PERSONAL INFORMATION

Simona Filice

[redacted]

Sex Female | Date of birth 28/09/1986 | Nationality Italy

https://www.researchgate.net/profile/Simona_Filice
https://it.linkedin.com/in/simona-filice -37bb7051

WORK EXPERIENCE

02/11/2022 – until now

Researcher level III at National Research Council of Italy – Institute for Microelectronics and microsystems (Catania)

My research activity is focused on technological processes (photocatalysis, filtration, adsorption, sensors), on synthesis and characterizations of nanomaterials and polymeric nanocomposite for environment, energy and medical issues.

14/02/2022 - 30/10/2022

Quality Engineer

ST Microelectronics (Catania)

During this period, I acquired experience on

- EXTERNAL AND INTERNAL CUSTOMER COMPLAINT MANAGEMENT
- VISUAL INSPECTION ACCEPTANCE CRITERIA (FRONT END)
- Non-Conforming Lot Management
- Quality Alert Mot & release of Products waived bv customer
- Problem Solving: methodology and tool
- QIP, FMES, Lean Manufacturing methods
- Failure analysis, defects images, process data

27/09/2021 - 11/02/2022

Post Doc Researcher at National Research Council of Italy – Institute for Microelectronics and microsystems (Catania)

Winner of the call N AR IMM032/2021/CT for a Post Doc Researcher position within the project "**FISR2019_04480 GRATA**" *Uso di Graphene Quantum Dots come carrier di agenti teranostici per tumori solidi"* cod. Progetto: FISR2019_04480

The topic of the research activity is "*Synthesis, functionalization and chemical, physical and morphological characterization of C nanostructured materials based on graphene and/or metal oxides*".

My research activity as Post Doc Researcher is mainly focused on the Synthesis, functionalization and chemical, physical and morphological characterization of C quantum dots starting from graphene oxide or natural source.

12/02/2020 – 11/08/2021

Post Doc Researcher at National Research Council of Italy – Institute for Microelectronics and microsystems (Catania)

Winner of the call n° AR IMM033/2019/CT for a Post Doc Researcher position within the project PON EleGaNTe - Electronics on GaN-based Technologies CUP: B91G18000200005.
The topic of the research activity is "*Chemical physical study of surfaces and interfaces of innovative semiconductors and oxide for application in RF devices*".

My research activity as Post Doc Researcher is mainly focused on the morphological and structural characterization of naturally present metal oxide semicnductors and on the study of the chemical physical properties of titanium dioxide interface within water and ethanol.

12/02/2018 – 11/02/2020

Post Doc Researcher at National Research Council of Italy – Institute for Microelectronics and microsystems (Catania)

National Research Council of Italy – Institute for Microelectronics and microsystems (Catania)

Winner of the call N AR IMM017/2017/CT for a Post Doc Researcher position within the project HORIZON 2020-JTI-FCH-2016-1 "Technology demonstration of large-scale photo-electrochemical system for solar hydrogen production" denominato "PECSYS" n. 735218, CUP B66J16001510006.
The topic of the research activity is "*Preparation and structural, chemical, optical and electrical characterization of polymeric and/or nanocomposite membranes for water splitting application*"

My research activity as Post Doc Researcher is mainly focused on the fabrication of a PEM electrolyzer for hydrogen production by water splitting and on the synthesis, modification and chemical, structural and electrical characterization of (1) proton exchange membranes (i.e. Nafion, sulfonated polymer and their nanocomposites with carbon nanomaterials and inorganic metal oxides) and of (2) carbon based gas diffusion layers modified by electrophoretic deposition of catalysts and polymeric layers. The as prepared materials are tested in the fabricated electrolyzer.

February 2013 – April 2013

intern

Chemical and microbiological laboratory Geolab srl

During this period, I acquired experience on the use of analytical technique and instrumentations (i.e.

Uv-Vis spectroscopy, ICP, HPLC, ionic chromatography, microwave digester) for chemical and microbiological analysis on environmental matrixes (i.e. water, waste, soils) and agro-food matrixes. I learned the procedures for chemical and microbiological analysis on environmental and agro-food matrixes, the classification of waste according to laws and standard analytical procedures.

December 2012 - February 2013 **intern**

Chemical and microbiological laboratory Delvit srl

During this period, I acquired experience on the use of analytical technique and instrumentations (i.e. Uv-Vis spectroscopy, ICP, HPLC, ionic chromatography, microwave digester) for chemical and microbiological analysis on environmental matrixes (i.e. water, waste, soils) and agro-food matrixes. I learned the procedures for chemical and microbiological analysis on environmental and agro-food matrixes, the classification of waste according to laws and standard analytical procedures.

