Curriculum Vitæ | prof. dr.-ing. Gianvito Vilé

Address:

Politecnico di Milano
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GoogleScholar: Gianvito Vilé

Personal information:

Date of birth: 26/11/1987 (**36 years**)
Place of birth: Mesagne (Italy)
Citizenship: Italian

RESEARCH INTERESTS

- Published 50+ articles in peer-reviewed journals, which were featured in 15 front covers
- Google: ca. 4500 citations, h-index 29 (as of September 2023)
- Awarded >5 million EUR in grants in the last 4 years, including an ERC Starting Grant in 2022
- Manage a research group of 11 people (3 postdocs, 8 PhD students), besides temporary undergraduates
- Presented over 68 times at conferences, seminars and workshops, including 49 keynote/invited talks
- Editorial board member for 6 major journals in chemical engineering or chemistry (*Chem. Sci.*, *Appl. Catal. B*, *ChemCatChem*, *Mol. Catal.*, *ACS ES&T Eng.*, and *Chem. Eng. Process.*), and reviewer for 20+ journals
- Participate in several international scientific advisory panels and panel evaluation committees

RESEARCH INTERESTS

Process intensification | Single-atom catalysis | Continuous synthesis and purification | Synergy between homogeneous & heterogeneous catalysts | Process chemistry | Catalyst implementation and reaction engineering | Bio-based synthesis | Pharmaceutical production | New chemistry technologies (photochemistry, electrocatalysis)

EDUCATION

2020 **Habilitation** for a Full Professorship in Chemical Engineering, Italian Ministry of University.

2016 **Ph.D.** (**with medal**, highest grade), **ETH Zurich** (Switzerland), Thesis title: "Design of new nanostructured catalysts for selective hydrogenations in flow". Advisor: Prof. Dr. Javier Perez-Ramirez.

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 APPOINTMENT

2023 - today **Associate Professor**, Department of Chemistry, Materials and Chemical Engineering, **Politecnico di Milano** (Italy) (**equivalent to a W3 in the German system**)

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

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

PREVIOUS ACADEMIC AND RESEARCH APPOINTMENTS

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

2016 - 2019 **Lab Head**, Department of Chemistry Technologies, **Idorsia Pharmaceuticals** (Switzerland)

2016 - 2016 **Scientist in "Process Intensification"**, **Sensirion AG** (Switzerland)

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

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

FUNDING

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: Attracted funding. **International Competitive Call**. **Principal Investigator**).

2023 - today "UNDERSAC: Understanding the structure and reactivity of C_3N_4-based single-atom catalysts" (PRIN 2022), Italian Ministry of Education, **€ 220'400** (of this, **€ 72'400** go to my lab at POLIMI) (Role: Attracted funding. **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: Attracted funding. **International Competitive Call**. **Coordinator and Principal Investigator**).

2023 - today "SACtoH_2: Rational design of single-atom catalysts for light-to-H_2 conversion" (PRIN PNRR 2022), Italian Ministry of Education, **€ 299'692** (of this, **€ 128'706** go to my lab at POLIMI) (Role: Attracted funding. **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: Attracted funding. **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: Attracted funding. **International Competitive Call**. **Coordinator and Principal Investigator**).

2022 - today "SusPharma: Merging Sustainable And Digital Chemical Technologiesfor The Development Of Greener-By-Design Pharmaceuticals", European Commission, **€ 6'897'657** (of this, **€ 1'018'125** go to my lab at POLIMI) (Role: Attracted funding. **International Competitive Call**. **Principal Investigator**).

2021 - today "SSEFR: Single-site electrocatalytic flow reactor for C-C coupling", European Commission, Marie Skłodowska-Curie Individual Fellowships for Dr. Mark Bajeda, **€ 171'473** (Role: Attracted funding. **International Competitive Call**. **Coordinator and Principal Investigator**).

2020 - 2022 "Catalytic conversion of vegetable oil into synthetic fuels", ENI Versalis, **€ 180'000** (Role: Task leader).

2022 - today "Flow synthesis of pharmaceutical intermediates", Procos Pharmaceuticals Spa, **€ 5'000** (Role: Attracted funding. **Principal Investigator**).

2019 - today "AFRICA: hArnessing the power of Flow chemistRy for the synthesIs of Complex phArmaceuticals", Fondazione Bracco, **€ 900'000** (Role: Attracted funding. **International Competitive Call**. **Principal Investigator**).

2020 - 2021 "Heterogeneously-catalyzed continuous flow process for organic synthesis", Procos Pharmaceuticals Spa, **€ 15'000** (Role: Attracted funding. **Principal Investigator**).

