

Curriculum vitae | Prof. Dr. Gianvito Vilé

Address:

Politecnico di Milano
Department of Chemistry, Materials and
Chemical Engineering "Giulio Natta"
Piazza Leonardo da Vinci, 32
20133 Milan, Italy

ResearcherID: [Q-9114-2016](#)

ORCID: [0000-0003-0641-8590](#)

Scopus: [55065086200](#)

GoogleScholar: [Gianvito Vilé](#)

Personal information:

Date of birth: 26/11/1987 (**37 years**)

Place of birth: Mesagne (Italy)

Citizenship: Italian

**ACHIEVEMENTS IN BRIEF**

- Leading an internationally visible research group integrating micro- and nanoengineering, catalysis, and process intensification to develop next-generation technologies for sustainable pharmaceutical and fine chemical manufacturing.
- 4 years of hand-on industrial experience, where I contributed to the development of continuous-flow manufacturing platforms, collaborated with Contract Development and Manufacturing Organizations (CDMOs), and gained exposure to regulatory and industrial challenges in pharmaceutical production.
- Multiple highly-cited (100+) peer-reviewed publications (primarily as research articles), 19 journal covers, with 5600+ citations (average citation per paper: 85+) and an h-index of 32 (Google Scholar).
- €6+ million in competitive research grants in the last 5 years, including an ERC Starting Grant (2022), an ERC Proof of Concept (2024), and multiple Horizon Europe/MSCA projects, primarily in green pharmaceuticals and sustainable catalysis.
- Actively engaged in knowledge dissemination and academic leadership, serving on editorial boards for six major journals (ACS, Elsevier, RSC, Wiley), reviewing for over 20 top-tier journals, and contributing to several international scientific advisory panels and European research evaluation committees.

RESEARCH INTERESTS

Micro- and nanoengineering for sustainable pharmaceutical manufacturing | atomically-precised catalytic nanomaterials | process intensification | miniaturized continuous-flow reactors | mechanochemistry and solvent-free synthesis | waste-free pharmaceutical production | advanced catalyst design: structure-function relationships and in situ/operando characterization | integration of automation and process engineering

EDUCATION & TRAINING

- 2022 **Habilitation** for a Professorship in Chemical/Process Engineering (09/D3 "Chemical plants and technologies"), and **Qualified Engineer**, registered with the Italian Professional Association (Albo degli Ingegneri) after passing the State Examination at the University of Bologna
- 2016 **PhD** (with **ETH medal** and **Dimistris N. Chorafas Prize**), **ETH Zurich** (Switzerland), Thesis title: "Design of new nanostructured catalysts for selective hydrogenations in flow"
- 2011 **MSc** (110/110 cum laude) in Chemical Engineering, **Politecnico di Milano** (Italy)
- 2010 **Visiting Student**, Department of Chemical Engineering, **TU Delft** (The Netherlands), and Institute for Chemical and Bioengineering, **ETH Zurich** (Switzerland)
- 2009 **BSc** (110/110 cum laude) in Chemical Engineering, **Politecnico di Milano** (Italy)

CURRENT ACADEMIC POSITION

2023 - today **Associate Professor**, Department of Chemistry, Materials and Chemical Engineering, **Politecnico di Milano** (Italy)

Member of the **PhD Board in Industrial Chemistry and Chemical Engineering**, Department of Chemistry, Materials and Chemical Engineering, **Politecnico di Milano** (Italy)

Member of the **National PhD Board in Catalysis**, Department of Chemistry, Materials and Chemical Engineering, **Politecnico di Milano** (Italy)

PREVIOUS ACADEMIC AND RESEARCH POSITIONS

2020 - 2023 **Group Leader** and **Tenure-Track Assistant Professor**, Department of Chemistry, Materials and Chemical Engineering, **Politecnico di Milano** (Italy)

2016 - 2019 **Scientist**, Department of Chemistry Technologies, **Idorsia Pharmaceuticals** (Switzerland)
From 2016 to 2019, I worked at Idorsia Pharmaceuticals (formerly Actelion) in Allschwil, Switzerland, as a Scientist and Lab Head in the Department of Chemistry Technologies. In this role, I led research activities focused on process development and continuous manufacturing, supporting drug discovery and early pharmaceutical development. I was responsible for designing and optimizing innovative synthetic methodologies, with a strong emphasis on green manufacturing principles and the integration of new technologies. My team successfully developed several scalable processes, collaborating closely with CDMOs to facilitate technology transfer and industrial implementation. Additionally, I coordinated cross-functional projects to enhance efficiency in chemical synthesis and process intensification, contributing to the advancement of sustainable pharmaceutical manufacturing.

