



I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at Dipartimento di \_\_\_\_\_scienze chimiche\_\_\_\_\_

Scientist- in - charge: \_\_\_\_\_Prof. Regazzoni\_\_\_\_\_

**Alessio Massironi**

## CURRICULUM VITAE

### PERSONAL INFORMATION

Surname	Massironi
Name	Alessio
Date of birth	16 May 1991

### PRESENT OCCUPATION

Appointment	Structure
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### EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	Molecular Biotechnology and Bioinformatic	Università degli studi Milano Statale	2016
Specialization			
PhD	Chemistry and Material Science	Università di Pisa	2020
Master			
Degree of medical specialization			
Degree of European specialization			
Other	Percorso Formativo Propedeutico al Tirocinio per l'Insegnamento (PF24)	Università di Pisa	2020-2021



## REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City

## FOREIGN LANGUAGES

Languages	level of knowledge
Italian	Mother tongue
English	B2
Spanish	B1
Portoguese	A2

## AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2014	Erasmus Scholarship (Università studi di Milano Statale)
2016-2019	Scholarship (Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali) within the Ph.D. program
2019-2020	Scholarship (Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali) Contract researcher (Università di Pisa, Department of chemistry and industrial chemistry)

## TRAINING OR RESEARCH ACTIVITY

During the bachelor's degree at Università degli studi di Milano Statale, I acquired my preliminary knowledge and skills on biochemistry, microbiology, material sciences, biotechnology techniques and bioinformatics.

Bachelor internship (within the ERASMUS program): 6 months at Universidad Complutense de Madrid (Spain) under the supervision of Prof. Francisco Monteiro (Facultad de Ciencias Químicas, Laboratorio de biofisica). I performed the computational reconstruction of the metabolic pathway of *Pelagibacter ubique*, the smallest but most diffuse bacteria in the world, combining a computational and mathematical studies with a deep investigation over the complex biochemistry of the bacteria.

Thesis title: Ricostruzione e analisi della rete metabolica di *Pelagibacter ubique*.

(Reconstruction and analysis of the metabolic pathway of *Pelagibacter ubique*).

Achievements: The developed constraint based model is now available on different databases.

Master degree in Molecular Biotechnology and bioinformatics with bioinformatics specialization at Università degli studi di Milano Statale.

Master Internship: 12 months internship under the supervision of prof. Elisabetta Ranucci (Macromolecular laboratory, Dipartimento di Chimica industriale, Università degli studi di Milano Statale) within the research project of: synthesis of polyamidoamine for the stabilization of gold nanostructures as novel anticancer agents. During the master internship, I had the opportunity to collaborate with the laboratory of metalorganic directed by prof. Cristina Della Pina and I had the pleasure to collaborate with prof.



Michele Rossi. Such experience allowed me acquiring novel knowledge over inorganic chemistry in particular on the synthesis and characterization of noble-metal nanostructures. Finally, in the last part of my internship I collaborate with Prof. Livia Visai research group at Università degli Studi di Pavia, where I performed the initial *in vitro* biological characterization of synthesized nanosystem evaluating the anticancer activity and cytotoxicity against model breast cancer cells.

Thesis title: Sintesi di nanoparticelle d'oro con poliamidoammine per la cura del tumore al seno. (Synthesis of gold nanoparticles with polyamidoammine for breast cancer treatments).

Achievements: The present research was published on *Frontiers in Bioengineering and Biotechnology*.

Post-graduated researcher at *Laboratorio di interazione cellule-biomateriali* at Università degli Studi di Pavia (Italy) under the supervision of prof. Livia Visai. Research activity on the biological investigation of novel anticancer agents.

Ph.D. in chemistry and material science at Università di Pisa under the supervision of prof. Federica Chiellini. During the three years of research, I performed a deep investigation over the synthesis of hybrid inorganic/organic nanostructures with potential applications in biomedical, cosmetic and food area. Exploiting polymers from natural and synthetic origins and semi-natural polymers chemically modified. Moreover, within the Ph.D. program, I performed some studies over the encapsulation of anticancer drug into polymeric nanostructures that allowed me gaining deeper knowledge over the encapsulation and nanoparticles formation techniques.

Thesis title: Design, preparation and characterization of hybrid organic/inorganic nanostructures for biomedical, food and cosmetic applications.