2020 - 2021 "Photocatalytic processes to recover iodine from wastewater", Bracco Imaging Spa, **€ 55'000** (Role: Attracted funding. **Principal Investigator**).

2020 - 2021 "Flow chemistry for the synthesis of a new contrast agent", Bracco Imaging Spa, **€ 76'842** (Role:

Attracted funding. **Principal Investigator**).

2016 - 2019 "Engineering novel photocatalytic films for organic synthesis in flow reactors", Idorsia Pharmaceuticals, CHF 423'332 (ca. **€ 388'313**)

TEACHING

2023 - today **Lecturer** - "Continuous Manufacturing of Pharmaceuticals" (Graduate, 5 ECTS). (Student evaluation: Excellent)

2021 - today **Lecturer** - "Laboratory of Chemical Engineering Project" (Undergraduate, 8 ECTS).

2019 - 2022 **Lecturer** - "Flow Chemistry" (Graduate, 5 ECTS), Politecnico di Milano (Italy). (Student evaluation: Excellent)

2013 - 2016 **Teaching assistant** - "Catalysis Engineering" (Graduate, 8 ECTS), Institute for Chemical and Bioengineering, ETH Zurich (Switzerland)

2011 - 2015 **Lab instructor** - "Laboratory of Catalytic Materials" and "Laboratory of Flow Reactions", Chemical Engineering Laboratory II (Graduate, 8 ECTS), Institute for Chemical and Bioengineering, ETH Zurich (Switzerland)

STUDENTS' SUPERVISION

Postdoctoral fellows:

Dr. Mark Bajada	Dr. Vitthal Saptal	Dr. Grazia Righetti

PhD students:

Alessandra Sivo	Areti Mousiou	Niccolò Allasia	Mert Can Ince
Vincenzo Ruta	Jiachengjun Luo	Milla Vigliengo	Miguel De Vries

MSc thesis students:

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

AWARDS

2023 Named as "**Emerging Leaders 2023**", Journal of *Physics Condensed Matter*, Institute of Physics (IOP)

2023 Elected "**Fellow of the Young Academy of Europe**", Young Academy of Europe and Academia Europaea

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

2022 "**Alfredo di Braccio Award**" for pioneering contributions in the field of single-atom catalysis, Accademia dei Lincei

2021 Named as "**Chemical Engineering Rising Stars**", Frontiers in Chemical Engineering, Frontiers

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

2021 **Humboldt Junior Fellowship**, Humboldt Foundation and University of Bayreuth

2020 Nominated "**Expert for the Chemical and Materials Industry**", World Economic Forum

2020 Top Reviewers for ChemCatChem, Wiley-VCH and PubChemSoc Europe

2019 Named as "**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 Award in Chemistry**, Weizmann Institute of Science, Israel

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

PROFESSIONAL SERVICES

(a) Editorial services

2023 - today **Advisory Board Member** of *Chemical Science* (IF 9.969, Royal Society of Chemistry).

2022 - today **Early-Career Editorial Board Member** of *Applied Catalysis B* (IF 22.1, Elsevier). (Member of the journal Social Media and Cover Selection Committees)

2022 - today **Early-Career Editorial Board Member** of *ACS ES&T Engineering* (IF 7.1, Americal Chemical Society).

2022 - today **Editorial Board Member** of *Molecular Catalysis* (IF 5.089, Elsevier).

2021 - today **Early-Career Editorial Board Member** of *ChemCatChem* (IF 4.85, Wiley).

2021 - today **Early-Career Editorial Board Member** of *Chemical Engineering and Processing - Process Intensification* (IF 4.3).

2020 - today **Board member** for other minor journals published by Frontiers (*Front. Chem. Eng.*, *Front. Catal.*) and MPDI (*Processes*).

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 *Chem. Eng. Process.* 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".

(b) Evaluation of competitive grants

2023 - today **Panel Member (Chemical Engineering & Catalysis)** for the Research Foundation Flanders FWO (call: **PhD fellowships**).

2023 - today **Panel Member (Chemistry & Chemical Engineering)** for China's New Cornerstone Investigator Program (equivalent to the ERC in Europe, awarding exceptional scientists with stable and long-term support for fundamental discovery research, with up to 5 million yuan per year).

2021 - today **Remote Evaluator** for the European Commission (**ERC CoG**, **Horizon FET**, **WIDERA**, **MSCA-**

Doctoral Network, 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, ational Research, Development and Innovation Office of Hungary, Dutch Research Council.

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.

