

Curriculum vitae

Giuseppe Forte

Education and training

1996 Degree in Pharmaceutical and chemistry and technology

2004 Ph.D – Chemical Sciences, University of Catania

2004 to 2008 Post-doctoral fellow Department of Chemical Sciences, University of Catania

Teaching

2008-2009 General and Inorganic Chemistry (Credits 10) Faculty of Pharmacy, Course: Tossicologia dell'Ambiente

2009-2013 General and Inorganic Chemistry (Credits 10) Faculty of Pharmacy, Course: Tossicologia dell'Ambiente

2013- General and Inorganic Chemistry (Credits 6) Department of Pharmaceutical Sciences, Course: Scienze Farmaceutiche Applicate

2020- General and Inorganic Chemistry (Credits 8) Department of Drug and Health Sciences Sciences, Course: Chimica e tecnologia farmaceutiche

Work experience

11/2008 to 02/2020 - Researcher of general and inorganic chemistry, University of Catania

06/2013 to 07/2014 - Member of the research group for the University of Catania

2015 to date - Research project evaluator, University and Research Ministry (PRIN, FISR)

10/2016 to 02/2020 – Member of the Academic Senate (University of Catania)

08/2018 to date – member of the board of Consorzio Catania Ricerche, consortium for innovation and internationalization

03/2020 to date Associate professor of general and inorganic chemistry (University of Catania)

Personal skills

Mother tongue – Italian

Other languages – English: Listening B1, Reading B2, Spoken B1, Written B2

Digital skills – Advanced in the use of word processor, spreadsheet, Fortran programming, molecular modeling and ab initio softwares

Research activity

The research activity has mainly developed on the following topics:

- 1) study of the interactions between biocompatible surfaces and molecules of biological interest.

This research activity has aimed at the study, through computational techniques at different level of approximation (molecular dynamics, semi-empirical hybrid QM/MM and ab initio)

of the interactions between molecules of biological interest and biocompatible surfaces for drug delivery applications. More recently the research activity in this area has focused more on the design of nanosystems characterized by surfaces, C-dots and nanorods functionalized with polymer responsive to external stimuli such as temperature and pH, for the applications in theranostic nanomedicine.

2) structural and electronic properties of nanomaterials and dye-sensitized solar cells

This research topic is focused on the computational ab initio study of the structural, optical and electronic properties of C-based nanomaterials with potential use in the realization of nanodevices for engineering applications and sensitizers for solar cells applications.

He actively collaborated with national and international researchers and the following institute: Department of Physics, University of Antwerp, Belgium; CNR - Institute of microelectronic and microsystems, Catania; Department of applied physics, Chalmers University of Technology, Gothenburg, Sweden; Department of Pharmacy, University of Pisa.

Scientific output

Giuseppe Forte is author of 67 publications (33 as corresponding or first author) listed by ISI, 1 cover, 2 book chapters, over 30 communications to national and international meetings.

<https://www.scopus.com/authid/detail.uri?authorId=57001240900>

Funded research projects:

He was involved within the following national awarded projects:

From 2010 to 2012 - participant to the research program PRIN-2008 – 2008X8RTZL_001: Title: Superfici funzionali per processi di autoorganizzazione di peptidi per la rigenerazione tissutale

From 2013 to 2016 participant to the research program PRIN 2010-2011 – 20105ZZTSE_007 Title: GRAF. Frontiere della ricerca sul grafene: comprensione e controllo di funzionalità avanzate.

From 2023 - participant to the research program: PRIN PNRR 2022: Title Novel biomedical devices combining antimicrobial and anti-inflammatory activity by embedding bioactive-loaded nanoconstructs in polymer films for more effectiveness in infectious disease treatment.

From 2019 to 2022 participant to the research program: PO-FESR Sicilia 2014-2020 - 087219090463 Title: Micro e nano sistemi innovativi per la cura efficace del Tumore al Fegato

From 2022 - participant to the research program M4C2 - dalla ricerca all'impresa - 1.4: Potenziamento strutture di ricerca e creazione di "campioni nazionali di R&S" su alcune Key Enabling Technologies - finanziato dall'Unione europea - NextGenerationEU" - Task 1.1 Investigation methodologies for the implementation of HPC solvers WP6 Drug-target studies and drug repurposing", nell'ambito del progetto dal titolo: "Centro Nazionale di Ricerca HPC, Big data e Quantum Computing" a valere sull'area tematica Simulazioni, calcolo e analisi dei dati ad alte prestazioni"

From 2022 - participant to the research activity W.P.2.1.11 (2D materials to mitigate the environmental impact of electronic waste), nell'ambito del progetto dal titolo: "Sicilian

MicronanoTech Research And Innovation Center - SAMOTHRACE", di cui all' Avviso del Ministero dell'Università e della Ricerca n. 3277 del 30 dicembre 2021 per la presentazione di proposte di intervento per la creazione e il rafforzamento di "ecosistemi dell'innovazione", costruzione di "leader territoriali di R&S" - Ecosistemi dell'Innovazione - nell'ambito del Piano Nazionale di Ripresa e Resilienza, Missione 4 Istruzione e ricerca - Componente 2 Dalla ricerca all'impresa - Investimento 1.5, finanziato dall'Unione europea - NextGenerationEU"

From 2023 - participant to the research activity Bando Operativo Salute PSC 2014-2020 traiettoria 4, titolo del progetto: Riposizionamento di farmaci nelle malattie neurologiche rare del sistema nervoso in età pediatrica.

He was PI for the following Italian SuperComputing Resource Allocation (ISCRA) projects:

SiSOEPG (HP10BZAGBJ), 2010, title: Simulations of the Structural, Optical and Electronic Properties of Graphene.

SAeCPoN (HP10CKCMJC), 2011, title: Simulation of Aromatics - end Capped Polyynes onto Nanoribbon

GOfDR (HP10CEEXOL), 2014, title: Graphene oxide functionalized for drug release

StiRCoRe (HP10B1DSDH) 2018, title: Simulations of Stimuli-Responsive Materials for Controlled Release

AuNPsCoP (HP10CU700Y), 2023, title: Simulation of Thermoresponsive behavior of Gold Nanoparticles Functionalized with PNIPAM and PNIPAM/Poly(lactide) Copolymer for Enhanced Biocompatibility

LCCDSSC (HP10BOPIYD), 2024, title: Modelling of novel linear Carbon Chain based dyes for DSSC