

# Luca Banetta

✉ luca.banetta@gmail.com    ☎ (+39) 320 2374318

📍 Via Leonardo da Vinci 6/b, 06121, Perugia, Italy

## RESEARCH EXPERIENCE

---

**Ph.D. in Chemical Engineering, University of Cambridge (Queens' College)**

*Apr 2017 - Jan 2021*

Supervisor: *Prof. Alessio Zaccone*.    Industrial funding: *Synthomer Ltd*.

1. Computational modelling of emulsion polymerization systems including studies on the impact of polymerization kinetics and fluid dynamics on reactor fouling during production of acrylic latices;
2. Proposal of a new analytic approach to study the micro-structure of complex interacting Brownian particles under strongly sheared conditions;
3. Design of a first-principles model with the goal of describing the growth kinetics of poly-glutamine clusters in overexpressed mammalian cells.

## ADDITIONAL EDUCATION

---

**Politecnico di Torino**

*Oct 2014 - Oct 2016*

*MSc. in Chemical & Sustainable Processes Engineering*

Overall grade : 110/110 cum laude.

Final research project: Molecular Dynamics simulations of water-acetone mixtures.

**Politecnico di Torino**

*Sept 2011 - Oct 2014*

*BSc. in Chemical & Food Engineering*

Overall grade: 106/110.

## TECHNICAL SKILLS

---

**Programming:**                    *Fortran, C, C++, Python;*

**Software & Tools:**            *Latex, Microsoft Office Excel/Word/PowerPoint, Wolfram Mathematica, Matlab, Hysys Aspen, ANSYS Fluent, OpenFOAM, Gromacs.*

**Experimental techniques:** *Dynamic Light Scattering, Static Light Scattering.*

**Languages:**                    *Italian: Native speaker;*  
*English: Fluent speaker and writer.*

## SOFT SKILLS

---

**Management:**

1. Planned and managed autonomously my research throughout the whole Ph.D. course, which led to three publications as a principal author on international peer-reviewed journals;
2. Advanced problem solving skills (creativity, dependability);
3. Capable of managing people and events thanks to my role in the Queens' college 2018/2019 Public Relations team in charge of organising social activities throughout the entire year.

**Teamwork:**

1. Capable of establishing one internal and one external collaboration which led to a total of two publications on international peer-reviewed journals;

2. Able to co-operate consistently and productively with industrial stakeholders, from R&D and production staff to high level managers.

### **Communication:**

1. Given oral presentations in front of audiences composed of dozens of people, coming from both academic and industrial environments;
2. Alongside my Ph.D. dissertation, I have personally written three scientific papers and periodic industrial reports;
3. As part of the Queens' college Public Relations team I also needed to be capable of interacting consistently and effectively with the entire collegiate population.

### **PUBLICATIONS**

---

L. Banetta, G. Storti, G. Hoggard, G. Simpson, A. Zaccone, *Predictive model of polymer reaction kinetics and coagulation behavior in seeded emulsion co- and ter-polymerizations*. *Polymer Chemistry* **11**, 6599-6615 (2020).

L. Banetta, A. Zaccone, *Pair correlation function of charge-stabilized colloidal systems under strongly sheared conditions*. *Colloid and Polymer Science* **298**, 761-771 (2020).

L. Banetta, A. Zaccone, *Radial distribution function of Lennard-Jones fluids under shear flows from intermediate asymptotics*, *Physical Review E* **99**, 052606 (2019)

M. Lu, L. Banetta, L.J. Young, E.J. Smith, G.P. Bates, A. Zaccone, G.S. Kaminski-Schierle, A. Tunnacliffe, C.F. Kaminski, *Live-cell super-resolution microscopy reveals a primary role for diffusion in polyglutamine-driven aggregate assembly*, *Journal of Biological Chemistry* **294** (1), 257-268 (2019).

A.D. Lavino, L. Banetta, P. Carbone, D.L. Marchisio, *Extended Charge-on-Particle OPLS Acetone Model: The Case of Acetone-Water Mixtures*, *The Journal of Physical Chemistry B* **122** (20), 5234-5241 (2018).

### **REFEREES**

---

*Prof. Alessio Zaccone*, Ph.D. Supervisor, Dipartimento di Fisica "A. Pontremoli", Università degli Studi di Milano & Department of Chemical Engineering and Biotechnology, University of Cambridge. Tel: +39 02 50317231  
Email: Alessio.Zaccone@unimi.it

*Prof. Daniele Luca Marchisio*, MSc. Supervisor, Dipartimento di Scienza Applicata e Tecnologia, Politecnico di Torino. Tel: +39 011 0904622 Email: daniele.marchisio@polito.it

*Prof. Giuseppe Storti*, Dipartimento di Chimica, Materiali ed Ingegneria Chimica "Giulio Natta", Politecnico di Milano, Italy. Tel: +39 02 23993163 Email: giuseppe.storti@polimi.it

### **FURTHER ACTIVITIES**

---

**Personal interests:** Open air activities (running, cycling, playing football and basketball); Reading; Card magic.

I hereby authorize the use of my personal data in accordance to the GDPR 679/16 - "European regulation on the protection of personal data".