(c) Organization of scientific meetings and other roundtables

2022 **Organizer** of the Italian Flow Chemistry Conference (Milan, 27-28th November 2023).

2022 **Organizer** of the Workshop on Atomically-Dispersed Catalysts (Milan, 6th October 2022).

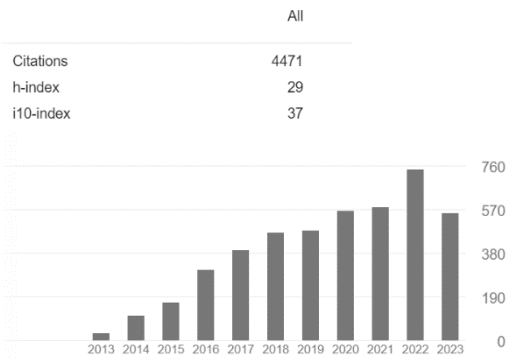
2018 **Organizer** of the Swiss industrial roundtable "Catalysis & Process Intensification in Switzerland", Allschwil (Switzerland) with experts from Novartis, Roche, Syngenta, Idorsia Pharmaceuticals, Firmenich, and Givaudan.

2019 - 2020 **Board member** of the Swiss industrial roundtable "Process Intensification, FlowChemistry & Green Industrial Processes in Switzerland".

(d) Peer reviewer for scientific journals

2012 - today **Reviewer** for *Nat. Nanotechnol.*, *Nat. Commun.*, *Nat. Synthesis*, *ACS Catal.*, *JACS*, *Chem*, *Appl. Catal. B*, *Angew. Chem. Int. Ed.*, *Chem. Catal.*, *Adv. Funct. Materi.*, *ACS Appl. Mater. Interfaces*, *Nanoscale*, *ChemSusChem*, *J. Catal.*, *Chem. Eur. J.*, *Chem. Commun.*, *Catal. Sci. Technol.*, *ChemCatChem*, *React. Chem. Eng.*, *Catal. Commun.*, *Ind. Eng. Chem. Res.*, *ChemistrySelect*, *ChemMedChem*, *J. Mol. Catal.*, *Eur. J. Org.Chem.*(**>20 papers per year**)

PEER-REVIEWED PUBLICATIONS (the symbol * denotes publications with me as corresponding author)



Citation summary (as of September 2023)

4471 citations
13 papers cited >100 times
Average citations per paper: 87,7
H-index: 29

2 papers in **Nature-type journals** (and 1 more under revision), 6 papers in **Angew. Chem. Int. Ed**., 3 papers in **ACS Catal.**, 3 papers in **Appl. Catal. B**, 4 papers in **React. Chem. Eng.,** 1 paper in **ACS Sustain. Chem. Eng**, 1 paper in **Chem. Soc. Rev**., 1 in **ACS Nano**.

1. A. Sivo , N. Allasia , O. Nevskyi , M. Marelli , V. Vanoli , N.C. Fusi , J. Albertazzi , V. Busini , F. Castiglione , F. Rossi, **G. VILÉ***, "A novel polymer-based microreactor confining carbon nitride for continuous photocatalytic applications" *Nature Chem. Eng.* (under revision).
2. M.A. Bajada, G. Di Liberto, S. Tosoni, V. Ruta, L. Mino, N. Allasia, A. Sivo, G. Pacchioni, **G. VILÉ***, "Light-driven C-O coupling of carboxylic acids and alkyl halides over a Ni single-atom catalyst" *Nature Synth.* **2023**, doi: 10.1038/s44160-023-00341-3. Link
3. **G. VILÉ***, "Paired aluminum sites in zeolite catalysts enhance aromatics production" *Chem* **2023**, 3, 100616. Link
4. L.J. Wesenberg, A. Sivo, **G. VILÉ**, T. Noël, "Ni-catalyzed electro-reductive cross-electrophile couplings of alkyl amine-derived radical precursors with aryl iodides" *J. Org. Lett.* **2023**, e202219306. Link

