Solution-processed 2D transition metal dichalcogenides for solar energy conversion.	<b>2013 – 2017</b>
<b>Pierre Bouvier.</b> Master Student	<b>Switzerland</b>
<b>Project:</b> Synthesis and evaluation of the WSe <sub>2</sub> /WO <sub>3</sub> Janus particles for photocatalytic water splitting.	<b>2013 – 2017</b>
<b>Sacha Corby.</b> Undergraduate Visiting Scholar	<b>Switzerland</b>
<b>Project:</b> Tunable surface composition of electrodeposited CuFeO <sub>2</sub> for optimized solar fuel production.	<b>06/2015 – 08/2015</b>
<b>Yang Li.</b> Visiting Scholar	<b>Switzerland</b>
<b>Project:</b> Development of solution-based routes for the fabrication of delafossite oxides for solar water splitting applications.	<b>2014</b>

## 6. TEACHING ACTIVITIES

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### Electrochemistry of Semiconductor Materials

Doctoral Course; **Role:** Lecturer.

*The aim of this course is to present the fundamentals and applications of the electrochemistry of semiconductors, establishing bridges with other topics such as solid state physics, surface chemistry and various characterization techniques.*

**Spain**  
**2021**

### Solar Photovoltaics and Energy Systems

Doctoral Course (Chemistry and Chemical Engineering); **Role:** Lecturer.

*I imparted lessons that provided a general overview on the state-of-the-art technologies for solar energy storage and further focused on and critically discussed the emerging technologies to perform artificial photosynthesis.*

**Switzerland**  
**2018**

### Applied Physical Chemistry

Bachelor Course (Chemical Engineering); **Role:** Teaching assistant.

**Spain**  
**2012 – 2013**

### Experiments in Physical Chemistry

Master Course (Chemistry); **Role:** Teaching assistant.

**Spain**  
**2012 – 2013**

### Basic Laboratory Operations

Bachelor Course (Chemistry); **Role:** Teaching assistant.

**Spain**  
**2011-2012 /**  
**2010-2011**

### Introduction to Experimental Chemistry and Instrumental Techniques

Bachelor Course (Chemistry); **Role:** Teaching assistant.

*As a teaching assistant my activities encompassed mentoring the students on a particular topic in the field of physical chemistry through a master class, supervising their progress in the experimental activities in the laboratory, developing examinations to evaluate the knowledge acquired.*

**Spain**  
**2009-2010 / 2008-**  
**2009**

## 7. OUTREACH ACTIVITIES

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### Organizer/keynote speaker in seminars at the University of Alicante

Workshops for undergraduate – graduate students at the Faculty of Science

- “Why should I start a PhD or a postdoc? Steps to follow...”

**Spain**  
**2018**

- “Progress in photovoltaics and artificial photosynthesis”

**Creator of the Science Blog Mat4Secon.** [Link](#)

A website created to share my experience as a researcher and disseminate my scientific results closer to undergraduate and graduate students. Overall, the aim of this website is to motivate young researchers to dive into the field of solar energy conversion.

**Switzerland**  
2015 – present

**Keynote speaker (ERC Writing a Successful Proposal: Experiences in Europe - Webinar - Università Degli Studi di Udine)**

**Spain**  
2021

Succeeding at an ERC Starting Grant Application: Career Indicators and Project Vision  
29-09-2021

## 8. PUBLICATIONS, CONFERENCES & WORKSHOPS

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Participation in over 20 international conferences with over 14 invited talks (a complete list of conference contributions can be found in the Appendix).

