## PERSONAL INFORMATION

# Marinela Gjestila

Rruga "Konferenca e Mukjes", Tirane, Albania

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Sex Female| Date of birth 9/10/1992 | Nationality Albanian

## WORK EXPERIENCE

March 2018 – August 2018

### Postgraduate research scholarship

Photovoltaic laboratory of the Department of Physics

- Optical characterization of solar concentrators for indoor lighting.
- Design and ray-tracing simulation with Zemax Opticstudio of solar concentrators and assessment of the acceptance angle and optical efficiency.
- Field measurements carried out in Ferrara and in the test-site located in Sicily Island (Italy)
- Data analysis in MATLAB environment.
- Communication of results and dissemination of the research activity

This research activity has been funded by Eni SPA, a major Italian oil, and gas company that is investing in mitigation plans for traditional refineries.

November 2018 – January 2022

### Ph.D. Scholarship

Photovoltaic laboratory of the Department of Physics

- Design of the circuit of the floating optical sensor
- Development of a localization algorithm based on the fingerprint-based method
- Development of an inverse kinematic algorithm in MATLAB environment to control an Arduino robotic arm, simulating the movement of the floating sensor within the photobioreactor.
- Development of the firmware of the sensor in MPLAB X with the aim of reducing the power consumption of the sensor
- Characterization of the power consumption of the sensor
- Calibration of the optical sensor and photo microsensor
- Design and ray-tracing simulation with Zemax Opticstudio of light propagation within an algal photobioreactor
- Programming of the control of the light intensity of LEDs using LabVIEW programming language
- Data analysis in MATLAB environment.
- Communication of results and dissemination of the research activity

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## EDUCATION AND TRAINING

2018 – 2022

### University of Ferrara
### Ph.D. in Physics

- Design of a floating optical sensor (FloSen) to monitor online the spectral distribution of light within an algal photobioreactor.
- Development of the firmware of the sensor in MPLAB X with the aim of reducing the power consumption of the sensor
- Characterization of the power consumption of the sensor
- Calibration of the optical sensor and photo microsensor
- Design and ray-tracing simulation with Zemax Opticstudio of light propagation within an algal photobioreactor
- Development of localization method of the position of the sensor using the magnetic field generated by sequential coils.
- Development of different software in LabVIEW to control the light illumination of algal photobioreactors for Biosyntex SRL company
- Optical characterization of algal suspensions used to simulate the light propagation within the algal suspension
- Development in the environment MATLAB of an algorithm of inverse kinematics for an Arduino robotic arm with collision's control.

2014 – 2017

### University of Ferrara/ University of Tirana
### Master's Degree in Physics

The topic of my thesis has been the study and characterization indoor and outdoor of a solar concentrator. During my thesis, I was in charge of the design of the solar concentrator with Zemax Opticstudio software, and of the optical characterization of the prototypes. This work has been funded by Biosyntex Srl and Eni spa.
Final mark: 110/110 cum laude

2011 – 2014

### University of Tirana
### Bachelor Degree in Physics

Study of classical physics and the foundations of modern physics, in addition to mathematical tools necessary for this study.
Acquisition of the ability to analyze a problem with a scientific method.

## PERSONAL SKILLS

Mother tongue(s): Albanian

Other language(s)

| | UNDERSTANDING | | SPEAKING | | WRITING |
|---|---|---|---|---|---|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | C1 | C1 | B2 | B2 | B2 |
| | Replace with name of language certificate. Enter level if known. | | | | |
| Italian | C1 | C1 | B2 | B2 | B2 |

Replace with name of language certificate. Enter level if known.

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Computer skills Windows, Microsoft OFFICE, Zemax OpticStudio, MATLAB, MPLAB X, LabVIEW.

## ADDITIONAL INFORMATION

Publications
Presentations
Projects
Conferences
Seminars
Honors and awards
Memberships
References

M. Gjestila, P. Bernardoni, G. Mangherini, A. Andreoli, M. Boschetti, S. Fugattini, G. Arganaraz, D. Vincenzi. Spectral light distribution in an annular photobioreactor for the cultivation of Nannochloropsis oculate. Algal Biomass, Biofuels & Bioproducts, 2021 (Oral).

M. Gjestila, P. Bernardoni, G. Mangherini, A. Andreoli, M. Boschetti, S. Fugattini, G. Arganaraz, D. Vincenzi. Development of a light sensor to measure real-time spectral irradiance and turbidity within an algal photobioreactor. Algal Biomass, Biofuels & Bioproducts, 2021 (Poster).

P. Bernardoni, G. Mangherini, M. Gjestila, A. Andreoli, D. Vincenzi. Performance Optimization of Luminescent Solar Concentrators under Several Shading Conditions. Energies 2021, 14, 816.

M. Boschetti, D. Vincenzi, G. Mangherini, P. Bernardoni, A. Andreoli, M. Gjestila, R. Camattari, S. Fugattini, S. Caramori, V. Cristino, L. Pasti, T. Chenet, C. A. Bignozzi. Modular sand-alone photoelectrocatalytic reactor for emergent contaminant degradation via solar radiation. Solar Energy, 2021, 228: 120-127.

A. Andreoli, S. Fugattini, P. Bernardoni, M. Boschetti, M. Gjestila, G. Mangherini, D. Vincenzi, U. Gulzar, T. Li, R. P. Zaccaria, D. Giubertoni. Porous Germanium Anode for Li-Ion Batteries. In 235th ECS Meeting (May 26-30, 2019). ECS.

G. Mangherini, M. Boschetti, P. Bernardoni, A. Andreoli, S. Fugattini, M. Gjestila, A. Pancaldi, D. Vincenzi, S. Caramori, V. Cristino, C. A. Bignozzi. International Workshop Material for Today's Energy Challenges, 2019 (Poster)

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Prof. Donato Vincenzi, email: donato.vincenzi@unife.it
Dr. Paolo Bernardoni, email: paolo.bernardoni@unife.it