5. V. Saptal, M.A. Bajada, V. Ruta, **G. VILÉ***, "Single-atom catalysis in organic synthesis" *Angew. Chem. Int. Ed.* **2023**, e202219306 Link (Frontispiece)
6. M. Colella, Y. Gelato, M. Andresini, E. Graziano, **G. VILÉ**, L. Degennaro, R. Luisi, "Forging C-S bonds on the azetidine ring by continuous flow photochemical addition of thiols and disulfides to azetines" *Eur. J. Org. Chem.* **2023**, e202300413. Link (Highlighted for its importance by a group of industrial experts from Lilly, Pfizer, Merck, UCB, GSK, in *Org. Process Res. Dev.* **2023**, *27*, 1535-1545)
7. A. Sivo, V. Ruta, V. Granata, A. Savateev, M.A. Bajada, **G. VILÉ***, "Nanostructured carbon nitride for continuous-flow trifluoromethylation of (hetero)arenes" *ACS Sustain. Chem. Eng.* **2023**, *11*, 5284-5292. Link (Front Cover)
8. M.A. Bajada, J. Sanjosé-Orduna, G. Di Liberto, S. Tosoni, G. Pacchioni, T. Noël, **G. VILÉ***, "Interfacing single-atom catalysis with continuous-flow organic electrosynthesis" *Chem. Soc. Rev.* **2022**, *51*, 3898. Link (Front Cover)
9. **G. VILÉ***, D. Ng, Z. Xie, I. Martinez Botella, J. Tsanaktsidis, C.H. Hornung, "3D-printed structured reactor with integrated single-atom catalyst film for hydrogenation" *ChemCatChem* **2022**, *14*, e202101941. Link (Front Cover)
10. **G. VILÉ***, G. Di Liberto, S. Tosoni, A. Sivo, V. Ruta, M. Nachtegaal, A.H. Clark, S. Agnoli, Y. Zou, A. Savateev, M. Antonietti, G. Pacchioni, "Azide-alkyne click chemistry over a heterogeneous copper-based single-atom catalyst" *ACS Catal.* **2022**, *12*, 2947-2958. Link
11. V. Ruta, A. Sivo, L. Bonetti, M.A. Bajada, **G. VILÉ***, "Structural effects of metal single-atom catalysts for enhanced photocatalytic degradation of Gemfibrozil" *ACS Appl. Nano Mater.* **2022**, *5*, 14520. Link
12. A. Sivo, T. Keun Kim, V. Ruta, R. Luisi, J. Osorio-Tejada, M. Escriba-Gelonch, V. Hessel, M. Sponchioni, **G. VILÉ***, "Enhanced flow synthesis of small molecules by in-line integration of sequential catalysis and benchtop twin-column continuous chromatography" *React. Chem. Eng.* **2022**, *7*, 2650. Link (selected for the Collection 'Emerging Investigators in Chemical Engineering')
13. J. Liu, Z. Zhang, X. Jiang, N. He, W. Zhou, Y. Zhao, P. Guo, Y. Jiang, G. Xiong, J. Su, **G. VILÉ***, "Influence of the zeolite surface properties and potassium modification on the Zn-catalyzed CO_2-assisted oxidative dehydrogenation of ethane" *Appl. Catal. B* **2022**, *304*, 120947. Link
14. J. Liu, Z. Zhang, C. Liu, **G. VILÉ**, G. Xiong, N. He, "Structured binder-free BEA zeolite in hierarchical form for enhanced acid-catalyzed dehydration" *ACS Appl. Nanomater.* **2021**, *4*, 11997. Link
15. A. Sivo, V. Ruta, **G. VILÉ***, "Gram-scale domino synthesis in batch and flow modes of azetidinium salts" *J. Org. Chem.* **2021**, *86*, 14113. Link
16. **G. VILÉ***, J. Liu, Z. Zhang, "Surface engineering of a Cu-based heterogeneous catalyst for efficient azide-alkyne click cycloaddition" *React. Chem. Eng.* **2021**, doi: 10.1039/d1re00199j Link (Special Collection 'Royal Society of Chemistry Emerging Investigators in Chemical Engineering')
17. **G. VILÉ***, P. Sharma, M. Nachtegaal, F. Tollini, D. Moscatelli, A. Sroka-Bartnicka, O. Tomanec, M. Petr, J. Filip, I.S. Pieta, R. Zbořil, M.B. Gawande, "An Earth-abundant Ni-based single-atom catalyst for selective photodegradation of pollutants" *Solar RRL* **2021**, *5*, 2100176 Link (Invited Front Cover; dedicated to the memory of Prof. Maria Flytzani-Stephanopoulos)
18. J. Liu, Y. Zou, D. Cruz, A. Savateev, M. Antonietti, **G. VILÉ***, "Ligand-metal charge transfer induced via adjustment of textural properties controls the performance of single-atom catalysts during photocatalytic degradation" *ACS Appl. Mater. Interfaces* **2021**, *13*, 25858. Link
19. J. Liu, N. He, Z. Zhang, J. Yang, X. Jiang, J. Su, M. Shu, R. Si, G. Xiong, H.-B. Xie, **G. VILÉ***, "Highly-dispersed zinc species on zeolites for the continuous and selective dehydrogenation of ethane with CO_2 as soft oxidant" *ACS Catal.* **2021**, *11*, 2819. Link
20. A. Sivo, R. Galaverna, G. Gomes, J. Pastre, **G. VILÉ***, "From circular synthesis to materials manufacturing: advances, challenges, and future steps for using flow chemistry in novel application areas" *React. Chem. Eng.* **2021**, *6*, 756. Link (Front Cover)