### • Selected Invited Talks (recent)

- (1) “Emerging semiconductors for the next generation of photoelectrochemical devices: materials’ engineering and interfacial understanding”, **Catalonia Energy Research Institute**, Sept. 15<sup>th</sup>, 2021, Barcelona (Spain).
- (2) “Advancing Photoelectrochemical and Photocatalytic systems for solar-to-chemical production: the importance of materials’ engineering and catalyst programming”, **Catalan Institute of Nanoscience and Nanotechnology (ICN2)**, Oct. 6<sup>th</sup>, 2020, *Barcelona (Spain)*
- (3) “Advancing Photoelectrochemical and Photocatalytic systems for solar-to-chemical production: the importance of materials’ engineering and catalyst programming”, **Swiss Federal Laboratories for Material Science and Technology (EMPA)**, Sept. 22<sup>nd</sup>, 2020, *Dübendorf (Switzerland)*.
- (4) “Advancing direct solar to fuel production using semiconductor photoelectrochemistry. A revealing journey on materials’ engineering and interfacial characterization”. **King Abdullah University of Science and Technology (KAUST)**, June 21<sup>st</sup>, 2020, Thuwal (Saudi Arabia). *Webinar*.
- (5) “Reimagining solar energy harvesting: From low cost photovoltaics to liquid sunlight”. **The Institute of Photonic Science (ICFO)**, Jan. 29<sup>th</sup>, 2020, Barcelona (Spain).

### Selected Publications (Last 5 years)

- (1) Y. Liu, M. Bouri, L. Yao, M. Xia, M. Mensi, M. Grätzel, K. Sivula, U. Aschauer, **N. Guijarro\***. “Identifying Reactive Sites and Surface Traps in Chalcopyrite Photocathodes”. *Angew. Chem. Int. Ed.* **2021**, DOI: 10.1002/anie.202108994. [Link](#)
- (2) Y. Liu, J. Quiñero, L. Yao, X. Pereira, M. Mensi, R. Gomez, K. Sivula, **N. Guijarro\***. “Defect Engineering nanostructured LaFeO<sub>3</sub> photoanodes improves the activity for solar water oxidation”. *J. Mater. Chem. A*, **2021**, 9, 2888-2898. [Link](#)
- (3) Y. Liu, M. Xia, L. Yao, M. Mensi, D. Ren, M. Grätzel, K. Sivula, **N. Guijarro\***. “Spectroelectrochemical and chemical evidence of surface passivation at zinc ferrite (ZnFe<sub>2</sub>O<sub>4</sub>) photoanodes for solar water oxidation.” *Adv. Funct. Mater.* **2021**, 31, 2010081. [Link](#)
- (4) **N. Guijarro**, L. Yao, F. Le Formal, R. Wells, Y. Liu, B. P. Darwich, L. Navratilova, H.-H. Cho, J.-H. Yum, K. Sivula. “Lead halide perovskite quantum dots enhance the power conversion efficiency of organic Solar Cells”. *Angew. Chem. Int. Ed.* **2019**, 131, 12826-12834. [Link](#).
- (5) Y. Liu F. Le Formal, F. Boudoire, L. Yao, Kevin Sivula, **N. Guijarro\***. “Insights into the interfacial carrier behavior of copper ferrite (CuFe<sub>2</sub>O<sub>4</sub>) photoanodes for solar water oxidation”. *J. Mater. Chem. A*. **2019**, 7, 1669-1677. [Link](#).
- (6) **N. Guijarro**, M. S. Prévot, X. Yu, X. A. Jeanbourquin, P. Bornoz, W. Bourée, M. Johnson, F. Le Formal, K. Sivula. “A bottom-up approach toward all solution-processed high efficiency Cu(In,Ga)S<sub>2</sub> photocathodes for solar water splitting”. *Adv. Energy Mater.*, **2016**, 6, 1501949. [Link](#).

- Co-author of over 50 publications (18 as first author and 13 as corresponding author) in international peer-reviewed journals, which have garnered over 3400 citations and an *h*-index of 27 (Google Scholar 01/2022).