2016 - 2016 **R&D Engineer, Sensirion AG** (Switzerland)
I was an R&D Engineer at Sensirion AG, a leading sensor technology company in Switzerland. My work focused on developing and optimizing chemical processes for sensor fabrication (a mixed oxide sensor for gas detection), with a strong emphasis on material science and microfluidics.

2011 - 2016 **Scientific Assistant** and **PhD Candidate** in "**Catalysis Engineering**", Institute for Chemical and Bioengineering, **ETH Zurich** (Switzerland)

2010 - 2011 **Visiting Student**, Department of Chemical Engineering, **TU Delft** (The Netherlands)

AWARDS & HONORS

2024 "**Premio Robert Karl Grasselli 2024**", Italian Chemical Society and Interdivisional Group of Catalysis

2024 **Junior Member of the Italian Academy of Engineering**, Italy

2024 "**ERC Proof of Concept**", European Research Council

2023 Elected "**Fellow of the Young Academy of Europe**", Young Academy of Europe

2022 "**ERC Starting Grant**", European Research Council

2022 "**Alfredo di Braccio Award**", Accademia dei Lincei (Italian National Academy)

2021 "**Gricu Award**" for contributions in the field of chemical engineering, Italian Chemical Engineering Society

2021 "**Emerging Investigators in Chemical Engineering**", Reaction Chemistry & Engineering, **Royal Society of Chemistry**

2021 **Junior Fellowship**, University of Bayreuth Centre of International Excellence "Alexander von Humboldt"

- 2020 **"Expert for the Chemical and Materials Industry", World Economic Forum**
- 2019 **"Influential Researcher in Chemical Engineering"**, I&EC Research, **American Chemical Society**
- 2019 Felder Award, Fondazione Bracco & Fondazione Politecnico di Milano, Italy
- 2016 **Dimistris N. Chorafas Prize**, upon recommendation from the Vice President Research and the Vice Rector for Doctoral Studies, ETH Zurich and the Dimitris N. Chorafas Foundation
- 2016 Materials & Industrial Processes Award, MaP Competence Center of ETH Zurich
- 2016 **ETH Medal for Outstanding PhD Thesis**, ETH Zurich
- 2015 Outstanding Reviewer, Wiley-VCH, and PubChemSoc Europe
- 2014 "DSM award" for Best Poster Presentation in Catalysis, SCS Fall Meeting and DSM
- 2014 SCNAT/SCS Chemistry Travel award, Swiss Academy of Sciences & Swiss Chemical Society
- 2012 "Prix SGVC" award for young talents, Swiss Process and Chemical Engineers Society
- 2010 Erasmus/LLP Scholarship, European Union | ATHENS Scholarship, TU Delft
- 2010 "Make Science Make Sense" award, Bayer

COMMISSIONS OF TRUST

(a) Invitation to international policy panels/roundtables

- 2024 - today **Member of the European Commission panel on "Green Pharmaceuticals"**, in collaboration with the European Medicines Agency (**EMA**) and the European Federation of Pharmaceutical Industries and Associations (**EFPIA**).
The Roundtable on Green Pharmaceuticals, organized in collaboration with the European Medicines Agency (EMA) and the European Federation of Pharmaceutical Industries and Associations (EFPIA), focuses on developing practices for greener pharmaceutical manufacturing. The panel is working toward a White Paper that outlines industry-wide guidelines for reducing the environmental impact of pharmaceutical production, optimizing resource efficiency, and implementing greener regulatory frameworks. The expected outcome is a set of formalized sustainability guidelines to be adopted across the sector.
- 2024 - today **Member of the European Commission panel on "A new MSCA Green Charter"**.
The Panel is updating and strengthening sustainability principles within the Marie Skłodowska-Curie Actions. This initiative seeks to enhance the environmental responsibility of EU-funded research projects by refining existing commitments on carbon footprint reduction, sustainable mobility, and eco-friendly research practices. The revision process will result in new guidelines that reinforce the MSCA's commitment to green science, ensuring that future projects align with EU sustainability goals.
- 2020 **Expert for the Chemical and Materials Industry, World Economic Forum.**
As an Expert for the Chemical and Materials Industry for the World Economic Forum in 2020, I revised and updated the "transformation map" for the sector.