21. **G. VILÉ***, "Photocatalytic materials and light-driven continuous processes to remove emerging pharmaceutical pollutants from water and selectively close the carbon cycle" *Catal. Sci. Technol.* **2021**, *11*, 43. Link
22. S. Tortoioli, A. Friedli, A. Prud'homme, S. Richard-Bildstein, P. Kohler, S. Abele, **G. VILÉ***, "Development of an efficient and sustainable synthesis of 2-(3-methyl-1 H-1, 2, 4-triazol-1-yl) acetic acid under continuous-flow conditions" *Green Chem.* **2020**, *22*, 3748. Link (Front Cover)
23. L. Amini-Rentsch, E. Vanoli, S. Richard-Bildstein, R. Marti, **G. VILÉ***, "A novel and efficient continuous-flow reactor to prepare trifluoromethylated *N*-fused heterocycles for drug discovery and pharmaceutical manufacturing" *Ind. Eng. Chem. Res.* **2019**, *58*, 10164. Link (Front Cover, '2019 Class of Influential Researchers in Chemical Engineering')
24. E. Vorobyeva, E. Fako, Z. Chen, S. M. Collins, D. Johnstone, P. A. Midgley, R. Hauert, O. V. Safonova, **G. VILÉ**, N. López, S. Mitchell, J. Pérez-Ramírez, "Atom-by-atom resolution of structure-function relations over low-nuclearity metal catalysts" *Angew. Chem. Int. Ed.* **2019**, *58*, 8724. Link (Hot paper, highlighted in ChemViews)
25. **G. VILÉ***, G. Schmidt, S. Richard, S. Abele, "Enantiospecific cyclization to 2-methylproline derivative via 'memory of chirality' in flow" *J. Flow Chem.* **2019**, *9*, 19. Link (Special Issue 'Continuous Process Engineering in Manufacturing')
26. **G. VILÉ***, S. Richard, A. Lhuillery, G. Rueedi, "Electrophile, substrate functionality, and catalyst effects in the synthesis of mono and disubstituted benzylamines via visible-light photoredox catalysis in flow" *ChemCatChem* **2018**, *10*, 3786. Link
27. Z. Chen, E. Vorobyeva, S. Mitchell, E. Fako, M.A. Ortuño, N. López, S.M Collins, P.A Midgley, S. Richard, **G. VILÉ**, J. Pérez-Ramírez, "A heterogeneous single-atom palladium catalyst surpassing homogeneous systems for Suzuki coupling" *Nature Nanotechnol.* **2018**, *13*, 702. Link (Highlighted in *Nature Catal.*, *Science*, and *C&EN*)
28. **G. VILÉ***, "Flow Chemistry & Catalysis-Where do we stand and where do we need to go?" *Catal. Today* **2018**, *308*, 1. Link
29. D. Albani, M. Capdevila, **G. VILÉ**, S. Mitchell, N. López, J. Pérez-Ramírez, "Semi-hydrogenation of acetylene on indium oxide: proposed single-ensemble catalysis" *Angew. Chem. Int. Ed.* **2017**, *56*, 10755. Link
30. N. Almora-Barrios, **G. VILÉ**, M. Garcia-Ratés, J. Pérez-Ramírez, N. López, "Electrochemical effects at surfactant-platinum nanoparticle interfaces boost catalytic performance" *Appl. Catal.B* **2017**, *9*, 604. Link
31. D. Albani, Q. Li, **G. VILÉ**, S. Mitchell, N. Almora-Barrios, P.T. Witte, N. López, J. Pérez- Ramírez, "Interfacial acidity in ligand-modified ruthenium nanoparticles boosts the hydrogenation of levulinic acid to gamma-valerolactone" *Green Chem.* **2017**, *19*, 2361. Link (Front Cover)
32. D. Albani, **G. VILÉ**, M.A. Beltran Toro, R. Kaufmann, S. Mitchell, J. Pérez-Ramírez, "Structuring hybrid palladium nanoparticles in metallic monolithic reactors for continuous-flow three-phase alkyne hydrogenation" *React. Chem. Eng.* **2016**, *1*, 454. Link
33. M. Capdevila-Cortada, **G. VILÉ**, D. Teschner, J. Pérez-Ramírez, N. López, "Reactivity descriptors for ceria in catalysis" *Appl. Catal. B* **2016**, *197*, 299. Link
34. Z. Chen, S. Pronkin, T. Fellinger, K. Kailasam, **G. VILÉ**, D. Albani, F. Krumeich, R. Leary, J. Barnard, J.M. Thomas, J. Pérez-Ramírez, M. Antonietti, D. Dontsova, "Merging single-atom- dispersed silver and carbon nitride to a joint electronic system via copolymerization with silvertricyanomethanide" *ACS Nano* **2016**, *10*, 3166. Link
35. **G. VILÉ**, D. Albani, N. Almora-Barrios, N. López, J. Pérez-Ramírez, "Advances in the design of nanostructured catalysts for selective hydrogenation" *ChemCatChem* **2016**, *8*, 21. Link (Frontispiece)
36. D. Albani, **G. VILÉ**, S. Mitchell, P.T. Witte, N. Almora-Barrios, R. Verel, N. López, J. Pérez- Ramírez, "Ligand ordering determines the catalytic response of hybrid palladium nanoparticles in hydrogenation" *Catal. Sci. Technol.* **2016**, *6*, 1621. Link (Front Cover)
37. M. Moser, **G. VILÉ**, S. Colussi, F. Krumeich, D. Teschner, L. Szentmiklósi, A. Trovarelli, J. Pérez-Ramírez, "Structure and reactivity of ceria-zirconia catalysts for bromine and chlorine production via the oxidation of hydrogen halides" *J. Catal.* **2015**, *331*, 128. Link (Johannes A. Lercher Editor-in-Chief's Featured Article)
38. **G. VILÉ**, D. Albani, M. Nachtegaal, Z. Chen, D. Dontsova, M. Antonietti, N. López, J. Pérez- Ramírez, "A stable

