



Caterina Dallari

Date of birth: 16/02/1994

Nationality: Italian

CONTACT

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WORK EXPERIENCE

01/2015 – 12/2015 – Florence, Italy

Granted Scholarship at the Faculty Library

University of Florence

150 hours' work at the Chemistry department library at University of Florence

03/2016 – 09/2016 – Florence, Italy

Bachelor Thesis Internship

University of Florence, Department of Chemistry, CSGI

Chemistry department "Ugo Schiff", CSGI, University of Florence

Title of the thesis: "Preparation and characterization of natural and synthetic vesicles containing magnetic nanoparticles"

Handle the preparation and characterization of natural and synthetic vesicles containing magnetic nanoparticles using as techniques DLS, FCS, AFM, QCM

Supervisors:

Prof. Debora Berti, Dr. Costanza Montis

2017 – 2018 – Florence

Educational Tutor

University of Florence

Chemistry tutor for undergraduate and graduate students of Physics Course, giving lectures at the University of Florence's Department of Chemistry with the goal of advancing concepts and assisting with the organization of study time for examination preparation.

02/2018 – 12/2018 – Florence, Italy

Master Thesis Internship

University of Florence, European Laboratory for Non-Linear Spectroscopy (LENS)

Development and optimization of new substrates as SERS based sensors, using as techniques DLS, Z Potential, SEM, TEM, Epifluorescence Microscope, Confocal Microscope, AFM, UV-Visible Absorption, EDS, SERS.

Supervisors:

Prof. Francesco Saverio Pavone, Prof. Debora Berti,

Dr. Caterina Credi

02/2019 – 10/2019 – Florence, Italy

Research Scholar

University of Florence, European Laboratory for Non-Linear Spectroscopy (LENS)

BANDO con Decreto n. 1 PROT. 11 Anno 2019 European Laboratory for Non-Linear Spectroscopy (LENS), University of Florence

Development and characterization of SERS-active surfaces for targeting sepsis biomarkers

09/2021 – 12/2021 – Jena, Germany

PhD Visiting Student

Leibniz institute of photonic technology (IPHT), Jena, Germany

The trainee was enrolled in the three-year PhD program in Atomic and Molecular Photonics Doctorate. The aim of the research work was the development of novel plasmonic based optical devices, characterized by functional and design versatility to be potentially coupled with fiber-based spectroscopic set-up as well as to be integrated in smart optofluidic systems. The chemical and biochemical sensing of liquid biofluids by probing their molecular content was the main field of application.

Supervisors: Prof. Juergen Popp and Dr. Dana Cialla-May.

01/11/2019 – CURRENT – Florence, Italy

PhD Student

University of Florence, European Laboratory for Non-Linear Spectroscopy (LENS)

PhD project: " Plasmonic-based sensors for chemical and biochemical sensing applications " on the development of novel plasmonic based optical devices, characterized by functional and design versatility to be coupled with fiber based spectroscopic set-up as well as to be integrated in smart optofluidic systems. The chemical and biochemical sensing of liquid samples by probing their molecular content is the main field of applications of such high sensitive devices.

Development and characterization of novel SERS-active substrates with improved performances to analyse liquid solution and biological fluids, in particular:

- synthesis and modification of colloidal solution with different size, shape, composition and surface properties and its characterization (through DLS, Zeta-potential, SEM, TEM, epifluorescence microscope, Confocal Microscope, UV-Visible absorption, EDS, fluorescence spectroscopy),
- engineering and fabrication of polymeric substrates exploiting different materials (PDMS, PFPE) and different realization processes (thermocuring, photocuring), with varied geometries and features and its characterization (through SEM, DSC, UV-Visible Absorption, Optical Microscope)
- pre-treatment and optical analysis of liquid samples, (synthetic fluids, as well as saliva, cerebrospinal fluid, urine) through Raman/SERS spectroscopy (fiber-based Raman set-up, confocal Raman microscope)
- maintaining and treatment of different types of cell cultures
- development of optical set-up to be properly interfaced with polymeric substrates (fiber-guided Raman set-up, evanescent wave as excitation source)

Tutor: Prof. Francesco Saverio Pavone

Co-tutor: Dr. Caterina Credi

EDUCATION AND TRAINING

2008 – 2013 – Poppi (AR), Italy

High School Diploma

Liceo Scientifico "Galileo Galilei"

2013 – 2016

Bachelor Degree in Chemistry L-27

University of Florence

110/110

2016 – 2018

Master Degree in Physical Chemistry LM-54

University of Florence

110/110 cum laude

LANGUAGE SKILLS

MOTHER TONGUE(S): Italian

OTHER LANGUAGE(S):

English

Listening
B2

Reading
B2

**Spoken
production**
B2

**Spoken
interaction**
B2

Writing
C1

DIGITAL SKILLS

My Digital Skills

PROFESSIONAL SKILLS: Computer skills

Microsoft Office / Microsoft Word / Origin Pro: proficient at scientific data processing / vancouver subtraction algorithm / Microsoft Powerpoint / SpectraGryph / Igor / Microsoft Excel / Skype

PROFESSIONAL SKILLS: Instrumental skills

microRaman (Horiba) / DSC (Brookhaven Instrument) / FCS (multiphoton Leica Microsystems CMS GmbH) / DLS (Malvern Panalytical) / UV-VIS (Perkin Elmer) / AFM (Park NX10)

PROFESSIONAL SKILLS: Chemical synthesis skills

Synthesis (organic and inorganic chemistry) / Advanced knowledge about metallic and magnetic nanoparticles synthesis

COMMUNICATION SKILLS

Experiences as promoter, as tutor and private lessons

ORGANISATIONAL/MANAGERIAL SKILLS

Children's education / Playing volleyball / Captain in a volleyball team for 2 years in "Serie D" league