(b) Editorial services

- 2023 - today **Advisory Board Member of *Chemical Science*** (IF 7.6, Royal Society of Chemistry).
- 2022 - today **Early-Career Editorial Board Member of *Applied Catalysis B*** (IF 20.3, Elsevier).
- 2022 - today **Early-Career Editorial Board Member of *ACS ES&T Engineering*** (IF 7.5, American Chemical Society).
- 2022 - today **Early-Career Editorial Board Member of *Molecular Catalysis*** (IF 3.9, Elsevier).

- 2021 - today **Editorial Board Member** of *ChemCatChem* (IF 3.8, Wiley).
- 2021 - today **Early-Career Editorial Board Member** of *Chemical Engineering and Processing - Process Intensification* (IF 3.8).
- 2022 - today Invited Guest Editor for the *Molecular Catalysis* special issue "Nano and single-atom catalysts for renewable chemicals", together with **Prof. Ning Yan** (National University of Singapore).
- 2021 - today Invited Guest Editor for the *ChemCatChem* special issue "Developments at the interface between surface organometallic and heterogeneous single-atom catalysts", together with **Prof. Angelika Bruckner** (Leibniz Institute for Catalysis) and **Prof. Botao Qiao** (Dalian Institute of Chemical Physics).
- 2021 - today Invited Guest Editor for the *Chemical Engineering and Processing - Process Intensification* special issue "Process intensification approaches for waste-to-value", together with **Prof. Dmitry Murzin** (Åbo Akademi University).
- 2020 - today Invited Guest Editor of a *Processes* special issue on "Catalytic Processes in Continuous Nanostructured Reactor", together with **Prof. Jiaxu Liu** (Dalian University of Technology).
- 2017 - 2018 Invited Guest Editor for the *Catalysis Today* special issue "Catalysis in continuous flow microreactors".

(c) Evaluation of competitive grants

- 2024 - today **Panel Member ...**
- 2023 - today **Panel Member ...**
- 2023 - today **Panel Member ...**
- 2021 - today **Remote Evaluator** for the European Commission (**ERC StG, ERC CoG, MSCA-Doctoral Network, EIC Pathfinder Open, WIDERA Twinning, WIDERA Chair, and COST actions**), **Singapore** National Research Foundation, Science Foundation **Ireland, US** National Science Foundation, **Slovak** Academy of Sciences, **Czech** Academy of Sciences, National Science Center **Poland**, Research Foundation **Flanders** FWO, **Dutch** Research Council, National Research Development and Innovation Office of **Hungary**.
- 2020 - today **Expert Evaluator** for the progress of the European Commission H2020 project FLIX ("Flow chemistry for Isotopic eXchange"), integrating catalysis and flow reactor design. Partners: Commissariat à l'Énergie Atomique et aux Énergies Alternatives, Leibniz Institute of Catalysis, National Institute of Applied Sciences of Toulouse, Aarhus University, ComInnex, Absiskey, University of Amsterdam.

(d) Organization of scientific meetings and conferences

- 2025 **International Scientific Committee Member** of the ESCRE 2027, the European Symposium on Chemical Reaction Engineering (Milan, 2027).
- 2025 **Co-organizer** of the 3rd Italian Flow Chemistry Conference (Bari, 8th-9th May 2025).
- 2024 **Co-organizer** of the 2nd Workshop on Single-Atom Catalysts (Milan, 13th December 2024).
- 2023 **Co-organizer** of the 2nd Italian Flow Chemistry Conference (Milan, 27th-28th November 2023).
- 2022 **Organizer** of the the 1st Workshop on Single-Atom Catalysts (Milan, 6th October 2022).
- 2018 **Founding member** (jointly with Dr. Claudio Battilocchio, Syngenta) of the Swiss industrial roundtable "Flow Chemistry in Switzerland", Allschwil (Switzerland) with other five founding member from Syngenta, Novartis, Roche, Firmenich, and Givaudan.

(e) Peer reviewer for scientific journals

2012 - today **Reviewer** for *Science, Nature, Nat. Nanotechnol., Nat. Chem., Nat. Chem. Eng., Nat. Commun., Nat. Synthesis, ACS Catal., JACS, Chem, Appl. Catal. B, Angew. Chem. Int. Ed., Chem. Catal., Adv. Funct. Mater., ACS Appl. Mater. Interfaces, Nanoscale, ACS Nano, ChemSusChem, J. Catal., Chem. Eur. J., Chem. Commun., Catal. Sci. Technol., ChemCatChem, React. Chem. Eng., Catal. Commun., Ind. Eng. Chem. Res.*, etc. (>20 papers/year)

ACQUIRED THIRD-PARTY FUNDING

Over the past five years, I have secured over **€6 million** in competitive research grants and have been involved in projects totaling more than **€17 million**, including partnerships where applicable. The funding comes from **public institutions** (European Commission, Italian Ministry of University and Research), **pharmaceutical companies** (Bayer, Versalis, Procos, and Bracco Imaging), and **private foundations** (Fondazione Bracco and Fondazione Cariplo).

