

PERSONAL INFORMATION

Silvia Scalese

📍 **Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e Microsistemi (CNR-IMM)**, Ottava Strada n.5, I-95121 Catania, Italy

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POSITION

Researcher (permanent position)

WORK EXPERIENCE

27 Dec. 2001 - present

Researcher (permanent position)

Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e Microsistemi (CNR-IMM), Ottava Strada n.5, I-95121 Catania, Italy

- 26/10/2020 - present: Coordinator of the "Functional nanomaterials" Workgroup at IMM headquarters, Catania
- 14/03/2018 to 13/03/2020: Coordinator of the "Chemical, Physical and Biological Sensors" Workgroup at IMM headquarters, Catania
- 05/01/2009 - present: In charge of the Carbon nanostructures Laboratory
- 23/02/2005 - present: In charge of the Scanning Electron Microscopy Laboratory
- 2010-2014: In charge of the activity "Carbon-based nanostructured materials" (modulo MD.P05.005.005) within the Project "Development of advanced methodologies for micro and nanostructured electronic devices" (Commissa MD.P05.005)

Research activity: Nanomaterials and nanocomposites for health and environment applications; synthesis and characterization; adsorption and photocatalytic properties of materials for the removal of contaminants from water; innovative materials for the development of sensing devices (gas, biological molecules, radiation)

Nov. 2000- 26 Dec. 2001

Researcher (temporary position)

INFN Research Unit of Catania c/o Physics Dept., Università di Catania, Italy

Research activity: Molecular beam epitaxy of silicon and silicon-germanium based alloys; defects in semiconductors; doping of silicon-based materials

Jan. 1998- 31 Nov. 2000

Post-Doc position

INFN Research Unit of Catania c/o Physics Dept., Università di Catania, Italy

March 16, 1998 - July 10, 1998: **training** on MBE technique at Institut für Halbleiterphysik di Frankfurt/Oder, Germany

Research activity: Molecular beam epitaxy of silicon and silicon-germanium based alloys; doping of silicon based materials

EDUCATION AND TRAINING

Nov.1st, 1994 – Oct 31st, 1997

PhD Course in Physics

National examination for PhD Degree on May 9th, 1998

Università della Calabria, Arcavacata di Rende (CS), Italy

Oct.16, 1995 – Apr. 17, 1996 stage at Physics Dept., University of Fribourg (Switzerland)

- Skills acquired: Surface Physics; Chemisorption processes of molecules and alkali metals on metal surfaces; characterization by (photo)electron diffraction and (photo)electron spectroscopies

Nov.1st, 1988 – July 21st, 1994

University studies / Degree (Laurea) in Physics

Università della Calabria, Arcavacata di Rende (CS), Italy

Sept. 6, 1993 – Oct. 6, 1993: 'Werkstudent' at the Fraunhofer Institut für Angewandte Festkörperphysik, Freiburg, Germany

- Skills acquired: Surface Physics; Chemisorption processes of molecules on metal surfaces; characterization by (photo)electron spectroscopies

WORK ACTIVITY

Publications

Papers on peer reviewed journals and books: **128**; total number of citations: 2067 (Scopus); H-index: 25 (Scopus)

