Jenny G. Vitillo, Ph. D.

PERSONAL INFORMATION

Name	Jenny G. Vitillo
Academic Title	Dr. (Ph. D. in Materials Science)
ORCID	0000-0002-6213-2039
Researcher ID	L-3074-2013
Present appointment	Associate Professor
Affiliation	Department of Science and High Technology University of Insubria Como, Italy
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RESEARCH INTERESTS

Main project	**Iron-based metal organic framework catalysts for C-H bond activation**
(not) Secondary interests	**Carbon dioxide capture and separation** **Hydrogen storage** in all the classes of materials Spectroscopic characterization of encapsulated dyes in microporous materials for **light harvesting** Metal organic materials synthesis
Scientific skills	Broad experience in the use of both **experimental** and **computational** techniques for the characterization of materials and of their interaction with molecules for catalysis and gas adsorption. Large experience in the simulation aimed to the assignment of IR and Raman spectra of molecular probes interacting with material surfaces. Deep knowledge of the use of **volumetric** techniques (liquid nitrogen adsorption) for the textural characterization of materials and for the measure of their gas and vapour capacity in both *supra* and *sub* atmospheric pressure conditions. **Computational** skills: • **quantum-mechanical methods** for ground state (density functional and wave function based multireference methods) and TD-DFT methods for excited states (Gaussian 09, CRYSTAL 09). In particular, *simulation of reaction profiles* and *the IR spectra* of probe molecules (CO, H_2 and CO_2) on the materials surface with application in catalysis (Cr-based polymerization catalysts) and in the *hydrogen and carbon dioxide storage* fields. • **molecular mechanics** methods (GULP, Discover and Sorption programs). *Dihydrogen adsorption* in zeotype materials and estimation of the *theoretical surface area* and pore size distribution.

- programming languages: elementary skills of Fortran90 and AWK.

Experimental skills:

- gas phase **microcalorimetry** (experience made on a Tian-Calvet calorimeter by Setaram, F equipped with volumetric apparatus and a C80 calorimeter, Setaram, F). Differential heat of adsorption of CO_2, NO and CO on *metal organic frameworks* and catalysts.
- **volumetry** of adsorption in both low (ASAP2020Chemi Micromeritics) and high (PCI unit of Advanced Materials Corporation, Pittsburgh, PA and PCT Pro unit of Setaram, Lyon, F) pressure ranges. *Surface area* and pore size distribution estimation through N_2 measurements. *H_2 and CO_2 storage capacity of zeolites, carbons, metal-organic frameworks, metal and complex hydrides*.
- high-pressure **gravimetry** of adsorption in a wide temperature and pressure range (IGA-002 by Hiden, UK). *H_2 and CO_2 storage capacity of zeolites, carbons, metal-organic frameworks, metal and complex hydrides*.
- Thermogravimetric analysis (**TGA**). Thermal stability of materials.
- Hands-on experience with the manipulation and synthesis of air-sensitive compounds using inert atmosphere **glove box**.
- **XRPD** analysis (PW3040/60 X'Pert PRO MPD from PANalytical) in Bragg-Brentano and Debye-Sherrer (capillary sealed in inert atmosphere) geometries. X-ray patterns of microporous materials for quality control in the synthesis and estimation of their chemical and thermal structural stability. Determination of intermediates in *complex hydrides dehydrogenation*.
- FTIR in transmission, ATR-FTIR and UV-Vis spectroscopies in the homogeneous phase.
- FTIR and UV-Vis spectroscopies (absorbance and emission) in heterogeneous phase.
- SEM microscopy.
- Zeolites and MOFs synthesis by hydrothermal techniques.
- Organometallic compound synthesis in controlled atmosphere (Fe(II) complexes).

Professional skills

Skills in national and international projects drawing up.
Marketed research by presenting at international conferences and publishing in peer-reviewed journals.
Creative solutions to problems.
Experienced researcher in the energy and environment science.
Comfortable communicating with international scientists.

EDUCATION (including Degree obtained)

18/11/2005 **Ph. D. in Materials Science and Technology**
Università degli Studi di Torino, Italy.
Field: Materials for hydrogen storage.
Thesis Title: "A theoretical and experimental study of molecular interactions involved in hydrogen storage in porous materials". Scientific Supervisor: Dr. G. Ricchiardi

30/09/2002 **M.S. in Materials Science** with 110/110 cum laude, mention, and dignity of publication.

