

Roberto Sánchez Naya

PhD, Organic Chemist

04/04/1993 Madrid, Spain

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WORK EXPERIENCE

Organic Chemistry

Reticular Chemistry (2D-COFs)

Solid State Chemistry

Porous systems

Postdoctoral Researcher

11/2022 – Present

Bellaterra, Spain

Catalan Institute of Nanoscience and Nanotechnology (ICN2)

And Autonomous University of Barcelona (UAB)

ERC funded postdoctoral researcher position in the Supramolecular Nanochemistry and Materials Group (PI: Dr. Daniel Maspoch).

Predocctoral Researcher

10/2017 – 10/2022

Würzburg, Germany

University of Würzburg

Center for Nanosystems Chemistry (CNC) and Faculty of Organic Chemistry

PhD student position funded by the Solar Technologies go Hybrid (Soltech) program of the Bavarian Ministry of Science and Arts in the Porous Functional Materials Group (PI: Prof. Dr. Florian Beuerle).

Tasks and Responsibilities:

- Establishment of new research lines in an early-stage research group.
- Experiment planning and data analysis, preparation of scientific figures and images.
- Poster presentations in national and international conferences within Germany.
- Writing and preparation of one publication as a first author, another in progress.
- Daily supervision of students: One BSc. Thesis (German grade: 1.0, excellent), two master's practical students, four undergraduate practical students. Constant support of other practical students.
- Teaching and supervision of practical courses: *Organic chemistry practical course for students of chemistry* (2 Courses, 300 h in total, 15-30 students). *Basic chemistry practical course for students of medicine and dentistry* (1 Course, 100 h, 10-15 students).
- Chemical inventory management.
- Solvent management and waste disposal.
- Surveillance and correction of organic chemistry exams.

Internship

07/2014 – 11/2014

Madrid, Spain

Complutense University of Madrid

And General Organic Chemistry Institute (IQOG) of the Spanish National Research Council (CSIC)

Internship in the Bioactive Lactams and Heterocycles Group (PI: Dr. Pedro Almendros).

- **Project:** Study of indole carbocyclation reactions catalyzed by transition metals.
- Acquisition of basic skills in Synthetic Organic Chemistry.

EDUCATION

PhD in Organic Chemistry

Magna Cum Laude

10/2017 – 10/2022

Würzburg, Germany

University of Würzburg

*Center for Nanosystems Chemistry
and Faculty of Organic Chemistry*

Supervisor: **Prof. Dr. Florian Beuerle**

- **Project:** Synthesis of dye-containing Covalent Organic Frameworks (BODIPYs and DPPs), characterization by several techniques and screening of applications: generation of singlet oxygen, photocatalysis and detoxification of a mustard gas simulant, sensing and adsorption of pollutants and preparation of magnetic nanoparticles-COF composite materials.
- Expertise in Organic and Reticular Chemistry: Synthesis of organic dye molecules, obtention of 2D-crystalline polymers via solvothermal methods and structure elucidation of discrete organic molecules and polymers.
- Equipment used: Powder X-Ray Diffraction, Fourier Transform Infrared Spectroscopy, UV-VIS Absorption, Fluorescence, Diffuse Reflectance Spectroscopy, N₂ and Ar Physisorption, Centrifuges, Photocatalytic set ups and Reactors, Flash Chromatography.
- Further skills: Thermogravimetric Analysis, Nuclear Magnetic Resonance in solution and in solid state, Scanning Electron Microscopy and Energy Dispersive X-ray Spectroscopy, Mass Spectrometry.
- Use of scientific software: Material Studio (2D COFs structure refinement related knowledge), OriginPro, TopSpin NMR, Endnote, ChemDraw and Microsoft Office (Word, Powerpoint, Excel).

MSc. in Organic Chemistry

09/2016 – 07/2017

Madrid, Spain

Complutense University of Madrid

Grade: 8.41/10*

- **Master Thesis:** *Synthesis and study of self-assembled supramolecular systems.* Supramolecular Polymers Group (PI: Dr. Luis Sánchez). Supervised by Dr. Rafael Gómez.
- Acquired knowledge in Organic Synthesis and Mechanisms of Reaction, Structural Elucidation, Supra- and Macromolecular Chemistry and Organic Materials.

BSc. in Chemistry

09/2011 – 07/2016

Madrid, Spain

Complutense University of Madrid

Grade: 7.66/10*

- **Bachelor Thesis:** *Synthesis and study of supramolecular polymers based on N-Heterotriangulene self-assembly.* Supramolecular Polymers Group (PI: Dr. Luis Sánchez). Supervised by Dr. Rafael Gómez.
- Specialization in Organic Chemistry.
- Excellent in Organic Chemistry (9/10*), granted the Honours Degree in Organic Chemistry II (9.8/10*) and Organic Synthesis (10/10*).

*Spanish degree classification

Publications and Conferences

PUBLICATIONS LIST

1. Modulation of Crystallinity and Optical Properties in Composite Materials Combining Iron Oxide Nanoparticles and Dye-Containing Covalent Organic Frameworks. Sánchez-Naya, R.; Stepanenko, V.; Mandel, K.; Beuerle, F. *Organic Materials* **2021**, 03, 017.
2. Impact of Molecular Size and Shape on the Supramolecular Co-Assembly of Chiral Tricarboxamides: A Comparative Study. Dorca, Y.; Sánchez-Naya, R.; Cerdá, J.; Calbo, J.; Aragón, J.; Gómez, R.; Ortí, E.; Sánchez, L. *Chem. Eur. J.* **2020**, 26, 14700.
3. Solvent-directed helical stereomutation discloses pathway complexity on N-heterotriangulene based organogelators: Valera, J. S.; Sánchez-Naya, R.; Ramírez, F. J.; Zafra, J. L.; Gómez, R.; Casado, J.; Sánchez, L., *Chem. Eur. J.* **2017**, 23, 11141.

CONFERENCES AND MEETINGS

1. 8th SolTech Conference. Poster presentation. Nuremberg, 2019.
2. 5th SupraChem Conference. Poster presentation. Würzburg, 2019 (International).
3. 7th SolTech Conference. Poster presentation. Würzburg, 2018.
4. ORCHEM 2018. Poster presentation. Berlín, Germany, 2018.
5. 9th Münster Symposium on Cooperative Effects in Chemistry SFB 858. Poster presentation. Münster, Germany, 2018.