EDUCATION AND TRAINING

November 2014 – October 2017 (title attainment date 16 Marzo 2018)	**PhD Material Sciences and Nanotechnology XXX cycle** **University of Catania and Institute for Microelectronics and Microsystems (IMM)**
	The School aims at preparing young researchers to successfully develop their expertise in the field of the most advanced topics related to synthesis and characterization of nanomaterials and their application in many areas as energy and environmental. In particular, my PhD project is focused on the synthesis and/or modification of nanoparticles (i.e. carbon materials as graphene oxide and/or inorganic semiconductors as titanium dioxide and bismuth oxide) by pulsed laser ablation or chemical processes and the synthesis of polymeric nanocomposites by solvent casting method. The materials are chemically, morphologically and structurally characterized. The electrical properties of these materials have been investigated for sensors. The same materials have been tested in environmental application as adsorbents for the removal of water contaminants. In addition, the photocatalytic activity of the prepared nanomaterials and poliymeric nanocomposites has been investigated in water purification and water splitting applications. During the PhD, I visited the Department of Process and Chemical Engineering – Warsaw University of Technology from January to April 2017 as visiting researcher within the Erasmus project.
May 2017	**8th EPF Summer School on Transport Phenomena in Polymers and Hybrid Materials** **14-19 May 2017 Gargnano, Italy**
	The School addresses basic aspects and recent advances the different aspects of energy and mass transport in polymers.

January 2017 – April 2017	**PhD Erasmus visiting researcher** Department of Process and Chemical Engineering – Warsaw University of Technology
	I work on the preparation of polymeric filters and their application in separation technique for environmental applications. I prepare fibrous filters by melt-blown technique for filtration of solid particles and droplets from liquid or air, for gas separation, for depth water filtration and separation of water/oil emulsions. The filters are modified by plasma treatment or introduction of nanoparticles to reduce biofouling and conferring them antibacterial properties. I also study coalescence filters for diesel fuel cleaning.
January 2016 – November 2016	**Assistant Supervisor** **Master thesis** Laser irradiation process on TiO_2 colloids for photocatalytic water splitting
May 2016 – November 2016	**Assistant Supervisor** **Bachelor thesis** Laser irradiation process on TiO_2 colloids for enhanced photocatalytic activity
November 2016	**Course on Radiation Protection** By International Radiation Protection Association (IRPA)
June 2016	**Scientific Writing Course** By Doctor Maria Bellantone – Senior Publishing Editor Springer, Dordrecht, The Netherlands University of Catania
June 2016	**Workshop and training course on "High-performance Confocal Raman Imaging and Correlative Microscopy"** BRIT Bio-nanotech Research and Innovation Tower , University of Catania
May 2016	**PhD School on Nanoparticle Generation and Excitation by Lasers in Liquids** May 9-13 Essen, Germany
	The School addresses basic aspects and recent advances on laser irradiation and laser ablation process for the modification and generation of nanoparticles in liquid.
December 2015	**Work Health and Sanity Course** CNR IMM Catania
23-25 March 2015	**Work Health and Sanity Course**

	University of Catania
April 2013 – December 2014	**Second Level Professional Master Course in Prototyping services and Research for new technologies and new materials (SPRINT) 17/11/2014**
	University of Calabria, Arcavacata di Rende (Italy)
Level in national or international classification	Qualification of technical expert in the use of complex instrumentation for the study and analysis of new technology and new materials Final grade: 110/110 with honour
Principal subjects/occupational skills covered	Physic, Chemistry, Mechanical Engineering, Economy, English • synthesis and characterization techniques of nanomaterials and films; • the use and management of equipment operating in vacuum, in an inert or controlled atmosphere; • the use of morphology mapping techniques as SEM microscopy, atomic force microscopy AFM for the characterization of materials on micro- and nano-scale; • high frequency fatigue test, use of universal testing machine to perform tensile, compression, bending and torsion, the pendulum impact tester and drop tests, correlation of digital imaging techniques, nano and micro indentation.
Additional Information	Thesis: *Graphene-based polymeric membranes for efficient removal of dyes from water* developed in collaboration with the Institute of Institute for Microelectronics and Microsystems (Catania) and PC-SM Mario Terenzi Laboratory, Department of Chemical and Chemical Technologies, University of Calabria, Arcavacata di Rende (Italy). The thesis focuses on the preparation and characterization of carbon nanomaterials, inorganic semiconductor and polymeric nanocomposite membranes (prepared by dispersion of nanomaterials into a polymeric matrix, as Nafion®) for environmental applications. In particular, the prepared nanomaterial and nanocomposites were tested as adsorbents and photocatalysts for the removal of water contaminants. The same materials have also been investigated as proton exchange membranes in fuel cells by determination of protonic transport properties of nanomaterials and nanocomposites by NMR technique.
June 2014	**ECDL-IT Security- Livello Specialised**
July 2012	**Cambridge ESOL Entry Level Certificate in ESOL International** **Level B1**
July 2012	**English Language Certificate by the Linguistic Department of University of Calabria** **Level B2**
January 2010 – October 2012	**Master's degree in Chemistry 05/10/2012**

