



Alessio Domenico  
LAVINO  
alessio.lavino@  
polito.it  
(+39) 334-1660444

# Alessio Domenico LAVINO

## Multiscale Modeling and Simulation Engineer

**About Me** Graduated at Politecnico di Torino in 2015 in Chemical and Sustainable Processes Engineering. Currently working as Modeling and Simulation Ph.D. candidate at Politecnico di Torino. Passionate about mathematical models, physics and chemistry, my research field lies on the multiscale modeling of polymer self-assembly, by using all-atom and coarse-grained molecular dynamics, population balance modeling and computational fluid dynamics.

## Current job

### Post-Doctoral Research Assistant at Politecnico di Torino, 2019 - now

Molecular simulations of biological systems and multiscale investigations on nanoparticles formation processes.

## Education

### Ph.D. candidate, 2015 - 2018, Politecnico di Torino, *Department of Applied Science and Technology, Torino, Italy*

Ph.D. in Chemical Engineering. Multiscale modelling and simulation of polymer self-assembly in binary mixtures. From molecular dynamics to computational fluid dynamics investigations, by means of both commercial and open-source simulation packages.

### Visiting Ph.D. Student, Nov 2017 - May 2018, Iowa State University, *Dept of Mechanical Engineering - Ames, IA, USA*

Development of an innovative multivariate population balance model and its implementation in OpenQBMM, an OpenFoam-based code, in collaboration with prof. Rodney Fox and Dr. Alberto Passalacqua.

### Visiting Ph.D. Student, Sept 2016 - Apr 2017, University of Manchester, *School of Chemical Engineering & Analytical Science, Manchester, UK*

Collaboration with the research group of Dr. Paola Carbone, developing a MARTINI Coarse-Grained model for the poly- $\epsilon$ -caprolactone in acetone-water mixture.

### Advanced Summer School, *Multiscale Modeling of Flowing Soft Matter and Polymer Systems, July 2016, International Centre for Mechanical Sciences (CISM), Udine, Italy*

An intensive school on the simulation of complex fluids and polymers using computational fluid dynamics, molecular dynamics and coarse-grained models

### MSc in Chemical and Sustainable Processes Engineering, Apr 2013 - July 2015, Politecnico of Torino

Thesis: "MOLECULE SELF-ASSEMBLY IN MIXTURE: MODELLING ANALYSIS", Grade: 103/110

Academic Supervisor: prof. Daniele Marchisio

### BSc in Chemical Engineering, Sept 2009 - Mar 2013, Politecnico of Torino

Thesis: "CONTROL OF FREON EMISSIONS FOR POLYURETHANE PRODUCTION", Grade: 108/110

Academic Supervisor: prof. Roberto Pisano

## Experience

### May 2012 - July 2012, *Internship, Production Engineer, BASF*

Detailed achievements:

- Addition of blowing agents to polyols
- Programmable Logic Controller (PLC), modeling and design of the control system (PID controller)



Alessio Domenico  
LAVINO  
alessio.lavino@  
polito.it  
(+39) 334-1660444

## Communication Skills

### Conferences

- 2018, *Oral Presentation*, AIChE Annual Meeting, Pittsburgh, PA, USA
- 2018, *Oral Presentation*, 6<sup>th</sup> Population Balance Modelling Conference, Ghent, Belgium
- 2017, *Oral Presentation*, 10<sup>th</sup> World Congress of Chemical Engineering, Barcelona, Spain

### Languages

- Italian: Mother-Tongue
- English: IELTS Certification, PET certification, B2 level (strongly practiced in UK and USA)

## Software Development Skills

### Programming

- C
- C++
- Python
- Matlab
- Fortran
- Shell Scripting

### Engineering Software

- Fluent (UDFs)
- OpenLCA
- Aspen
- Gromacs
- Matlab
- Simulink
- OpenFoam
- LaTeX
- OpenOffice
- OpenQBMM
- SolidWorks
- Microsoft Office

## Soft Skills

- Team-Working
- Calm
- Precise
- Punctual
- Public Speaker
- Open-Minded
- Ambitious
- Logical
- Scientific
- Committed
- Professional
- Motivated
- Strategic Thinking
- Networking
- Open to Feedbacks

## Relevant Publications

- **Lavino, A. D.**, Banetta, L., Carbone, P., Marchisio, D. L., 2018. Extended Charge-on-Particle OPLS Acetone Model: The Case of Acetone-Water Mixtures, *J. Phys. Chem. B*, **120** (20), 5234–5241.
- **Lavino, A. D.**, Di Pasquale, N., Carbone, P., Marchisio, D. L., 2017. A novel multiscale model for the simulation of polymer flash nano-precipitation, *Chemical Engineering Science* **171**, 485-494.

A full publications list is available on request.

## Awards

### Best oral presentation

in AIChE Annual Meeting 2018, in the "Population Balance Modeling for Particle Formation Processes" session, Pittsburgh, PA, USA.

## Interests

### Professional

Research and innovation, multiscale modeling, simulations, molecular dynamics, computational fluid dynamics, scientific knowledge

### Personal

Sport, football, volleyball (player), beachvolley (player), art, cinema, theatre, cooking, playing guitar, science fictions