	Università degli Studi di Torino, Italy. Field: Heterogeneous catalysis. Thesis Title: "Quantum mechanical modelization of Cr(II) sites on silica active in the ethylene polymerization". Scientific Supervisor: Prof. C. Lamberti.
14/07/1997	High School "Liceo Scientifico" (Scientific High School) Diploma with 60/60 Liceo scientifico Statale Galileo Ferraris, Torino, Italy

ACADEMIC CAREER

01/12/2021-today	**Associate professor**, Department of Science and High Technology, University of Insubria, Como, Italy.
01/12/2018-30/11/2021	**Assistant professor** (RTDB), Department of Science and High Technology, University of Insubria, Como, Italy.
28/04/2017-30/11/2018	**Post-Doc Associate** at the University of Minnesota, MN. Scientific Supervisors: Prof. L. Gagliardi and Prof. C. Lu.
01/04/2016-31/03/2017	**Post-Doc Fellowship** at the University of Torino, Torino, Italia Title: "Separation and storage of gases for energy technologies", Scientific Supervisor: Prof. S. Bordiga.
29/07/2015-08/11/2015	**Visiting Scholar** at UC Berkeley, CA (Department of Chemistry, Jeffrey R. Long) Topic of the research: Synthesis of metal organic frameworks for CO_2 separation.
22/03/2013-23/03/2016	**Post-Doc Fellowship** at the University of Insubria, Como, Italia Title: "ImPACT: Nanostructured systems confined in zeolite matrices".
04/01/2012-15/03/2013	**Post-Doc Fellowship (Tecnico, categoria DI)** at the University of Torino, Italia Title: "Combined use of spectroscopic, gravimetric and volumetric techniques in high pressure conditions (> 10 bar) for the characterization of materials for gas storage purposes"
01/02/2009-31/12/2011	**Post-Doc Fellowship** at the University of Torino, Italia Title: "Microporous materials of organic or organic-inorganic nature for gas adsorption and separation", Scientific Supervisor: Prof. A. Zecchina.
01/01/2009-31/01/2009	**Post-Doc Fellowship** at the University of Torino, Italia Title: "Metal-organic frameworks for the storage and separation", Scientific Supervisor: Prof. S. Bordiga.
01/01/2007-31/12/2008	**Post-Doc Fellowship** at the University of Torino, Italia Title: "Synthesis and characterization of new composites BHxNHx as materials for hydrogen storage and advanced technological uses", Scientific Supervisor: Prof. D. Scarano.
01/11/2006-31/12/2006	**Post-Doc Fellowship** at the University of Torino, Italia Title: "Microgravimetry as technique for the study of materials stability and their adsorption capacities", Scientific Supervisor: Dr. G. Ricchiardi.
01/11/2005-31/10/2006	**Post-Doc Fellowship** at the University of Torino, Italia Title: "Composites based on carbon and/or ceramic fibres", Scientific Supervisor: Prof. A. Zecchina.

SCIENTIFIC AWARDS AND RECOGNITIONS

2020	**Poster prize** for Poster for Porous MaterialsConference, RSC Porous Materials Group poster conference #RSCPMGPoster, Twitter, 23-24 July 2020.
2017	**Scientific National Qualification** for the participation to the selections for associate professor positions in the sector 03/A2, and 03/B1
2016	3rd place as individual participant in the 2016 ChemSearch Challenge in Organic Chemistry (organizer: Elsevier, 163 participants).
2013	Funding by the Italian Government of the FIRB 2012 project **(Italian Starting Grant)**, "ImPACT, Impose Pressure and Change Technology" (RBFR12CLQD_003, proposers: Prof. GD. Gatta, Dr. R. Arletti and Dr. JG. Vitillo).
2013	**Scientific National Qualification** for the participation to the selections for associate professor positions in the sector 03/B2 (CHIM/07).
2013	1st place in the international Photo Contest for the oldest instrument still in operation sold by Setaram (organizer: Setaram, France).
2012	**Winner of the selection** for the participation to the "2012 MRS Spring Meeting Forum on the Many Facets of Sustainable Development", April 9, 2012, San Francisco, California (organizer: MRS).
2010	**Winner of the selection** for the participation to the "2011 World Materials Summit", October 8-12, 2011, Washingon D.C., USA (50 participants) (organizer: MRS).

SCIENTIFIC PRODUCTION

Papers	**94papers** (on ISI journals), 25 as first author and 23 as corresponding author. (contate fino a 93 incluso). Four of her articles have received more than 300 citations each.
h-index	34 (based on the ISI WoS database)
Book	2 chapter as co-author
Contributons to congresses	About 150 contributions to national and international congresses. Participation to 65 national and international congresses. JGV has provided **24 oral communications**, 18 in international (1 invited presentation, 2 invited key-note lectures) and 6 in national congresses. Chairman in three international congresses.
Organization of congresses/conferences/ schools	Organizing Committee member for: 1) the international workshop "NIS colloquium. Harnessing the Power of Light in Hybrid Materials", Torino, Italy (October 6th-7th, 2016) 2) F18 Joint Panel Session "Materials Needs for Energy Sustainability by 2050: Practical Solutions to Tackle Climate Change" at the 2018 MRS Fall Meeting and Exhibit, Boston (November 30th, 2018). Leader of the Organizer Committee for: 1) ET-14 symposium "Materials Science Facing Global Warming—Practical Solutions for Our Future" at the 2018 MRS Fall Meeting and Exhibit, Boston (November 25th-30th, 2018). 2) "Global Women Breakfast" organized by IUPAC100, Como section (February 12th, 2019). 3) "Global Women Breakfast" organized by IUPAC, Como section (February 12th, 2020). 4) "Global Women Breakfast" organized by IUPAC, Como section (February 16th,