	LAUREA MAGISTRALE IN CHIMICA (LM-54 - CLASSE DELLE LAUREE MAGISTRALI IN SCIENZE CHIMICHE DI CUI AL D.M. 16 MARZO 2007), conseguita in data 05/10/2012 con la votazione 110/110.
	University of Calabria, Arcavacata di Rende (Italy)
Level in national or international classification	Master's degree in Chemistry Final grade: 110/110
Principal subjects/occupational skills covered	organic chemistry, physical chemistry, analitical chemistry, instrumental chemistry, quantum mechanic
Additional Information	Master's degree Thesis: *"The effect of ionic strength on the complexation equilibria between the ion Al(III) and the trans-4-hydroxy-L-proline"*
	Study of the complexation equilibrium between the ion Al (III) and the trans-4-hydroxy-L-proline by potentiometric titrations and control of the effect of the ionic force. A model of speciation between the ion and the binder was defined, chosen due to their biological relevance, through thermodynamic measurements in equilibrium conditions. For this purpose, the protonation constants of the ligand and the formation constants of the complexes at 298.15 K and different ionic forces were calculated, in order to check also the effect of the latter on the investigated equilibria.
October 2005 – December 2009	**Bachelor's degree in Chemistry 21/12/2009** **LAUREA TRIENNALE IN CHIMICA (21 - CLASSE DELLE LAUREE IN SCIENZE E TECNOLOGIE CHIMICHE di cui al D.M. 04/08/2000) indirizzo CONTROLLO DELL'AMBIENTE E ELLA SALUTE, in data 21/12/2009 con la votazione 110/110.**
	University of Calabria, Arcavacata di Rende (Italy)
Level in national or international classification	Bachelor's degree in Chemistry Final grade: 110/110
Principal subjects/occupational skills covered	organic chemistry, physical chemistry, analitical chemistry, instrumental chemistry, quantum mechanic
Additional Information	Bachelor's degree Thesis: *" Theoretical study of proteolysis mechanism of Pt-C bindings in Pt(II) complexes"*
	By means of quantum-mechanical ab initio calculations, he reaction pathway followed preferentially for the activation of C-H bonds by Pt (II) complexes in the case of both phosphine and amine ligands was determinated. The influence of the nature of the metal complex ligands was examined, referring in particular to their hard-soft nature. The computational analysis of the energy differences between the two mechanisms made it possible to establish which is the preferred pathway and the compound that most favorably allows the catalysis of the process. All calculations necessary for the construction of the energy surfaces were carried out by the Gaussian03 code at theory level DFT. The obtained data were compared with experimental results reported in the literature.
September 2000 – July 2005	**High School Diploma**
	G.B. Scorza High School, Cosenza, Italy
Level in national or international classification	Diploma Final grade: 100/100

Principal subjects/occupational skills covered	chemistry, physic, mathematic, literature, English, biology

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B1 Independet	B1 Independet	B1 Independet	B1 Independet	B1 Independet

Course on scientific writing at University of Calabria
Course on scientific writing at University of Catania
B2 certification at Linguistic Centre of University of Calabria

Technical skills and competence	1. Computational simulation of energy curves for chemical reactions by the application of Density Functional Theory; 2. Study of complexation equilibrium, determination of the protonation constants and the formation constants of complexes by potentiometric titrations and control of the effect of the ionic force; 3. Chemical and microbiological analysis on environmental matrixes (i.e. water, waste, soils) and agro-food matrixes. Determination of water contaminants such as heavy metals and phytochemicals, analysis and classification of waste; 4. Use of analytical technique and instrumentations (i.e. Uv-Vis spectroscopy, ICP, HPLC, ionic chromatography, microwave digester) for chemical and microbiological analysis on environmental matrixes (i.e. water, waste, soils) and agro-food matrixes; 5. Knowledge on the procedures for chemical and microbiological analysis on environmental and agro-food matrixes, the classification of waste according to laws and standard analytical procedures; 6. Chemical synthesis of graphene oxide by Hummers methods and its functionalization with amine derivates;
	7. Nanocomposite membranes preparation by solvent casting method or doctor blade; 8. Nanocomposite porous membranes preparation by phase inversion technioque;
	9. Laser processes for the synthesis and modification of nanoparticles i.e. inorganic semiconductors to enhance their photocatalytic activity for water purification and hydrogen production; 10. Laser processes for the modification and/or reduction of graphene oxide for water purification application;
	11. Morphological characterization of nanomaterials and nanocomposites by scanning electron