single-site palladium catalyst for hydrogenations" *Angew. Chem. Int. Ed.* **2015**, *54*, 11265. Link (Front Cover; Thomson Reuters highly-cited article 2015-2017; highlighted in *Nature* and *C&EN*)

39. **G. VILÉ**, N. Almora-Barrios, N. López, J. Pérez-Ramírez, "Structure and reactivity of supported hybrid platinum nanoparticles for the flow hydrogenation of functionalized nitroaromatics" *ACS Catal.* **2015**, *5*, 3767. Link
40. **G. VILÉ**, P. Dähler, J. Vecchietti, M. Baltanás, S. Collins, M. Calatayud, A. Bonivardi, J. Pérez-Ramírez, "Promoted ceria catalysts for alkyne semi-hydrogenation" *J. Catal.* **2015**, *324*, 69. Link (Johannes A. Lercher Editor-in-Chief's Featured Article)
41. **G. VILÉ**, J. Pérez-Ramírez, "Beyond the use of modifiers in selective alkyne hydrogenation: silver and gold nanocatalysts in flow mode for sustainable alkene production" *Nanoscale* **2014**, *6*, 13476. Link (Front Cover)
42. E. Oakton, **G. VILÉ**, D. Levine, E. Zocher, D. Baudouin, C. Copéret, "Silver nanoparticles supported on passivated silica: preparation and catalytic performance in alkyne semi- hydrogenation" *Dalton Trans.* **2014**, *43*, 15138. Link
43. **G. VILÉ**, S. Colussi, F. Krumeich, A. Trovarelli, J. Pérez-Ramírez, "Opposite face sensitivity of CeO_2 in hydrogenation and oxidation catalysis" *Angew. Chem. Int. Ed.* **2014**, *53*, 12069. Link (FrontCover)
44. **G. VILÉ**, S. Wrabetz, L. Floryan, M.E. Schuster, F. Girgsdies, D. Teschner, J. Pérez-Ramírez, "Stereo and chemoselective character of supported CeO_2 catalysts for continuous-flow three- phase alkyne hydrogenation" *ChemCatChem* **2014**, *6*, 1928. Link
45. **G. VILÉ**, N. Almora-Barrios, S. Mitchell, N. López, J. Pérez-Ramírez, "From the Lindlar catalyst to supported ligand-modified palladium nanoparticles: selectivity patterns and accessibility constraints in the continuous-flow three-phase hydrogenation of acetylenic compounds" *Chem. Eur. J.* **2014**, *20*, 5926. Link (Front Cover; Thomson Reuters highly-cited article; highlighted in ChemistryViews and *Org. Chem. Highlights*)
46. J. Carrasco, **G. VILÉ**, D. Fernández-Torre, R. Pérez, J. Pérez-Ramírez, M.V. Ganduglia- Pirovano, "Molecular-level understanding of CeO_2 as a catalyst for partial alkyne hydrogenation" *J. Phys. Chem. C* **2014**, *118*, 5352. Link (Front Cover)
47. Q.M. Kainz, R. Linhardt, R. Grass, **G. VILÉ**, J. Pérez-Ramírez, W.J. Stark, O. Reiser, "Palladium nanoparticles supported on magnetic carbon-coated cobalt nanobeads: highly active and recyclable catalysts for alkene hydrogenation" *Adv. Funct. Mater.* **2014**, *24*, 2020. Link
48. **G. VILÉ**, D. Baudouin, I.N. Remediakis, C. Copéret, N. López, J. Pérez-Ramírez, "Silver nanoparticles for olefin production: New insights into the mechanistic description of propyne hydrogenation" *ChemCatChem* **2013**, *5*, 3750. Link (Spotlighted in *Angew. Chem. Int. Ed.*)
49. **G. VILÉ**, B. Bridier, J. Wichert, J. Pérez-Ramírez, "Ceria in hydrogenation catalysis: high selectivity in the conversion of alkynes to olefins" *Angew. Chem. Int. Ed.* **2012**, *51*, 8620. Link (Highlighted in *Chimia*)
50. D. Verboekend, **G. VILÉ**, J. Pérez-Ramírez, "Mesopore formation in USY and beta zeolites by base leaching: selection criteria and optimization of pore-directing agents" *Cryst. Growth Design* **2012**, *12*, 3123. Link
51. D. Verboekend, **G. VILÉ**, J. Pérez-Ramírez, "Hierarchical Y and USY zeolites designed by post-synthetic strategies" *Adv. Funct. Mater.* **2012**, *22*, 916. Link (Front Cover; highlighted in *Chemie*)