	2022).
Editorial activity	Guest editor for the special issue of Chem. Rev. "Carbon Capture and Separation" (2017) and of a special issue of MRS Adv. (2018). Member of the Editorial Board for DOE EFRC newsletter (2017-2018). Review editor of "Frontiers in Energy Research", for the section "Carbon Capture, Storage, and Utilization". Editorial Board Member of "Applied Sciences" (MDPI journals).
Experiments at Large Scale Facilities	JGV has participated as experimentalist to 6 experiments officially approved by an international board of experts at ESRF Synchrotron in Grenoble (F) and 1 at HZG-BESSY-II in Berlin (D). JGV has also been the **main proposer** of 2 of them.

SELECTED PUBLICATIONS

- "Magnesium-based systems for carbon dioxide capture, storage and recycling: from leaves to synthetic nanostructured materials", *RSC Adv.*, **5**, 36192 - 36239 (2015). *[invited paper] [40 citation for ISI WoS]*
- "Tailoring MOFS for CO_2 capture: the amino-effect", *ChemSusChem*, **4**, 1281 (2011). *[50 citation for ISI WoS]*
- ""H_2 storage in isostructural UiO-67 and UiO-66 MOFs", *Phys. Chem. Phys. Chem.*, **14**, 1614 (2011). *[285 citation for ISI WoS]*
- "Role of exposed metal sites in hydrogen storage in MOFs", *J. Am. Chem. Soc.* **130**, 8386 (2008). *[324 citation for ISI WoS]*
- "Theoretical maximal storage of hydrogen in zeolitic frameworks", *PCCP*, **7**, 3948 (2005). *[79 citation for ISI WoS]*
- "Quantum Chemical Characterization of Structural Single Fe(II) Sites in MIL-Type Metal–Organic Frameworks for the Oxidation of Methane to Methanol and Ethane to Ethanol.", ACS Catal., 9, 2870-2879 (2019). *[28 citation for ISI WoS]*

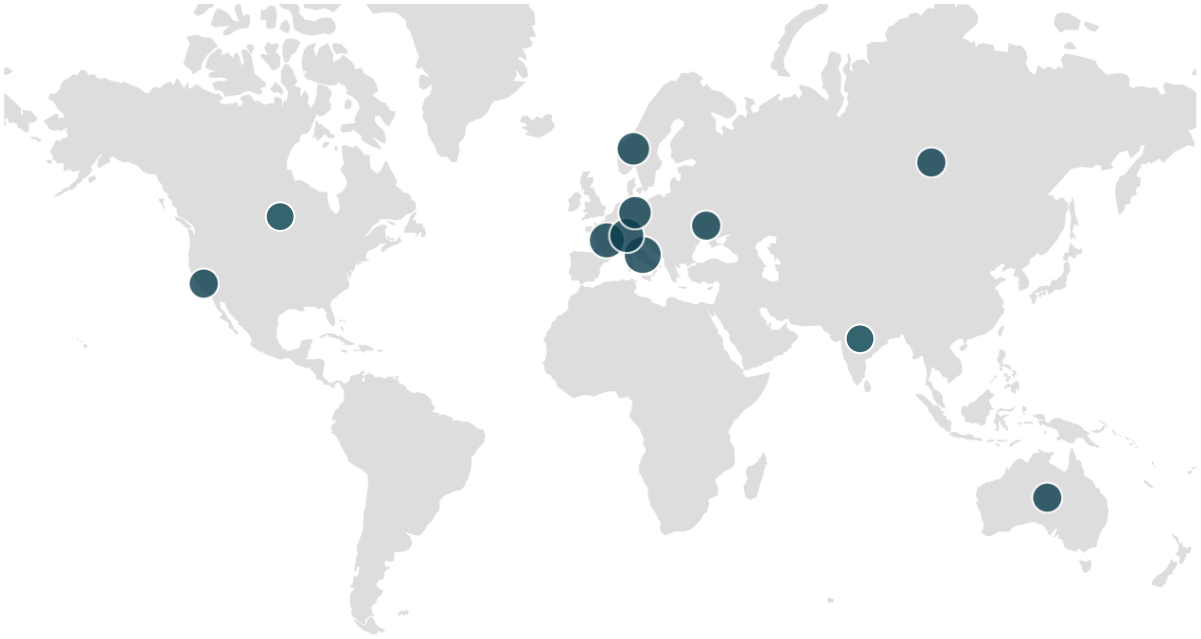
CURRENT MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- American Chemical Society
- Royal Society of Chemistry (MRSC).