	microsocpy;
	12. Chemical and physical characterization of materials by Uv-Visible, Raman, IR and XPS spectroscopy and thermos gravimetric analysis; 13. Raman spectroscopy and mapping for the evaluation of structural properties of carbon nanomaterials and semiconductors;
	14. Nanoparticles characterization by Z potential and dynamic light scattering;
	15. Determination of the photocatalytic activity of nanomaterials and nanocomposites for the use of these materials in advanced oxidation process; 16. Determination of the photocatalytic activity of nanomaterials and nanocomposites for the use of these materials for enviromental application; 17. Determination of the photocatalytic activity of nanomaterials and nanocomposites for the use of these materials in water splitting;
	18. Determination of protonic transport properties of nanomaterials and nanocomposites by NMR technique;
	19. Mechanical characterization of polymeric film by dynamic mechanical analysis;
	20. Electrical characterization of graphene oxide and modified graphene oxide, correlation of electrical properties with structural characteristic of the materials and application for biosensors; 21. Electrodeposition of nanomaterials and polymer solutions by electrophoresis; 22. Preparation of fibrous filter and their application in filtering processes; 23. Application of nanomaterials and polymeric nanocomposites as adsorbents for the removal of water contaminants (i.e. dyes and heavy metals). 24. Application of nanostructured materials and polymeric nanocomposites as catalysts for photocatalytic water splitting; 25. Fabrication of a PEM electrolyzer for hydrogen production by water splitting; 26. Synthesis, modification and chemical, structural and electrical characterization of polymeric nanocomposite membranes as electrolyte in PEM electrolyzer; 27. Synthesis, modification and chemical, structural and electrical characterization of carbon based gas diffusion layer modified by electrophoretic deposition of catalysts and or polymeric layers; 28. Build up pf PEM electrolyzer for hydrogen production by water splitting; 29. Synthesis, modification and chemical, physical, structural and electrical characterizations of polymeric nanocomposites used as electrolyzer (Nafion/Nexar within metal oxides, carbon nanomaterials); 30. Synthesis, modification and chemical, physical, structural and electrical characterizations of carbon gas diffusion layers modified by electrophoretic deposition of inorganic semiconductors and/or polymeric layers; 31. Theoretical and experimental study of chemical physical properties of metal oxide semiconductor/solvent interface; 32. Chemical, physical and structural characterization of naturally present clay to be applied as adsorbent or photocatalyst for water purification; 33. Preparation and characterizations of smart coating of commercial filters for water purification; 34. Preparation and characterizations of smart surface for antimicrobial and antifouling surface;

	35. Preparation and characterizations of carbon quantum dots synthesised starting from graphen oxide and natural source; 36. Preparation and study of nanostructured sensors within C nanomaterials/ metal oxide semiconductors for UV light sensing.
Communication and Social skills	▪ Good communication skills gained through my experience at University, as teacher and as speaker at international conferences; ▪ Open -minded to dialogue, listen and respect the others' ideas and points of view ▪ Integrate in new environments and adapt to different lifestyles ▪ Create and maintain relations with foreign people, promote enriching cultural exchanges ▪ Learn foreign languages rapidly ▪ Use appropriate manners and formal levels of the language in various circumstances

Organisational / managerial skills

▪ Organize own and group work driven by objectives, giving clear guide lines for the projects development
▪ Flexibility, ability to adapt and to learn new technologies in a short time
▪ Perform multiple tasks at the same time and achieve excellent results
▪ Collaborate with internal and external members of my group promoting a climate of reciprocal enrichment by change of ideas and opinions targeting the improvement of the group's final result
▪ Team spirit and proactiveness in driving technical change and innovation

Digital competence

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

ECDL-IT Security- Livello Specialised
Microsoft Office (Word, Excel, Power Point), Photoshop, Origin, XPS Peak;
High confidence in internet browsing and data base research information);