<http://www.scopus.com> - AU-ID "Scalese, Silvia" 6701834104

<https://scholar.google.it/citations?hl=it&pli=1&user=XmqYxjUAAAAJ>

Main Projects

- Research Unit coordinator - FISR2019_04480 "GRATA" - "*Uso di Graphene Quantum Dots come carrier di agenti teranostici per tumori solidi*" (February 1st - present)
- Participant - Technology demonstration of large-scale photo-electrochemical system for solar hydrogen production (PECSYS) (Jan. 1, 2017 – Dec. 31, 2020)
- WP Leader - "Winning Applications of Nano TEchnology for Resolutive Hydropurification – WATER", FP7 REGPOT-2012-2013-1 (Oct.1st, 2012 - March 31st, 2016)
- Task leader - PON 02_00355_2964193 "Sviluppo di Micro- e Nano-tecnologie e Sistemi avanzati per la salute dell'uomo - Hippocrates". (July 2012 - July 2015)
- Research Unit coordinator - PRIN 2007 "Nuove strategie per la sintesi di nanostrutture a base di carbonio mediante la formazione di plasmi in ambienti liquidi" (Sept. 22nd, 2008 – Sept. 2010).
- Member of technical/scientific Committee - "Laboratorio pubblico-privato per lo sviluppo di tecnologie di processo e dimostratori di circuiti elettronici ad alte prestazioni e basso costo di fabbricazione realizzati su substrati plastici (PLAST_Ics, FAR prot MIUR DM 17767 art. 12 lab) (Jan. 1st, 2006 – Dec. 31st, 2008)
- Participant - European Project FRENDECH (Front-End Models for Silicon Future Technology), FP5- IST (Information Society Technologies) Programme for research, technological development and demonstration on a "User-friendly information society, 1998-2002" (Sept. 2001-Aug.2004)

Editorial Activity

- **Guest Editor** - Special issue "Application of Carbon-Based Nanostructures and Nanocomposites for Sustainable Development" , of the Journal **Nanomaterials** (MDPI AG, Basel, Switzerland), **June16, 2020 – present**
- **Topic Editor** of the Nanomaterials Topic Board since January 2020 - present
- **Guest Editor** - Special issue "Carbon-Based Nanostructures and Nanocomposites for Health and Environmental Applications" of **Nanomaterials** (MDPI AG, Basel, Switzerland), **Oct. 30, 2018 – May 31, 2020**
- **Editor** - Carbon-Based Low Dimensional Materials - Proceedings of the 2nd CARBOMAT Workshop - Ed.: Silvia Scalese & Antonino La Magna. Printed in Catania (Italy), March 2012, ISBN 978-88-8080-124-5

Referee Activity

- **Reviewer** for the following international Journals: ACS Applied Materials & Interfaces; AIP Advances; Applied Surface Science; Arabian Journal of Chemistry; C Journal of Carbon research; Carbon; Catalysis today; Chemical Physics; Desalination; Diamond and related materials; Electrochemical and Solid-State Letters; Environmental Chemistry Letters; Environmental Science: Water research & Technology; IEEE Transactions on Nanotechnology; Journal of the Electrochemical Society; Journal of Raman Spectroscopy ; Journal of Nanomaterials; Journal of Nanoscience and Nanotechnology; Journal of Water Process Engineering; Materials; Materials Chemistry and Physics; Materials Letters; Materials Research Xpress; Materials Science in Semiconductor Processing; Membranes; Membrane Water Treatment; Nanomaterials; Nanoscale; New Journal of Chemistry; Polymers; RSC Advances; Separation and Purification Technology; Water science and technology.

Patents

- "Method for suppressing transient enhanced diffusion of dopants in silicon", A. Carnera, A. Coati, D. Da Salvador, S. Mirabella, E. Napolitani, F. Priolo, S. Scalese, European Patent Application

EP1454348 n. PCT/EP2002/013659, 03/12/2002; US Patent Application No: 2005/0106,824 , 19/05/2005

Tutorship activities

- **Tutor** of n.4 PhD students in *Physics and Materials Science (between 2008 and 2017)*
- **Tutor** of n.6 Master Degree (Laurea) Students in Physics, Materials Science and Electronic Engineering (between 2003 and 2016)
- **Tutor** (n.360 hours) within the project “Sviluppo ed applicazione di tecnologie biosensoristiche in genomica” P.O. FSE 2014/2020 (2018-2019)
- **Tutor** (n.144 hours) **and teaching activity** (n. 40 hours) **within the project** POR Sicilia FSE 2007-2013 “Formazione di ricercatori altamente qualificati per l’Imaging e la Sensoristica Biomedica”, (2015).
- **Tutor** (n.330 hours) within the project PON 01_00700 “Ambition Power” for the University of Catania (July 2013 - July 2014)