2024 - today "CATSYNEX: Harnessing the market potential of single-atom catalysts through next-generation large-scale synthesis" (**ERC PoC 2024**), European Commission, **€ 150'000** (of this, **€ 120'000** go to my lab at POLIMI) (Role: **International Competitive Call. Coordinator and Principal Investigator**).

2024 - today "FLOWCAT: Twinning for building excellence and innovation solutions in flow catalysis", European Commission, **€ 1'499'988** (of this, **€ 159'875** go to my lab at POLIMI) (Role: **International Competitive Call. Partner**).

2024 - today "MERGE: Twinning excellence in management and research for green energy and chemicals using single-atom catalysis", European Commission, **€ 1'499'973** (of this, **€ 377'143** go to my lab at POLIMI) (Role: **International Competitive Call. Partner**).

2024 - today "Continuous-flow manufacturing of a phenol from aniline", Bayer Crop Science, **€ 25'000** (Role: **Principal Investigator**).

2024 - today "SELMA: Single-atom catalysts for a new generation of chemical processes: from fundamental understanding to interface engineering", European Commission, Marie Skłodowska-Curie Individual Fellowships for Dr. Hushan Chand, **€ 172'750** (Role: **International Competitive Call. Coordinator and Principal Investigator**).

2024 - today "SOLCAT: Solid frustrated-Lewis pair single-atom catalysts for efficient photocatalytic amidation processes", European Commission, Marie Skłodowska-Curie Individual Fellowships for Dr. Theo Gazis, **€ 172'750** (Role: **International Competitive Call. Coordinator and Principal Investigator**).

2023 - today "SAC_2.0: Single-atom catalysts for a new generation of chemical processes: from fundamental understanding to interface engineering" (**ERC StG 2022**), European Commission, **€ 1'499'681** (Role: **International Competitive Call. Principal Investigator**).

2023 - today "UNDERSAC: Understanding the structure and reactivity of C₃N₄-based single-atom catalysts" (PRIN 2022), Italian Ministry of Education, **€ 220'400** (of this, **€ 72'400** go to my lab at POLIMI) (Role: **National Competitive Call. Coordinator and Principal Investigator**).

2023 - today "GreenDigiPharma: Green and digital pharmaceutical manufacturing", European Commission, **€ 2'605'881.60** (of this, **€ 518'875** go to my lab at POLIMI) (Role: **International Competitive Call. Coordinator and Principal Investigator**).

2023 - today "SACtoH₂: Rational design of single-atom catalysts for light-to-H₂ conversion" (PRIN PNRR 2022), Italian Ministry of Education, **€ 299'692** (of this, **€ 128'706** go to my lab at POLIMI) (Role: **National Competitive Call. Unit Leader**).

