europass Curriculum vitae

PERSONAL INFORMATION Silvia Sfameni

WORK EXPERIENCE

20/07/2020–30/09/2022

Assignment of collaboration

Prof. Maria Rosaria Plutino

Institute for the Study of Materials Nanosructured (ISMN-CNR); Palermo, Sicily. (France)

Experimental activity:

Within the project "DCM.AD006.23I .002 :Thalassa", the activity will be aimed at the design, synthesis and characterization of hybrid, advanced and innovative multifunctional materials, based on nanocomposites or nanohybrids that have chemical-physical properties and implemented and modified surfaces antifouling or hydrophobic properties), thanks to the use of sol-gel and polymerization techniques carried out in the presence of hybrid functional silane hybrid precursors and organic / inorganic nanofillers.

01/03/2018–31/07/2018

Traineeship (Erasmus Master Student)

Prof. Luisa De Cola
Institut de Science et d'Ingenierie Supramoleculaires (I.S.I.S.); 8 Allee Gaspard Monge, 67000 Strasbourg (France)

Experimental activity

I have been educated in the preparation of hydrogels, containing Ruthenium complexes that can act as visible light absorber and Iridium-oxide nanoparticles as catalyst for water-splitting. All the materials have been characterized by a variety of techniques which includes confocal microscopy, scanning electron microscopy, dynamic light scattering and rheology. The photophysical properties of the hydrogels have been spectroscopically investigated. I learnt how to prepare microbeads by imprinting process and how to determine the rheological properties of the materials using a rheometer. Finally, through the participation of the weekly group meetings I have been trained in presentation skills and in critical reading of papers.

Business or sector Scientific Research

04/09/2017–03/11/2017

Traineeship

Consiglio Nazionale delle Ricerche – Istituto per i Processi Chimico-Fisici (CNR- IPCF);
References: Dr. Giuseppe Calogero (calogero@me.cnr.it)
Viale F. Stagno D'Alcontres 37, Messina, Italy, 98158 Messina (Italia)

Experimental activity

I currently use the following equipment for myTraineeship:

-UV/Vis Spectrometer Lambda 20: to characterize the absorption spectra of dyes.

-IV station &LS0100-1000 Solar simulator: to test solar cells under solar simulator conditions.

-Pyranometer: to measure the exact irradiance.

During this period, I optimized sintering process and depositing the film with doctor blade and screen printing methods; I characterized the photoelectrochemical parameters for a wide range of dyes, with UV/Vis spectrophotometer; I prepared platinum-based counter electrodes; I made and characterized several iodide-based electrolytes varying the solvents, the cations and the iodide/iodine

concentrations; I assembled and sealed several DSSC devices, testing them in outdoor conditions and under solar simulator conditions. Besides the equipment cited before, I also used Gaussian 09 Software to make DFT calculation.

Business or sector Scientific Research

EDUCATION AND TRAINING

01/10/2019–Present

Industrial PhD in Engineering and Material Chemistry

University of Messina, Department of Engineering
Contrada Di Dio, Vill. S. Agata,Messina, Italy, 98166 Messina (Italia)

Industrial PhD granted by CNR and Confindustria (under the supervision of Prof. A.Visco (UniME), Dr. M.R.Plutino (ISMN-CNR), Dr. F. Truant (NoxorSokem Group Srl).

PhD research title:

"Study of chromium-free anticorrosive nanotechnological systems in the pretreatment of surfaces in aqueous phase".

References:

Professor Annamaria Visco (avisco@unime.it)

Professor Maria Rosaria Plutino (mariarosaria.plutino@cnr.it)

Doctor Fulvio Truant (truant.fulvio@noxorsokem.it)

12/2016–17/07/2019

Master's Degree in Chemistry

University of Messina (Department ChiBioFarAm)
Viale F.D'Alcontres n.31, Vill.S. Agata (Messina), 98166 Messina (Italia)

My thesis's referent is Prof. Sebastiano Campagna, but I developed my work during my traineeship under the supervision of Prof. Luisa De Cola.

Thesis title:

"Photoinduced water oxidation using hydrogel systems as matrix."

The aim of my thesis was trying to prepare a photo-induced water oxidation system by using polymer hydrogels as a medium where all the molecular components are closely arranged in the three-dimensional network, with the final aim to produce molecular oxygen from water, when visible light is supplied. The working asset was based on the combined use of the classical Ru(II) polypyridine complex as sensitizer for light-activation and IrOx nanoparticles as multi-electron catalyst.

References:

Professor Sebastiano Campagna (campagna@chem.unime.it)

Professor Luisa De Cola (decola@unistra.fr)

09/2013–20/12/2016

Bachelor's Degree in Chemistry

University of Messina (Messina, Italy)
Viale F. D'Alcontres n.31, Vill.S. Agata (Messina), 98166 Messina (Italia)

Thesis title:

"Design and preparation of hybrid systems based on Ruthenium(II) complexes immobilized on chitosan matrices."