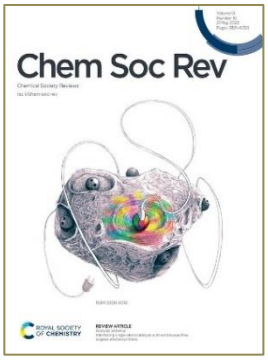
OTHER PUBLICATIONS (* denotes publications with the corresponding authorship)

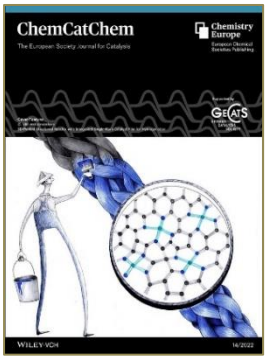
1. M. Patrascu, **G. VILÉ**, Q. Xiong, M. Bracconi, D.V. Pinjari, M.O. Coppens, "Voices of the next generation of Process Intensification" (editorial), *Chem. Eng. Process.* **2023**, *191*, 109445.
2. **G. VILÉ***, B. Qiao, "Supported Metal Single Atom Catalysis. Edited by Philippe Serp and Doan Pham Minh" (book review), *ChemCatChem* **2022**, *15*, e202300020.
3. V.B. Saptal, S.M. Gade, **G. VILÉ**, J. Walkowiak, B.M. Bhanage, "Organocatalytic reductive functionalization of carbon dioxide" (book chapter) in "Sustainable Utilization of Carbon Dioxide - From Waste to Product" (Eds: M. Jawaid, A. Khan), Springer Nature **2023**.
4. **G. VILÉ***, "Silica-based materials as catalysts or supports in solvent-free organic reactions" (book chapter) in

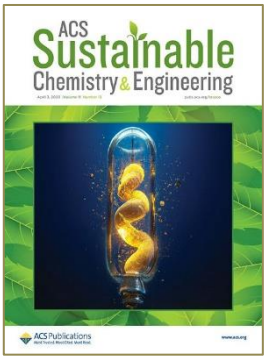
"Solvent-free Methods in Nanocatalysis: From Catalyst Design to Applications" (Eds: R. Luque, M.B. Gawande, E. Doustkhah, A. Goswami), Wiley **2023**.

