

# Mattia Lopresti

PH.D. STUDENT · MATERIALS SCIENTIST

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## Summary

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I am a Ph.D. student of chemistry & biology at the University of Eastern Piedmont (Italy). My field of research concerns the integration of multivariate statistical analysis in the crystallographic field, especially for the quantitative analysis of mixture. My Ph.D. topic is the theoretical and experimental development of lightweight X-Ray shielding materials. I also work on coating development for ultralight magnesium alloys for everyday purposes and the analysis of plant polyphenolic extracts as adjuvants for wines and winemaking products. The red thread that connects each of these areas of interest is the passion for both crystallography and chemometric techniques.

On the free time I like to manage and design websites, study the Japanese language and developing BrewBilly: an arduino-based system for homebrewers, which automatically control the brewing process.

## Work Experience

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### University of Eastern Piedmont, ITS of Rivoli

Alessandria - Torino, Italy

TEACHING

Apr. 2019 - Jun. 2020

- Supplementary teaching at UPO for the course in "Chemistry-physics: thermodynamics".
- Teaching at ITS of Rivoli for the course in "Chemistry of building materials".

### Enartis

Trecale - Italy

FORMATIVE TRAINEE

Apr. 2018 - Oct. 2018

- Use of analytical techniques of analysis and characterization of wines and other winemaking products.
- Use of chemometric and experimental design techniques for exploratory analysis and optimization of instruments and analytical techniques.
- Analysis of wines and adjuvants through nose-tasting and mouth-tasting.

### University of Eastern Piedmont

Alessandria, Italy

RESEARCHER WITH SCHOLARSHIP

Sep. 2015 - Sep. 2016

- Expert advice to small-medium industries over chemistry and materials science problems.
- Use of chemometric tools for problem-solving and process optimization.

### Buzzi Unicem

Trino Vercellese, Italy

RESEARCHER WITH SCHOLARSHIP

Sep. 2014 - Sep. 2015

- Research and development on self-healing cementitious materials.
- Use of experimental designs for exploratory analysis and optimization.
- Use of chemometric techniques for multivariate analysis of data sets.

### Consorzio UNIVER

Vercelli, Italy

RESEARCHER WITH SCHOLARSHIP

Apr. 2014, Sep. 2014

- Research and development consultant for DUALCEM regional project: a study on self-healing cementitious materials.

## Education

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### University of Eastern Piedmont

Alessandria - Italy

PH.D. SCHOOL

Sep. 2018 - Oct. 2021

### University of Eastern Piedmont

Alessandria - Italy

MASTER DEGREE IN CHEMISTRY

Sep. 2014 - Oct. 2017

- Thesis title: "Study and development of analysis methods of ternary mixtures through diffraction and spectrophotometric techniques."

### University of Eastern Piedmont

Vercelli - Italy

BACHELOR DEGREE IN MATERIALS SCIENCE

Sep. 2010 - Oct. 2014

- Thesis title: "Development of systems for self-healing cementitious materials."

### ITI G. Omar

Novara - Italy

HIGH SCHOOL DEGREE AS CHEMISTRY EXPERT

Sep. 2004 - Jun. 2010

## Publications

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## **In situ X-ray diffraction study of Xe and CO<sub>2</sub> adsorption in Y zeolite: a comparison between Rietveld and PCA-based analysis**

ELEONORA CONTEROSITO, MATTIA LOPRESTI, LUCA PALIN \*

Four structures were also submitted to the Crystallographic Open Database (COD). IDs: 3000262, 3000263, 3000264, 3000265.

*Crystals special issue: "Multivariate Analysis Applications to Crystallography"*

*Article*

## **Light weight, easy formable and non-toxic polymer-based composites for hard X-ray shielding: a theoretical and experimental study**

MATTIA LOPRESTI, GABRIELE ALBERTO, SIMONE CANTAMESSA, GIORGIO CANTINO, ELEONORA CONTEROSITO, LUCA PALIN, MARCO MILANESIO \*

*International Journal of Molecular Science*

*Article*

## **Honors & Awards**

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### DOMESTIC

2015 **Winner**, Scholarship from CEN - Cassa Edile Novara for proficiency.

*Novara, Italy*

2016 **Winner**, Scholarship from CEN - Cassa Edile Novara for proficiency.

*Novara, Italy*

2017 **Winner**, Scholarship from CEN - Cassa Edile Novara for proficiency.

*Novara, Italy*

2018 **Winner**, Scholarship from CEN - Cassa Edile Novara for proficiency.

*Novara, Italy*

## **Presentation**

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### **Non-destructive tests for materials: an opportunity of meeting between research and industrial world**

*Alessandria, Italy*

WORKSHOP CO-ORGANIZATOR

*Apr. 2019, May 2019*

- Organization of the workshops
- Intervention on Geant4 simulations for the study of X and Gamma Ray screening materials. Theoretical data VS. experimental data.

## **Extracurricular Activity**

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### **BrewBilly - Homebrewing automatic system**

*Galliate, Italy*

CORE MEMBER & CO-FOUNDER

*Dec. 2018 - Today*

- Development of an Arduino-Raspberry Pi hybrid automatic system for homebrewers.

### **Italian Crystallographic Association**

*Italy*

MEMBER

*Nov. 2019 - Today*