The target of my work was to prepare an hydrogel based on chitosan, containing a

Ruthenium(II)polypyridine compound, covalently linked to the chitosan frameworkthanks to a specific synthetic procedure. The synthesis of this hydrogel was part of a larger project that had,as a final purpose,to synthesize a complex systemfor the photocatalyzed water oxidation. For my thesis I currently used UV-Vis Spetrophotometers and spectrofluorimeters.

References:

Professor Sebastiano Campagna (campagna@chem.unime.it)

PERSONAL SKILLS

Mother tongue(s) Italian

Foreign language(s)

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

Cambridge Exam Preparation Course 60Hours- Upper Intermediate B2 (LAL Torbay)
Level B1- Preliminary English Test (University of Cambridge ESOL Examination)
One week work experience as waitress in Paignton Library Café – Torquay (UK)

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

Communication skills

-Skill of establishing good relationships with my work and fellow colleagues; excellent attitude to develop communication techniques in interpersonal relationships.

- Mediating skills: I have worked on the borders between young students and researchers, for example:

18th of September 2017 – 25th of October 2017Messina (Italy), "*AlternanzaScuola_Lavoro*"– CNR-IPCF, Messina; function: scientific popularize and laboratory tutorship for 25 students (High School).

Organisational / managerial skills

I have good abilities in the organisation of the laboratory activities.

I also take part to a Summer Grest where I handle a group of kids and teenagers; I often organize parties and many activities for them.

Job-related skills

Good knowledge of the Microsoft Office applications.

Good knowledge of photo-physical characterizations (Electroluminescence, UV-Vis Spetrophotometry, Current-Voltage measurement)

Good ability to realize solar cells devices (anodes, cathodes, dyes, electrolytes and assembling) and hydrogel systems.

Good ability in executing characterization analysis such as NMR, UV-vis, DSC, TGA, PL, Zeta Sizer, XRD, SEM and in using the main software such as ChemOffice, ACD/lab, IsisDraw, SciFinder, Microsoft Office, PubMed, Origin, Gaussian.

Digital skills

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving

Independent user	Basic user	Independent user	Independent user	Independent user

Digital skills - Self-assessment grid

Good knowledge of:

- Microsoft Word; Excel; Powerpoint;

-Gaussian;

-ChemOffice

-Labview

-OriginLab.

-SciFinder

-PubMed

Driving licence B

ADDITIONAL INFORMATION

CONFERENCE PAPERS, SEMINARS and COMMUNICATIONS

9th-10th of February 2017 – Messina (Italy), Royal Palace Hotel - Messina,

Workshop delle Sezioni Sicilia e Calabria 2016-2017- Italian Chemical Society.

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10th-11th-12th-13th-17th-18th-19th of June 2019 – Messina (Italy),University of Messina.

Course on **"Molecular Materials and their Applications".**

Luisa De Cola, Invited Professor.

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3rd of December 2020 – Messina (Italy), University of Messina .

WorkShop of the Sicily Section 2020- Italian Chemical Society.: Communication poster .

Abstract: **"Development of eco-compatible hydrophobic coatings for antifouling applications in the marine environment: synthesis and physical-mechanical characterization. "**

Silvia Sfameni, Cristina Scolaro, Maria Rosaria Plutino, Annamaria Visco

Publications and referees

1. I. Ielo, M. Galletta, G. Rando, S. Sfameni, P. Cardiano, G. Sabatino, D. Drommi, G. Rosace and M.R. Plutino.

"Design, synthesis and characterization of hybrid coatings suitable for geopolymeric-based supports for the restoration of cultural heritage."

IOP Conference Series: Materials Science and Engineering, **2020**, *in press*.

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2. F. Parisi, G. Sabatino, G. Marcianò, A. Mottese, G. Nania, F. Leonetti, S. Sfameni, M. Di Bella, P. Mazzoleni, G. Barone, A. Tripodo, D. Drommi and S. Magazù.

" New perspectives for the green economy in Sicily"

IOP Conference Series: Materials Science and Engineering, ***2020****, in press.*

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3. V. Trovato, G. Rosace, C. Colleoni, S. Sfameni, V. MIgnani and M.R. Plutino.
" Sol-gel based coating for the protection of cultural heritage textiles."
IOP Conference Series: Materials Science and Engineering, ***2020****, in press.*

Aware of the criminal liability provided for by art. 76 of the Presidential Decree 445/2000, for the hypothesis of falsification of documents and false declarations indicated therein, it is hereby declared that, pursuant to art. 46 and 47 of Presidential Decree 445/2000, what is reported corresponds to the truth.

I authorize the processing of data pursuant to Legislative Decree 196/03.

Messina, 12/03/2021

Firma

Silvia Sfameni