Driving licence: Patent B

ADDITIONAL INFORMATION

Publications	D. D'Angelo, **S. Filice**, S. Libertino, V. Kosma, I. Nicotera, V. Privitera, S. Scalese, Photocatalytic properties of Nafion membranes containing graphene oxide/titania nanocomposites, 2014 IEEE 9th Nanotechnology Materials and Devices Conference, NMDC 2014. **DOI:** 10.1109/NMDC.2014.6997420 2. **S. Filice**, D. D'Angelo, S. Libertino, I. Nicotera,V. Kosma, V. Privitera, S. Scalese, Graphene oxide and titania hybrid Nafion membranes for efficient removal of methyl orange dye from water, Carbon 82 (2015) 489-499–4 9 9. doi.org/10.1016/j.carbon.2014.10.093 3. **S. Filice**, D. D'Angelo, S.F. Spanò, G. Compagnini, M. Sinatra, L. D'Urso. E. Fazio, V. Privitera and S. Scalese, Modification of graphene oxide and graphene oxide–TiO_2 solutions by pulsed laser irradiation for dye removal from water, Mater. Sci. Semic. Process. (2015), http://dx.doi.org/10.1016/j. mssp.2015.07.073. 4. S. Baldo, V. Scuderi, L. Tripodi, A. La Magna, S.G. Leonardi, N. Donato, G. Neri, **S. Filice** and S. Scalese, Defects and gas sensing properties of carbon nanotube-based devices, J. SENS. SENS. SYST. 4 (2015), 25–30. doi:10.5194/jsss-4-25-2015 5. S. Scalese, I. Nicotera, D. D'Angelo, **S. Filice**, S. Libertino, C. Simari, K.Dimos, V. Privitera, Cationic and anionic azo-dye removal from water by sulfonated graphene oxide nanosheets in Nafion membranes, New Journal of Chemistry, 2016,**40**, 3654-3663 **DOI:** 10.1039/C5NJ03096J 6. Buccheri MA, D'Angelo D, Scalese S, Spanò SF, **Filice S**, Fazio E, Compagnini G, Zimbone M, Brundo MV, Pecoraro R, Alba A, Sinatra F, Rappazzo G, Privitera V. Modification of graphene oxide by laser irradiation: a new route to enhance antibacterial activity. Nanotechnology. 2016 Jun 17;27(24):245704. doi: 10.1088/0957-4484/27/24/245704. **7. S. Filice, G. Compagnini, R. Fiorenza, S. Scirè, L. D'Urso, M. E. Fragalà, P. Russo, E. Fazio, S. Scalese, Laser processing of TiO_2 colloids for an enhanced photocatalytic water splitting activity, Journal of Colloid and Interface Science, (2017), 489, 181-187. doi:10.1016/j.jcis.2016.08.013** 8. Scalese S; Baldo S; D'Angelo D; **Filice S**; Bongiorno C; Reitano R; Fazio E; Conoci S; La Magna A, Electrical properties and oxygen functionalities in ethanol-treated and thermally modified graphene oxide, Journal of Applied Physics, (2017), 121 (15), 155105. doi.org/10.1063/1.4981888 9. G. Compagnini, C. La Rosa, L. D'Urso, S. Scirè, R. Fiorenza, **S. Filice**, S. Scalese, Laser micro-nano-nanomanufacturing and 3D microprinting, Springer, In Press 10. **S. Filice**, D. D'Angelo, A. Scarangella, D. Iannazzo, G. Compagnini and S. Scalese, Highly effective and reusable sulfonated pentablock copolymer nanocomposites for water purification applications. RSC Advances, (2017), 7(72):45521-45534. DOI: 10.1039/C7RA08000J 11. D. D'Angelo, **S. Filice***, A. Scarangella, D. Iannazzo, G. Compagnini, S. Scalese, Bi_2O_3 / Nexar® polymer nanocomposite membranes for visible photocatalytic applications, Catalysis Today, 321–322 (2019) 158–163. doi.org/10.1016/j.cattod.2017.12.013 12. R. Pecoraro, D. D'Angelo, **S. Filice**, S. Scalese, F. Capparucci, F. Marino, C. Iaria, G. Guerriero, D. Tibullo, E. M. Scalisi, A. Salvaggio, I. Nicotera, M. V. Brundo, Toxicity evaluation of graphene oxide and titania loaded Nafion membranes in zebrafish, Accepted by Frontiers in Physiology, 2018, 8, 1039. doi: 10.3389/fphys.2017.01039 13. D. D'Angelo, **S. Filice**, M. Miritello, C. Bongiorno, E. Fazio, F. Neri, G. Compagnini and S. Scalese, b-Bi2O3 reduction by laser irradiation in liquid environment, Physical Chemistry Chemical Physics, 2018, DOI: 10.1039/C8CP00146D 14. **S Filice**, G Urzì, RG Milazzo, SMS Privitera, SA Lombardo, G Compagnini, S Scalese, Applicability of a New Sulfonated Pentablock Copolymer Membrane and Modified Gas Diffusion Layers for Low-Cost Water Splitting Processes, Energies **2019**, 12, 2064; doi:10.3390/en12112064 15. S Boscarino, **S Filice**, A Sciuto, S Libertino, M Scuderi, C Galati, S Scalese, Investigation of ZnO-decorated CNTs for UV Light Detection Applications, Nanomaterials 9 (8), 1099; doi:10.3390/en12112064 16. **S Filice**, R Fiorenza, R Reitano, S Scalese, S Sciré, G Fisicaro, I Deretzis, A La Magna and G Compagnini, Study of the role of ethanol in laser treated TiO2 colloids for photocatalytic water splitting ACS Applied Nano Materials 3 (9), 9127-9140 17. G Fisicaro, **S Filice**, S Scalese, G Compagnini, R Reitano, L Genovese, S Goedecker, I Deretzis and A La Magna, Wet Environment Effects for Ethanol and Water Adsorption on Anatase TiO_2 (101) The Journal of Physical Chemistry C 124 (4), 2406-2419 https://doi.org/10.1021/acs.jpcc.9b05400