## 9. REFEREE

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- **Nature Publishing Group:** Nature Communications, Nature Energy
- **American Chemical Society:** Chemistry of Materials, Journal of Physical Chemistry Letters, Journal of Physical Chemistry C
- **Royal Society of Chemistry:** Materials Horizons, Chemical Science, Journal of Materials Chemistry A/C, Nanoscale, Physical Chemistry Chemical Physics, New Journal of Chemistry, RSC Advances
- **Wiley-VCH:** Advanced Materials, Advanced Materials Interfaces, ChemSusChem, Solar RRL
- **Spanish Foundation for Science and Technology:** Reviewer of ERC Starting grant proposals

## 10. PRIZES, AWARDS AND FELLOWSHIPS

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<b>LaForge startup prize</b> , from Innosuisse Prestigious prize to join <u>LaForge Incubator</u> at EPFL's Innovation park	<b>Switzerland</b> <b>2020 - present</b>
<b>Ramon y Cajal Fellowship</b> , Ministry of Science, Innovation and Universities, Spain Most prestigious tenure-track research professorship awarded in Spain. Success rate (2019): 7%.	<b>Spain</b> <b>2019</b>
<b>Prime Speciale</b> , Faculté des Sciences de Base (SB), EPFL <i>Salary bonus in recognition for the outstanding research work performed.</i> <b>Award:</b> 2000 CHF.	<b>Switzerland</b> <b>2015</b>
<b>Mobility Grants</b> , Spanish Government <i>Financial support awarded as a PhD student to join as a visiting scholar at the Toyoda's laboratory (University of Electro-Communications, Japan) and at Haque's laboratory (Imperial College London, United Kingdom). Work related to the characterization of carrier dynamics in photovoltaic systems using pump-probe spectroscopies.</i> <b>Accumulative award:</b> € 14'000.	<b>Spain</b> <b>2009, 2010, 2011</b>
<b>Regional Graduate Award</b> , Ministry of Education of the Generalitat Valenciana <b>Ranked 1<sup>st</sup></b> in the chemistry master's graduate category at regional level. <i>Official award for students that demonstrated the highest scores as well as promising research studies in the region of Valencia, Spain.</i> <b>Award:</b> € 3'500.	<b>Spain</b> <b>2008</b>
<b>National Graduate Award</b> , Spanish Ministry of Education <b>Ranked 3<sup>rd</sup></b> in the chemistry master's graduate category at national level. <i>Official award to recognize the students that achieved the highest overall grades and relevant research.</i> <b>Award:</b> € 3'000.	<b>Spain</b> <b>2008</b>
<b>Extraordinary Graduate Award</b> , University of Alicante, Spain <i>Prize awarded to the graduate student that achieved the highest grades during the university studies.</i>	<b>Spain</b> <b>2007</b>

## 11. COLLABORATIONS/VISITS AT EXTERNAL RESEARCH CENTERS

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<b>University of Electro-Communications, Chofu</b> Department of Engineering Science, Faculty of Informatics and Engineering ( <i>Head: Prof. Taro Toyoda and Prof. Qing Shen</i> ) <i>Analysis of ultrafast photogenerated charge carrier dynamics in quantum dot-sensitized metal oxide thin films using transient grating techniques and fabrication of state-of-the-art solar cells.</i>	<b>Japan</b> <b>08/2009 – 11/2009</b>
<b>Imperial College London</b> Department of Chemistry and Centre for Plastic Electronics ( <i>Head: Prof. Saif A. Haque</i> )	<b>United Kingdom</b> <b>10/2010 – 12/2010</b> <b>09/2011 – 12/2011</b>

*Development of new synthetic routes to prepare metal sulfides and analysis of photogenerated carrier dynamics of sensitized films by time-resolved photoluminescence decays (nanosecond timescale) and transient absorption spectroscopy (microsecond-to-second timescale).*

## **12. LANGUAGES**

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Spanish– Native Language

English – Fluent written and spoken

French – Medium level written and spoken

## **13. REFERENCES**

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- Prof. Kevin Sivula. Ecole Polytechnique Federale de Lausanne. E-mail: [kevin.sivula@epfl.ch](mailto:kevin.sivula@epfl.ch)
- Prof. Teresa Lana-Villareal. University of Alicante. E-mail: [teresa.lana@ua.es](mailto:teresa.lana@ua.es)
- Prof. Ignacio Tudela Montes. University of Edinburgh. E-mail: [ignacio.tudela@ed.ac.uk](mailto:ignacio.tudela@ed.ac.uk)
- Prof. Roberto Gómez. University of Alicante. E-mail: [roberto.gomez@ua.es](mailto:roberto.gomez@ua.es)

