

RAFAEL ANDRÉS CAMACHO DEJAY

Date of birth: 31st January 1988 | Venezuelan with residency in Belgium
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SUMMARY OF QUALIFICATIONS

7+ years of research experience focusing on advanced imaging and spectroscopy methods. I have applied these methods to characterize materials with potential use in novel electronics, and to study biological relevant systems.

I have been involved in highly interdisciplinary research teams and projects, working within the fields of chemistry, physics, and biology. I enjoy developing software for data analytics and visualization.

I have built excellent communication skills by presenting complex ideas to broad audiences in international conferences, and group meetings.

PROFESSIONAL EXPERIENCE

POSTDOCTORAL RESEARCHER | KU LEUVEN | *November 2014 - present*

- Design & development of a microscope for 3D super-resolution imaging:
 - + CAD based design of mechanical components.
 - + Software integration for automated hardware control (Micromanager).
- Image analysis software development for shape recognition and classification.
 - + Shape descriptors and machine learning (MATLAB).
- Analysis of single molecule intensity traces for extraction of blinking statistics.
- Characterizations of OMH-perovskites using super-resolution imaging.
- Development of software tools for Next-generation DNA sequencing.
- Live cell imaging of bacteria cells (*E coli*) for the study of antibiotics.
- 3-year postdoctoral fellowship – Research Foundation - Flanders (FWO).
- 1-year grant within the framework of international mobility, Postdoctoral mandate internal funds (PDM), KU Leuven.
- Supervision of master students.

POSTDOCTORAL RESEARCHER | LUND UNIVERSITY | *July 2014 - October 2014*

- Detection of protein aggregation related to Alzheimer's disease by fluorescence resonance energy transfer imaging.
 - + In charge of project management and establishing long lasting collaborations with researches within live sciences.

PHD CANDIDATE & RESEARCHER | LUND UNIVERSITY | *May 2010 - June 2014*

- Single molecule spectroscopy and imaging methods for the study of material with potential use in nano and molecular electronics.
 - + Materials included: conjugated polymers, solar cell materials, J-aggregates and natural light harvesting complexes.
- Construction of a polarization sensitive fluorescence microscope with single molecule precision.
 - + Hardware prototyping and software integration (LabView/MATLAB)
- Design of graphical user interfaces for data acquisition and analysis.
 - + Basic parallel computing for image analysis.
- Training in value creation and patent application for life sciences.
- Nominated to the Fabian Gyllenbergs prize.

EDUCATION

PHD IN THE SUBJECT OF CHEMISTRY | LUND UNIVERSITY, SWEDEN | 2014

- Specialization in Chemical Physics and single molecule spectroscopy.

MASTER OF SCIENCE IN CHEMISTRY <Licenciado en Química> | SIMÓN BOLÍVAR UNIVERSITY, VENEZUELA | 2010

- Graduated with cum laude distinction.
- Honourable mention on Final Project.

SKILLS AND TRAINING

ENGINEERING & DESIGN

- Optical and fluorescence microscopy and super-resolution imaging.
- Hands-on experience with state-of-the-art microscopy equipment from Nikon, Olympus and Zeiss.

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- Construction of home-build microscopy and spectroscopy setups.
 - Characterization of materials at the nano-scale.
 - General chemistry background.
 - Experimental skills with bio-organisms, chemicals and lab equipment.
 - Moderate experience in 3D Computer-Aided Design (CAD) using Autodesk Inventor Professional.

PROGRAMMING

- Automated hardware control using LabVIEW, Micromanager, and Java.
- Data handling and analysis using MATLAB and Python.
- Moderate experience with C++.
- Object-oriented programming and Model-View-Controller architecture.
- GitHub and Bitbucket username: CamachoDeJay.

LANGUAGES

- Spanish: Native
- French: Elementary and improving
- English: Excellent
- Swedish: Elementary

OTHER EXPERIENCE

- Martial arts practitioner (Aikido, Judo), since 2010.
- Rock climbing, hiking, and other outdoor activities.
- Chess player and assistant coach, 1997-2007.
- Cross country running, tennis, football and several other team sports.

PRESENTATIONS AND PUBLICATIONS

PRESENTATIONS

- Oral presentations in 5 international conferences since 2011.
- Poster presentation in 3 international conferences since 2011.
- Constant oral presentations during group meetings.

PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL JOURNALS

- 13 publications in international journals including Nano letters, ACS nano, Journal of the American Chemical Society, Scientific Reports, etc, being cited 206 times since 2012 and having a h-index of 8.
 - Full publication list can be found at:
https://www.researchgate.net/profile/Rafael_Camacho2
<https://scholar.google.be/citations?user=QRcaA74AAAAJ&hl=en>
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