ADDITIONAL INFORMATION

Recent Publications

- Bi₂O₃/Nexar® polymer nanocomposite membranes for visible photocatalytic applications. *D. D’Angelo, S. Filice, A. Scarangella, D. Iannazzo, G. Compagnini and S. Scalese*, *Catalysis Today*, Vol. 321–322, 1 February **2019**, Pages 158-163.
- Applicability of a New Sulfonated Pentablock Copolymer Membrane and Modified Gas Diffusion Layers for Low-Cost Water Splitting Processes, *S. Filice, G. Urzi, R. G. Milazzo, S. M. S. Privitera, S. A. Lombardo, G. Compagnini, S. Scalese*, *Energies* **2019**, Volume 12, Issue 11, 2064
- Investigation of ZnO-decorated CNTs for UV Light Detection Applications. *Stefano Boscarino, Simona Filice, Antonella Sciuto, Sebania Libertino, Mario Scuderi, Clelia Galati and Silvia Scalese*. *Nanomaterials* **2019**, 9, 1099 (12pp)
- Wet Environment Effects for Ethanol and Water Adsorption on Anatase TiO₂ (101) Surfaces, *Giuseppe Fiscaro, Simona Filice, Silvia Scalese, Giuseppe Compagnini, Riccardo Reitano, Luigi Genovese, Stefan Goedecker, Ioannis Deretzis, Antonino La Magna*, *J. Phys. Chem. C* **2020**, 124, 4, 2406–2419
- Sulfonated pentablock copolymer membranes and graphene oxide addition for efficient removal of metal ions from water, *S. Filice, M. Mazurkiewicz-Pawlicka, A. Malolepszy, L. Stobinski, R. Kwiatkowski, A. Boczkowska, L. Gradon and S. Scalese*, *Nanomaterials* **2020**, 10, 1157
- TiO₂ colloids laser treated in ethanol for photocatalytic H₂ production. *S. Filice, R. Fiorenza, R. Reitano, S. Scalese, S. Sciré, G. Fiscaro, I. Deretzis, A. La Magna and G. Compagnini*. *ACS Appl. Nano Mater.* **2020**, 3, 9, 9127–9140
- Antimicrobial s-PBC coatings for innovative multifunctional water filters, *E.L. Sciuto, S. Filice, M.A. Coniglio, G. Faro, L. Gradon, C. Galati, N. Spinella, S. Libertino and S. Scalese*. *Molecules* **2020**, Volume 25, Issue 21, 5196
- Eco-Friendly 1,3-Dipolar Cycloaddition reactions on Graphene Quantum Dots in Natural Deep Eutectic Solvent. *Salvatore V. Giofrè, Matteo Tiecco, Consuelo Celesti, Salvatore Patanè, Claudia Triolo, Antonino Gulino, Luca Spitaleri, Silvia Scalese, Mario Scuderi and Daniela Iannazzo*. *Nanomaterials* **2020**, 10, 2549
- Environmental management of Legionella in domestic water systems: consolidated and innovative approaches for disinfection methods and risk assessment. *Emanuele Luigi Sciuto, Pasqualina Laganà, Simona Filice, Silvia Scalese, Sebania Libertino, Domenico Corso, Giuseppina Faro, Maria Anna Coniglio*. Special issue “Legionella and Legionnaires’ Disease: Pathogenesis, Prevention, and Public Health”, *Microorganisms* **2021**, 9, 577
- Structural Characterization and Adsorption Properties of Dunino Raw Halloysite Mineral for Dye Removal from Water. *Filice, S.; Bongiorno, C.; Libertino, S.; Compagnini, G.; Gradon, L.; Iannazzo, D.; La Magna, A.; Scalese, S.* *Materials* **2021**, 14, 3676

Catania, 21/02/2022