

## PERSONAL INFORMATION

## Federica Lodesani



📍 Via Prampolini 8, 41013 Castelfranco Emilia (MO) (Italy)

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💬 Skype fede.lode

Sex Female | Date of birth 04/02/1994 | Nationality Italian

## EDUCATION AND TRAINING

11/2019–Present

**PhD student**

UNIMORE, Modena (Italy)

Models and Methods for Materials and Environmental Sciences PhD Course

Project title: Computer simulation of nucleation and crystallization of silicate glasses

11/2019–02/2020

**Teaching Tutor**

UNIMORE, Modena (Italy)

20 hours of exercises lessons on quantum mechanics and introduction on statistical thermodynamics

**Master Degree in Chemical Sciences**

UNIMORE, Modena (Italy)

Department of Chemical and Geological Sciences

Final grade: 110/110 cum laude, received the 22/02/2019

Thesis title: Computer simulations of soda lime aluminosilicate glasses for nuclear waste confinement.

Thesis supervisors: Prof. Alfonso Pedone, Dr. Thibault Charpentier

**Bachelor Degree in Chemistry**

UNIMORE, Modena (Italy)

Department of Chemical and Geological Sciences

Final grade: 110/110 cum laude degree, received the 21/07/2016

Thesis title: Studio dell'assorbimento di anidride carbonica supercritica in fillosilicati modulari attraverso simulazioni di dinamica molecolare. Thesis supervisor: Prof. Alfonso Pedone

**Technical High School Diploma - Industrial Chemical Expert**

ITIS Enrico Fermi, Modena (Italy)

Diploma received in the 2012/2013 school year

Final grade: 100/100 cum laude

## WORK EXPERIENCE

03/2019–08/2019

**Research Fellow**

UNIMORE, Modena (Italia)

Research activity at computational chemistry laboratory of Prof. Pedone of Università degli studi di Modena e Reggio Emilia granted by AGC (Asahi Glass Co.). Study of aluminosilicate glasses by using molecular dynamics simulations and calculation of ionic conductivity.

02/2018–07/2018 **Erasmus Traineeship at Laboratoire de Structure et Dynamique par Résonance Magnétique (LSDRM)**

CEA/NIMBE/LSDRM-DRF/IRAMIS Université Paris-Saclay, Gif-sur-Yvette (France)

The Traineeship was done at the laboratory of structure and dynamique magnetic resonance with the supervision of Dr. Thibault Charpentier. Aluminosilicate glasses have been studied by combining molecular dynamics simulations with solid state NMR spectroscopy.

04/2016–07/2016 **Internship in Computational Chemistry Laboratory**

UNIMORE, Modena (Italy)

The internship has been carried out at the Prof. Alfonso Pedone computational chemistry lab of UNIMORE. The absorption of carbon dioxide of inorganic materials has been studied using molecular dynamics techniques.

02/2013 **Internship 2**

Gamma Due (S.p.A.) ORNAMENTA, Sassuolo (Italy)

Internship of 2 weeks in production and inspection of ceramic polishes

09/2012 **Internship 1**

FERRO SPAIN SA Italy Branch (Tech Support), Fiorano Modenese (Italy)

Internship of 2 weeks in production and inspection of colorants, ceramic polishes and other ceramic products.

**PERSONAL SKILLS**

Mother tongue(s) Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user  
Common European Framework of Reference for Languages - Self-assessment grid

Communication skills Educator activity for teenagers, at Castelfranco Emilia (MO) church, since 2012

Job-related skills Good knowledge of chem laboratory instrumental techniques: chromatography (HPLC, GC, GC-MS), spectroscopy and spectrophotometry (NMR, FAAS, GFAAS, ICP-OES, FT-IR, colorimeters UV-VIS, XRF, XRPD)

Digital skills

- Good mastery of Microsoft Office, Open Office, Libreoffice
- Knowledge of OS Windows and Linux
- Knowledge of quantum chemical computational software (Gaussian, CP2K, VASP) and classic chemical computational software (Gromacs, DL\_POLY, GULP, LAMMPS)
- Basic notions of programming language Fortran, C, Matlab

Driving licence B

**ADDITIONAL INFORMATION**

Publications Muniz-Miranda, F.; Lodesani, F.; Presti, D.; Tavanti, F.; Malferrari, D.; Pedone, A. Supercritical CO<sub>2</sub> Confined in Palygorskite and Sepiolite Minerals: A Classical Molecular Dynamics Investigation. J. Phys. Chem. C. 2016, 120 (47), pp 26945–26954 DOI: 10.1021/acs.jpcc.6b09983.

Lodesani, F., Menziani, M. C., Hijjiya, H., Takato, Y., Urata, S., & Pedone, A. (2020). Structural origins of the Mixed Alkali Effect in Alkali Aluminosilicate Glasses: Molecular Dynamics Study and its Assessment. *Scientific Reports*, 10(1), 1-18

**Poster** Participation at the XIX Giornata della Chimica dell'Emilia Romagna, 6 December 2019, Modena (MO) with poster presentation with title: Ionic conductivity calculations and rationalization of mixed alkali aluminosilicate glasses through MD simulations, F. Lodesani, M. C. Menziani, H. Hijjiya, Y. Takato, S. Urata, A. Pedone

Participation at the VI National Congress of the Theoretical and Computational Chemistry Division of the Italian Chemical Society, 19-20 September 2019, Arcavacata di Rende (CS) with poster presentation with title: Computer simulations of soda lime aluminosilicate glasses for nuclear waste confinement, F. Lodesani, T. Charpentier, A. Pedone

Poster presentation with title "Palygoskite and Sepiolite as traps and storages for Carbon Dioxide", F. Lodesani, F. M. Muniz, D. Presti, F. Tavanti, D. Malferrari, A. Pedone, IV National Congress of the Theoretical and Computational Chemistry Division of the Italian Chemical Society, 3-5 October 2016, Pisa

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