	18. **S Filice**, M Mazurkiewicz-Pawlicka, A Malolepszy, L Stobinski, R Kwiatkowski, A Boczkowska, L Gradon, S Scalese Sulfonated pentablock copolymer membranes and graphene oxide addition for efficient removal of metal ions from water Nanomaterials, (2020), 10 (6), 1157. 19. E L Sciuto, **S Filice**, M A Coniglio, G Faro, L Gradon, C Galati, N Spinella, S Libertino, S Scalese Antimicrobial s-PBC Coatings for Innovative Multifunctional Water Filters Molecules 2020 25 (21), 5196. 20. **S. Filice**, R. Fiorenza, R. Reitano, S. Scalese, S. Scire, G. Fisicaro, I. Deretzis, A. La Magna, C. Bongiorno, G. Compagnini TiO_2 Colloids Laser-Treated in Ethanol for Photocatalytic H_2 Production ACS Applied Nano Materials 2020, 3 (9), 9127-9140. 21. **S. Filice**, C. Bongiorno, S. Libertino, G. Compagnini, L. Gradon, D. Iannazzo, A. La Magna and S. Scalese, Structural Characterization and Adsorption Properties of Dunino Raw Halloysite Mineral for Dye Removal from Water Materials 2021, 14, 3676. 22. E.L. Sciuto, P. Laganà, **S. Filice**, S. Scalese, S. Libertino, D. Corso, G. Faro, M.A. Coniglio Environmental Management of Legionella in Domestic Water Systems: Consolidated and Innovative Approaches for Disinfection Methods and Risk Assessment. Microorganisms 2021, 9, 577. 23. **S. Filice**, C. Bongiorno, S. Libertino, L. Gradon, D. Iannazzo, S. Scalese Degradation of Methyl Orange with Dunino Halloysite as a Source of Iron. Catalysts 2022, 12, 257. https:// doi.org/10.3390/catal12030257. 24. **S. Filice**, E.L. Sciuto, S. Scalese, G. Faro, S. Libertino, D. Corso, R. M. Timpanaro, P. Laganà, M. A. Coniglio Innovative Antibiofilm Smart Surface against Legionella for Water Systems. Microorganisms 2022, 10, 870. https://doi.org/10.3390/ microorganisms10050870 25. **S. Filice**, V. Scuderi, S. Libertino, M. Zimbone, C. Galati, N. Spinella, L. Gradon, L. Falqui, S. Scalese Sulfonated Pentablock Copolymer Coating of Polypropylene Filters for Dye and Metal Ions Effective Removal by Integrated Adsorption and Filtration Process. Int. J. Mol. Sci. 2022, 23, 11777. https://doi.org/10.3390/ ijms231911777 26. **S. Filice**, S. Boscarino, M. Scuderi, S. Libertino, C. Galati, A. Terrasi, S. Scalese AZO Nanoparticles-Decorated CNTs for UV Light Sensing: A Structural, Chemical, and Electro-Optical Investigation. Nanomaterials 2023, 13, 215. https://doi.org/10.3390/ nano13010215