Achievements: 2 paper published on *Carbohydrate polymers* and *Flavours and Fragrances journal* and 1 paper and 1 review on writing. The industrial investigation of the possible exploitation of two developed systems as novel soft drink formulation is currently ongoing by McCormick & Company, Enrico Giotti S.P.A.

Visiting Ph.D. student at 3B's research group (Braga, Portugal) under the supervision of prof. Manuela Gomes. During the 5 months as visiting Ph.D. student novel hybrid hyaluronic acid hydrogels reinforced with metal nanostructures were unprecedentedly synthesized as scaffold base for possible biomedical applications.

Achievements: The developed systems demonstrated a potential application as novel scaffold for pulp dental cells allowing cells grow and avoid bacteria invasion. The present research is currently on writing.

Contract researcher at Università di Pisa at *BioLab* research group under the supervision of prof. Federica Chiellini. Laboratory supervisor of 2 master students. Research activity in collaboration with prof. Zuliang Chen (University of Fuzhou, China) on the exploitation of food industries wastes as novel reducing and stabilizing agent for the synthesis of silver nanoparticles.

Achievements: 1 paper on writing

## PROJECT ACTIVITY

Year	Project
2016-2018	NanoBioAlgae (Regione Toscana, POR FESR) (Contract researcher)
2016	Tumore al seno: sconfiggerlo con nanosfere d'oro intelligenti (Contract researcher)

## PATENTS

Patent
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## CONGRESSES AND SEMINARS

Date	Title	Place
12-15 Nov 2019	15th International Conference on Polysaccharides-Glycoscience (15th ICPG). (Oral Contribution)	Prague, Italy
3-5 Jul 2019	Chemistry for the future CFF2019 (Oral Contribution)	Pisa, Italy
26-29 Sept 2018	SIM2018 (Poster Contribution)	Palermo, Italy
4-6 Jul 2018	Chemistry for the future CFF2018 (Organizing committee)	Pisa, Italy
14-15 Sept 2017	Italian-Nordic Polymer Future Pisa, Italy (Poster Contribution)	Pisa, Italy
26-30 June 2017	TERMIS, 2017 (Poster Contribution)	Davos, Switzerland
18 Oct 2016	CEN symposium	Milan, Italy

## PUBLICATIONS

Books
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Articles in reviews
Bloise N., Massironi A., Della Pina C., Alongi J., Siciliani S., Manfredi A., Biggiogera M., Rossi M., Ferruti P., Ranucci E. & Visai L. (2020) Extra-small gold nanospheres decorated with a thiol functionalized biodegradable and biocompatible linear polyamidoamine as nanovectors of anticancer molecules. <i>Frontiers in Bioengineering and Biotechnology</i> , 8, 132.
Massironi A., Morelli, A., Puppi, D., Creti, D., Domingo Martinez, E., Bonistalli, C. & Chiellini, F. (2019). Development of ulvan-based emulsions containing flavour and fragrances for food and cosmetic applications. <i>Flavour and Fragrance Journal</i> , 34(6), 411-425.
Massironi, A., Morelli, A., Grassi, L., Puppi, D., Braccini, S., Maisetta, G. & Chiellini, F. (2019). Ulvan as novel reducing and stabilizing agent from renewable algal biomass: Application to green synthesis of silver nanoparticles. <i>Carbohydrate polymers</i> , 203, 310-321.

Congress proceedings
Mastalygina, E., Pantyukhov, P., Massironi, A., Morelli, A., Puppi, D., & Chiellini, F. (2020, January). Development of eco-friendly composites based on polypropylene and cellulose for additive manufacturing (fused deposition modeling). In <i>AIP Conference Proceedings</i> (Vol. 2205, No. 1, p. 020066). AIP Publishing LLC.
Nora, B., Della Pina, C., Massironi, A., Federico, B., Michele, R., Manfredi, A. G. & Livia, V. (2018, February). Gold nanoparticles decorated with polyamidoamines for the delivery of anticancer drugs:



synthesis and biological characterization. In Milan Polymer Days (pp. 85-85). Edises.

OTHER INFORMATION

Teaching Assistant:

Course: Polimeri per la bioindustria, (Polymers for the bioindustry). Università di Pisa, Department of Chemistry

Course: Laboratori didattici di chimica-fisica, (didactic laboratory physical-chemistry). Univeristà di Pisa, Department of Chemistry

Freelance journalist (Music)

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: \_\_\_\_\_Milan\_\_\_\_\_, \_\_\_9/06/2020\_\_\_

SIGNATURE