- 2023 - today "Photocatalytic recovery of iodine from iodinated waste using single-atom catalysts", Fondazione Cariplo – Economia Circolare, **€ 299'775** (of this, **€ 100'000** go to my lab at POLIMI) (Role: **International Competitive Call. Unit Leader**).
- 2023 - today "Conventional and alternative catalytic systems for the production of carboxylic acids from vegetable oils", ENI Versalis, **€ 198'000** (Role: **Principal Investigator**).
- 2022 - today "SACforCO₂: Heterogeneous Single-Atom Catalysts for Carbon Dioxide Reduction to Chemicals", European Commission, Marie Skłodowska-Curie Individual Fellowships for Dr. Vitthal Saptal, **€ 188'590** (Role: **International Competitive Call. Coordinator and Principal Investigator**).
- 2022 - today "SusPharma: Merging Sustainable And Digital Chemical Technologies for The Development Of Greener-By-Design Pharmaceuticals", European Commission, **€ 6'897'657** (of this, **€ 1'018'125** go to my lab at POLIMI) (Role: **International Competitive Call. Principal Investigator**).
- 2021 - 2023 "SSEFR: Single-site electrocatalytic flow reactor for C-C coupling", European Commission, Marie Skłodowska-Curie Individual Fellowships for Dr. Mark Bajeda, **€ 171'473** (Role: **International Competitive Call. Coordinator and Principal Investigator**).
- 2021 - 2023 "Flow synthesis of pharmaceutical intermediates", Procos Pharmaceuticals Spa, **€ 5'000** (Role: **Principal Investigator**).
- 2020 - 2022 "Catalytic conversion of vegetable oil into synthetic fuels", ENI Versalis, **€ 180'000** (Role: Task leader).
- 2020 - 2024 "AFRICA: harnessing the power of Flow chemistry for the synthesis of Complex pharmaceuticals", Fondazione Bracco, **€ 900'000** (Role: **International Competitive Call. Principal Investigator**).
- 2020 - 2021 "Heterogeneously-catalyzed continuous flow process for organic synthesis", Procos Pharmaceuticals Spa, **€ 10'000** (Role: **Principal Investigator**).
- 2020 - 2022 "Photocatalytic processes to recover iodine from wastewater", Bracco Imaging Spa, **€ 55'000** (Role: **Principal Investigator**).
- 2020 - 2022 "Flow chemistry for the synthesis of a new contrast agent", Bracco Imaging Spa, **€ 76'842** (Role: **Principal Investigator**).

TEACHING AND MENTORING

Politecnico di Milano (Italy):

Professor for:

- *Continuous Manufacturing of Pharmaceuticals* (Graduate, 5 ECTS): AY 2023-2024 (rated **Excellent** by students) and 2024-2025 (ongoing).
- *Chemical Engineering Project* (Undergraduate, 8 ECTS): AY 2021-2022, 2022-2023, and 2023-2024 (ongoing).
- *Flow Chemistry* (Graduate, 5 ECTS): AY 2022-2023 (rated **Excellent** by students).
- *Process Intensification and Flow Chemistry* (Graduate, 5 ECTS): AY 2019-2020, 2020-2021, and 2021-2022 (rated **Excellent** by students).
- *Metal-Based Catalysis for Fine Chemicals* (PhD level, 3 CFU): Starting from AY 2024-2025.

FHNW University of Applied Sciences and Arts Northwestern (Switzerland):

Professor for:

- *Mikroprocesstechnik* (Graduate): AY 2020-2021. This course covered microprocess technology, including microfluidics, reaction kinetics in microscale systems, and practical applications of microstructured reactors in chemical and pharmaceutical manufacturing.

ETH Zurich (Switzerland):

Teaching Assistant:

- *Catalysis Engineering* (Graduate, 8 ECTS): 2014-2015.

Lab Instructor:

- *Laboratory of Catalysis* and *Laboratory of Flow Chemistry*, Chemical Engineering Laboratory II (Graduate, 8 ECTS): 2011-2012, 2012-2013, 2013-2014, 2014-2015.

STUDENTS' SUPERVISION EXPERIENCE*Postdoctoral fellows:*

Dr. Mark Bajada	Dr. Jody Albertazzi	Dr. Hushan Chand	Dr. Agustin De Arriba
Dr. Vitthal Saptal	Dr. Theo Gazis	Dr. Luis Cipriano	Dr. Jennifer Hong
Dr. Grazia Righetti	Dr. Xiufang He	Dr. Viktoriia Velicho	

PhD students:

Alessandra Sivo	Jiachengjun Luo	Mert Can Ince	Kaan Karaca
Vincenzo Ruta	Nicolò Allasia	Miguel De Vries	Ziqi Wang
Areti Mousiou	Milla Vigliengo	Shilpa Palit	

MSc thesis students:

Riccardo Gulminelli	Daniela Dardano	Enrico Annoscia	Moritz Haus
Letizia Rossi	Paola Piscioneri	Gabriele Musati	Michael Ehrenstein
Nathan Guy G. Husy	Giuseppe Marino	Eleonora Ruffini	David Grivel
Mario Scialdone	Edoardo V. Pasini	Francesco Iannacci	Patrick Dähler
Ilaria Montanari	Vittoria Granata	Matteo Vergani	Sarah Correa
Federica Romanelli	Martina Villa	Leonardo Mineo	Jonas Wichert
Alberto F. Ceravolo	Giuseppe Minerva	Massimiliano de Maron	Leonard Floryan
Giacomo Cassanego	Maria Suanno	Carola Romani	Jakub Jagielski
Chiara Bassano	Alessandro Manfredi	Lara Amini	