Conference	Furia E., Cesario D. , Filice S. , Napoli A. , Sindona G. **"Thermodynamic properties of trans-4-hydroxy-L-proline: effect of the ionic medium, ionic strength and temperature on the acid – base and complexation properties.".** Proceedings "VIII Convegno Congiunto delle Sezioni Calabria e Sicilia", Arcavacata di Rende, 2012, 2012.
	S. Filice, I. Nicotera, D. D'Angelo, V. Privitera, S. Libertino, S. Scalese **"Hybrid Nanocomposite Nafion membranes for adsorption and photocatalytic degradation of methyl orange dye in water"** Oral presentation a XII International Conference on Nanostructured Materials (NANO 2014), July 13-18, 2014 Moscow, Russia.
	S. Filice, I. Nicotera, D.D'Angelo, S.Libertino, V.Kosma, S.Scalese, C. Simari, V. Privitera **"CNT-TiO_2 composites in Nafion membranes for efficient dye degradation in water ".** Oral presentation at IEEE Nanotechnology Materials and Devices Conference October 12-15, 2014 ACI CASTELLO, ITALY
	S. Filice, I. Nicotera, D.D'Angelo, S.Libertino, V.Kosma, S.Scalese, V. Privitera **"Photocatalytic properties of Nafion membranes containing graphene oxide/titania nanocomposites".** Oral presentation at IEEE Nanotechnology Materials and Devices Conference October 12-15, 2014 ACI CASTELLO, ITALY

	S. Scalese, S. Filice, D. D'Angelo, S. Libertino, V. Kosma, I. Nicotera, V. Privitera. **" Organo-modified graphene oxide for safe azo-dye removal from water"** Oral presentation at E-MRS 2015 Spring Meeting, May 11-15 Lille, France. S. Filice, D. D'Angelo, S.F. Spanò, G. Compagnini, M. Sinatra, E. Fazio, V. Privitera and S. Scalese. **"Modification of graphene oxide and graphene oxide-TiO_2 solutions by pulsed laser irradiation for dye degradation"** Oral presentation at E-MRS 2015 Spring Meeting, May 11-15 Lille, France. Oral presentation at GRAPHITA 2015, September, 14-18 Bologna, Italy. Oral presentation at FISMAT 2015, 28 September – 02 October 2015, Palermo, Italy. S. Filice, D. D'Angelo, L. D'Urso, A. Scarangella, D. Iannazzo, G. Compagnini, V. Privitera and S. Scalese **"Hybrid sulfonated pentablock copolymer nanocomposites for water purification applications"** Oral presentation at E-MRS 2016 Spring Meeting, May 2-6 Lille, France. S. Scalese, S. Baldo, D. D'Angelo, S. Filice, C. Bongiorno, I. Deretzis, A. La Magna **"Graphene oxide for sensing applications: investigation of electrical properties and correlation with oxygen functionalities"** Oral presentation at E-MRS 2016 Spring Meeting, May 2-6 Lille, France.
	S. Filice, D. D'Angelo, L. D'Urso, A. Scarangella, D. Iannazzo, G. Compagnini, V. Privitera and S. Scalese **"Embedding nanomaterials in sulphonated polymers for water purification applications"** Oral presentation at International Conference on NANOstructures and nanomaterials SElf-Assembly 2016 (*NanoSEA 2016*) 4-8 July Giardini Naxos, Messina. S. Filice, Giuseppe Compagnini, Roberto Fiorenza, Salvatore Scirè, Luisa D'Urso, Maria Elena Fragalà, Orazio Puglisi, Enza Fazio, Silvia Scalese **"In liquid' laser modification and photocatalytic water splitting activity of TiO_2 nanoparticles"** Oral presentation at International Conference on NANOstructures and nanomaterials SElf-Assembly 2016 (*NanoSEA 2016*) 4-8 July Giardini Naxos, Messina Oral presentation at Conference on Advanced Nanoparticle Generation and Excitation by Lasers in Liquids (ANGEL), May 9-13 Essen, Germany. G.Compagnini, L.D'urso, O.Puglisi, M.E. Fragalà, R.Fiorenza, S.Scirè, S.Filice, S.Scalese, E.Fazio **"Photocatalytic water splitting activity in laser treated TiO_2 nanoparticles"** Oral presentation at 3rd International Conference on Nanojoining and Microjoining (NMJ2016), September 25-28, 2016 in Niagara Falls, Ontario, Canada. S. Filice, R. Fiorenza, L. D'Urso, S. Sciré, E. Fazio, S. Scalese and Giuseppe Compagnini **"Laser processing of TiO_2 colloids for an enhanced photocatalytic water splitting activity"** Oral presentation at Materials 2016 Catania.