5. **G. VILÉ***, "Synthesis of surface-modified nanomaterials" (book chapter) in "Surface Modified Nanomaterials for Applications in Catalysis" (Eds: M.B. Gawande, C.M. Hussain, Y. Yamauchi), Elsevier **2022**, pages 53-71.
6. A. Sivo, J. Ilare, M. Maraldi, N. Manfredini, J. M. G. Alcântara, D. Moscatelli, **G. VILÉ***, "Flow chemistry and single-atom catalysis: resources for a sustainable pharmaceutical industry" *La Chimica e l'Industria.* **2021**, *5*, 48.
7. **G. VILÉ***, "The transformation of the chemical and advanced materials industry" (opinion map), *World Economic Forum* **2020**.
8. **G. VILÉ***, "Chimica in flusso: microreattori e sostenibilità" (news and views), *Scienza in Rete* **2020**.
9. **G. VILÉ***, "A panel discussion on flow catalysis" (editorial) *Chim. Oggi - Chem. Today* **2020**, *38*, 14.

JOURNAL FRONT COVERS







CONFERENCES AND PRESENTATIONS

I was invited to deliver **68 talks at conferences, universities, and industrial departments**, including **49 keynote or invited talks**.

As a **selection**, I was the **keynote/featured speaker** at:

- International workshop on Single Atom Catalysis (jointly organized by the Leibniz Institute for Catalysis, the University of Antwerp, the University of Oslo, and the Flemish Academy of Science), 2023
- Flow Chemistry Europe 2022 (& 2024)
- Innovations in API Manufacture 2022 and Flow Chemistry Summit 2022
- ChemCat 2021, USA, 2021
- European Symposium in Flow Chemistry, University of Cambridge, UK, 2020

Among my **oral talks**, I would like to highlight:

- 14th European Congress of Chemical Engineering (ECCE&ECAB), Berlin, 2023
- 15th European Congress on Catalysis, Prague, 2023 (**oral talk + 2 sessions chaired**)
- 28th North American Catalysis Meeting, Providence, 2023
- 27th International Symposium on Chemical Reaction Engineering, Montreal, 2023
- 27th North American Catalysis Meeting, New York, 2022 (**oral talk + 1 session chaired**)
- 13th European Congress of Chemical Engineering (ECCE&ECAB), virtual, 2021
- 24th International Conference on Chemical Reactors (ChemReactor-24), 2021
- AIChE Annual Meeting, 2019 and 2022
- RSC Automated Synthesis Forum, Glasgow, UK, 2019
- 6th International Conference on Structured Catalysts and Reactors, Germany, 2019
- 2nd International Symposium on Synthesis and Catalysis, Evora, 2019
- 2nd International Symposium on Nanoparticles, Nanomaterials & Applications, Lisbon, 2016
- 24th North American Catalysis Meeting, Pittsburg, USA, 2015
- 9th European Congress on Catalysis, Lyon, 2013 (**Talk highlighted** in *Platinum Metals Review*)

Among my **plenary/department lectures at major universities**, I would like to highlight:

- University of Antwerp, Belgium, 2023
- Stockholm University, Sweden, 2023
- Leibniz Institute for Catalysis, Germany, 2022
- Ghent University, Belgium, 2022
- University of Stuttgart, Germany, 2021 & 2023
- Dalian University of Technology, China, 2019
- University of California at Berkeley, USA, 2018

- National University of Singapore, Singapore, 2018
- Nanyang Technological University, Singapore, 2018
- Delft University of Technology, Netherlands, 2018

Among the **seminars to industrial R&D departments**, I would like to highlight:

- Bayer CropScience, Germany, 2023
- Procos Pharmaceuticals, Italy, 2021
- Bracco Pharmaceuticals, Italy, 2020
- Syngenta, Switzerland, 2018
- Idorsia Pharmaceuticals, Switzerland, 2018 & 2019
- Actelion Pharmaceuticals, Switzerland, 2016

MOST IMPORTANT MEDIA AND RADIO APPEARANCE

1. " Sostenibilità, un nuovo catalizzatore permette processi chimici più efficienti ed eco-compatibili", *Le Scienze* (Italian version of Scientific American), July **2023**.
2. "Strategic Intelligence Co-curator Community", World Economic Forum, January **2021**.
3. "10 voci per 10 anni #FondazioneBracco", Youtube, July 2020.
4. Tg1 Ra1, July 2020.
5. "Il premio Felder riporta in Italia un 'cervello'", *Affaritaliani* and *Il Giorno*, July **2020**.
6. "Il futuro torna a casa", *Corriere della Sera*, June **2020**.
7. "Il premio Felder riporta in Italia Vilé, ormai ex 'cervello in fuga'", *Affaritaliani*, June **2020**.
8. "Ecological synthesis of pharmaceutically relevant compounds", *Lab Manager* and *NewsBreak*,May **2020**.
9. "Tens of thousands of atoms replaced by one", *Nature*, September **2015**. (our article in Angew. Chem. Int. Ed. was highlighted in **Nature News & Views**)