## APPENDIX. INTERNATIONAL CONFERENCES AND SEMINARS

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### Research presentations

- Talks at international/national conferences
- (1) **N. Guijarro**. “*Reimagining semiconductor materials for solar fuel production*”. **International Workshop on Solar Energy Conversion – International Talents Forum on Photoelectronics**, November 22-24, 2019, Nankai University (China). **INVITED TALK.**
  - (2) **N. Guijarro**. “*Sensing the potential at the semiconductor-liquid interface: A route to uncover the electronic dynamics during photoelectrosynthetic reactions*” ACS Fall meeting, Aug. 25-29, 2019, San Diego (United States).
  - (3) **N. Guijarro**. “*Monitoring the interfacial electronic dynamics at the semiconductor-liquid junction: a new route to interrogate photoelectrosynthetic reactions*”. SCS Photochemistry Symposium, Jun. 14, 2019, Fribourg (Switzerland). **INVITED TALK.**
  - (4) **N. Guijarro**. “*Operando sub-microsecond potential-sensing at the electrode-electrolyte interface: exposing the surface energetics and carrier dynamics during solar fuel production*”. NanoGe Fall Meeting-Solar Fuels, Oct. 22-26, 2018, Málaga (Spain). **INVITED TALK.**
  - (5) **N. Guijarro**. “*In-Operando Potential Sensing at the Semiconductor-Liquid Junction: Exposing the Surface Energetics and Interfacial Kinetics during Photoelectrosynthetic Reactions*”. SCS Fall Meeting, Sept. 7, 2018, Lausanne (Switzerland).
  - (6) **N. Guijarro**. “*Reimagining semiconductor photoelectrodes for photoelectrochemical water splitting via solution processing*”. EMN Meetings-Energy Materials, May 12-16, 2018, Chengdu (China). **INVITED TALK.**
  - (7) **N. Guijarro**, P. Borno, M. Prévot, X. Yu, M. Johnson, F. Le Formal, K. Sivula. “*Spinel ferrites  $MFe_2O_4$  ( $M = Cu, Mg, Zn$ ) as emerging photoanodes for water oxidation: an in-depth analysis of the photoelectrochemical properties*”. ECS Meeting, May 28- Jun. 1, 2017, New Orleans (USA).
  - (8) **N. Guijarro**. “*Solution-based photoelectrodes for photoelectrochemical energy conversion: towards a scalable tandem cell technology for solar water splitting*”. EMN Meetings-Energy Materials, May 9-13, 2017, San Sebastian (Spain). **INVITED TALK.**
  - (9) **N. Guijarro**, M. Prévot, X. Yu, X. Jeanbourquin, K. Sivula. “*Surface engineering, mesostructuring and doping treatments: on how to enhance the solar energy conversion of semiconductor chalcogenide nanocrystals*”. E-MRS Spring Meeting, May 11-15, 2015, Lille (France).
  - (10) **N. Guijarro**, M. Prévot, K. Sivula. “*Solution-processed p-type photocathodes for solar water splitting*”. 26<sup>th</sup> Workshop on Quantum Solar Energy Conversion (Quantsol 2014), Mar. 16-21, 2014, Salzburg (Austria).
  - (11) **N. Guijarro**, I. Barceló, E. Guillén, S. A. Haque, T. Lana-Villarreal, R. Gómez. “*Toward the rational design of quantum dot sensitized solar cells*”. E-MRS Spring Meeting, May 27-31, 2013, Strasbourg (France).
  - (12) **N. Guijarro**, T. Lutz, T. Lana-Villarreal, R. Gómez, S. A. Haque. “*The prospect of  $Sb_2Se_3$ -sensitized solar cell*”. Spain-Japan Cooperation Workshop on Quantum Dot Sensitizers, Mar. 8, 2011 Castellón (Spain).
  - (13) **N. Guijarro**, Q. Shen, S. Giménez, I. Mora-Seró, T. Lana-Villarreal, J. Bisquert, T. Toyoda, R. Gómez. “*Charge separation in quantum-dot sensitized solar cells: effect of the mode of attachment and QD size*”. Nanoscale Devices for Environmental and Energy Applications, Apr. 26-27, 2010, San Sebastián (Spain).
  - (14) **N. Guijarro**, H. J. Salavagione, C. Quijada, J. L. Vázquez. “*Copolimerización electroquímica de anilina e isómeros de Sulfatoetilsulfonilnilina. Una ruta para injertar precursores de Grupos reactivos a fibras textiles en polianilinas*”. XXIX Reunión del Grupo de Electroquímica de la Real Sociedad Española de Química, Jul. 9-12, 2007, Lleida (Spain).
  - (15) **N. Guijarro**, H. J. Salavagione, C. Quijada, J. L. Vázquez. “*Post-funcionalización de polianilina con grupos diclorotriazínicos reactivos de fibras celulósicas*”. XXIX Reunión del Grupo de Electroquímica de la Real Sociedad Española de Química, Jul. 9-12, 2007, Lleida (Spain).