	S. Filice, D. D'Angelo, A. Scarangella, D. Iannazzo, E. Fazio, G. Compagnini and S. Scalese **"Bi_2O_3 / Nexar® polymer nanocomposite membrane for photocatalytic applications"** Oral presentation at E-MRS 2017 Spring Meeting, May 2-6 Strasbourg, France S. Filice, G. Urzì, R.G. Milazzo, S. Privitera, S.A. Lombardo, G. Compagnini and S. Scalese **New sulfonated pentablock copolymer membranes for water splitting application** Oral presentation at E-MRS 2018 Fall Meeting, September 17-20 Warsaw, Poland. S. Filice*, G. Compagnini and S. Scalese **Highly effective and reusable sulfonated pentablock copolymer nanocomposites for water purification applications** Oral at 25th Topical Meeting of the International Society of Electrochemistry 12-15 Maggio 2019, Toledo Spagna S. Filice*, Roberto Fiorenza, Giuseppe Compagnini, Salvatore Sciré, G. Fisicaro, Ioannis Deretzis, Antonino La Magna and Silvia Scalese **Solvent effect on laser treated TiO_2 nanoparticles for enhanced photocatalytic activity** Oral at FISMAT 30 Settembre – 4 Ottobre 2019, Catania Italia S. Filice*, G. Compagnini and S. Scalese **"Highly effective and reusable sulfonated polymer nanocomposites for water purification applications".** Invited talk alla XXIV Conferenza AIV 7-10 Maggio 2019, Giardini Naxos, Italia.
	S. Filice, D. D'Angelo, G. Compagnini, M. Sinatra, E. Fazio, V. Privitera and S. Scalese **Tuning of the oxygen-functionalities on Graphene Oxide and Graphene Oxide-TiO_2 by Pulsed Lased Irradiation for dye degradation** Poster at Conference on Advanced Nanoparticle Generation and Excitation by Lasers in Liquids (ANGEL), May 9-13 Essen, Germany. S. Filice, D. D'Angelo, A. Scarangella, D. Iannazzo, L. D'Urso, G. Compagnini and S. Scalese. **Hybrid sulfonated pentablock copolymer membranes with titania and graphene oxide for azo-dye removal from water** Poster at Materials 2016 Catania. Silvia Scalese, Daniele D'Angelo, Salvatore Baldo, Simona Filice, Corrado Bongiorno, Riccardo Reitano, Enza Fazio, Sabrina Conoci, Antonino La Magna, **Chemical and thermal modification of graphene oxide for sensing applications** Poster at E-MRS 2017 Spring Meeting, May 2-6 Strasbourg, France. S Filice, G Urzì, RG Milazzo, SMS Privitera, SA Lombardo, G Compagnini, S Scalese, **"New sulfonated pentablock copolymer membranes and modified gas diffusion layers for the improvement of Ir free water splitting processes."** Poster at 25th Topical Meeting of the International Society of Electrochemistry 12-15 Maggio 2019, Toledo Spagna

	S. Filice, G. Urzì, R.G. Milazzo, S. Privitera, S.A. Lombardo, G. Compagnini and S. Scalese **New sulfonated pentablock copolymer membranes for water splitting application** Poster at FISMAT 30 Settembre – 4 Ottobre 2019, Catania Italia
Awards	**Best Student Award** **EMRS Spring Meeting 2016** May 2016 In recognition of best student presented during EMRS 2016 Symposium A (Hybrid materials: from the laboratory to the market) **CENIDE Student Participation Grants and Student Travel Grant** **Conference on Advanced Nanoparticle Generation and Excitation by Lasers in Liquids (ANGEL), May 9-13 Essen, Germany** May 2016 In recognition of best PhD student curriculum and research project for the participation at the conference. **CENIDE Student Participation Grants** **4th Conference on Advanced Nanoparticle Generation and Excitation by Lasers in Liquids (ANGEL)** In recognition of best PhD student curriculum and research project for the participation at the PhD school on laser processes. May 2016 **Student Participation Grants** In recognition of best PhD student curriculum and research project for the 8th EPF Summer School on Transport Phenomena in Polymers and Hybrid Materials. Lago di Garda, Italy, Maggio 2017.
Others	• Collaboration as referee with the Arabian Journal of Chemistry, Desalination and Water treatment; Journal of Environmental Management; Journal of Cleaner Production; Catalysis Today; Journal of Membrane Science; Processes; Materials; Journal of the American Ceramic Society; Applied Sciences (MDPI): International Journal of Energy Research (John Wiley & Sons); Molecules (MDPI); Materials (MDPI); Processes (MDPI); • Assistant Supervisor for Master thesis titled *Laser irradiation process on TiO_2 colloids for photocatalytic water splitting* and Bachelor thesis titled *Laser irradiation process on TiO_2 colloids for enhanced photocatalytic activity;* • Guest Editor of "Synthesis and Characterization of Nanocomposites and Functional Coatings for Water Purification", a Special Issue of *Coatings* (ISSN 2079-6412; IF 2.881; http://www.mdpi.com/journal/coatings) • Member of Topic Board of Coatings (MDPI)

ANNEXES

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Catania, li

08/03/2023

Dott.ssa. Simona Filice