- Invited seminars at research institutions

- (16) **N. Guijarro**, “*Succeeding at an ERC Starting Grant Application: Career Indicators and Project Vision*”, **Università Degli Studi di Udine**, ERC Writing a Successful Proposal: Experiences in Europe -Webinar -Sept. 29<sup>th</sup>, 2021 Udine (Italy).
- (17) **N. Guijarro**, “*Advancing Photo-electrochemical and -catalytic Systems for Sustainable Chemistry: A new path towards a Circular Economy*”, **University of Zurich**, Dec. 8<sup>th</sup>, 2020, Zurich (Switzerland)
- (18) **N. Guijarro**, “*Advancing Photoelectrochemical and Photocatalytic systems for solar-to-chemical production: the importance of materials’ engineering and catalyst programming*”, **Catalan Institute of Nanoscience and Nanotechnology (ICN2)**, Oct. 6<sup>th</sup>, 2020, Barcelona (Spain)
- (19) **N. Guijarro**, “*Advancing Photoelectrochemical and Photocatalytic systems for solar-to-chemical production: the importance of materials’ engineering and catalyst programming*”, **Swiss Federal Laboratories for Material Science and Technology (EMPA)**, Sept. 22<sup>nd</sup>, 2020, Dübendorf (Switzerland).
- (20) **N. Guijarro**, “*Advancing Photoelectrochemical and Photocatalytic systems for solar-to-chemical production: the importance of materials’ engineering and catalyst programming*”, **Leiden University**, Sept. 14<sup>th</sup>, 2020, Leiden (Netherlands)
- (21) **N. Guijarro**, “*Advancing photoelectrochemical and photocatalytic systems for solar-to-chemical production*”. **King Abdullah University of Science and Technology (KAUST)**, July 6<sup>th</sup>, 2020, Thuwal (Saudi Arabia). *Technical Seminar*.
- (22) **N. Guijarro**, “*Advancing direct solar to fuel production using semiconductor photoelectrochemistry. A revealing journey on materials’ engineering and interfacial characterization*”. **King Abdullah University of Science and Technology (KAUST)**, June 21<sup>st</sup>, 2020, Thuwal (Saudi Arabia). *Webinar*.
- (23) **N. Guijarro**, “*Reimagining solar energy harvesting: From low cost photovoltaics to liquid sunlight*”. **The Institute of Photonic Science (ICFO)**, Jan. 29, 2020, Barcelona (Spain).
- (24) **N. Guijarro**, “*A blueprint for harvesting sunlight: from nanoscale engineering to device fabrication*”. **EMPA**, Feb. 20, 2019, Dübendorf (Switzerland).
- (25) **N. Guijarro**, “*New approaches for solar energy harvesting: from nanoscale engineering to device fabrication*”. **University of Fribourg**, Nov. 19, 2018 (Switzerland).
- (26) **N. Guijarro**, “*On the prospects of solar energy conversion: artificial photosynthesis*”. **University of Bern**, Oct. 30, 2018 (Switzerland).
- (27) **N. Guijarro**, “*New schemes for solar energy conversion*”. **University of Utrecht**, Sept. 6, 2018 (Netherlands).