COLLABORATIONS

- University of Minnesota (prof. C. C. Lu, prof. A. Bhan) *[modeling, design and synthesis of catalysts based on metal organic frameworks]*
- University of Chicago (prof. L. Gagliardi) *[modeling, design and synthesis of catalysts based on metal organic frameworks]*
- Ecole Polytechnique Fédérale de Lausanne, Sion, Switzerland (prof. B. Smit, C. P. Ireland)
- University of Stavanger, Norway (Prof. O. Zavorotynska) *[complex hydrides]*
- IFE, Kjellar, Norway (Dr. B. Hauback, Dr. S. Deledda, Dr. C. Frommen) *[complex hydrides]*
- UC Berkeley, CA (prof. J.R. Long) *[MOFs and CO_2 separation]*
- Chennai Institute of Technology, India (prof. J. Ethiraj) *[3D printing]*
- University of Nottingham, UK (prof. A. Laybourn), LUMS, Pakistan (prof. Muhammad Zaheer) *[MOFs]*
- Università dell'Insubria, Como (prof. E. Fois, Dr. G. Tabacchi) *[light harvesting]*

This map shows the world distribution of co-authors in JGV publications.



PROJECTS

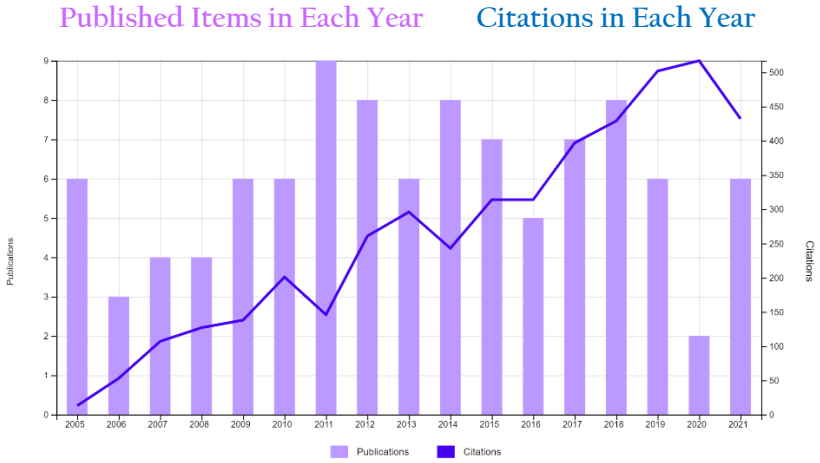
Project title	Funding Agency	Role	Duration (months)
Individual fundings			
Funding for a research assistant applying to an internal competitive call. 2021. Funding: 23k€. Synthesis and catalysis of Cu-based materials.	UNINSUBRIA	Proponent	12
Grant for the international mobility of professors for visiting period in extra UE countries for research purposes 2021. Funding: 2.5 k€. Synthesis of functionalized Fe-based MOFs.	UNINSUBRIA	Proponent	2
Grant for the international mobility of professors for visiting period in extra UE countries for research purposes 2020. Funding: 2.5 k€. Synthesis of functionalized Fe-based MOFs.	UNINSUBRIA	Proponent	2
FIRB 2012 - PROGRAMMA "FUTURO IN RICERCA" "ImPACT: Impose Pressure And Change Technology - Sistemi nanostrutturati confinati in matrici zeolitiche"	MIUR	Proponent	36
Tomorrow project "DSSC-MOF"	UNITO	Proponent	12
Post-doctoral grant 2009	Regione Piemonte		24
Post-doctoral grant 2007	INSTM		24
PhD studentship grant 2002	MIUR		36
Projects where JGV has played an important role in the proposal preparation			
VII EU-Framework Program, FCH JU platform (Fuel Cells and Hydrogen Joint Undertaking), "Fuel Cell Coupled Solid State Hydrogen Storage Tank" (SSH2S).	UE	Participant	42
Projects where JGV has played an active role			
Energy Frontier Research Center, DE-SC0012702: Inorganometallic Catalyst Design Center (ICDC)	U.S. DOE	Participant	48
Nanoporous Materials Genome Center (NMGC, Materials Genome Initiative, US DOE funds). Participant.	U.S. DOE	Participant	24
VI EU-Framework Program NMP3-CT-2005-011730 - Integrated Design of Catalytic Nanomaterials for a Sustainable Production (IDECAT)	UE	Participant	60
VI EU-Framework Program NMP-4: Contract Number 033335 - Functional Metal Organic Framework as Heterogeneous Catalysts (MOFCAT)	UE	Participant	36
VII EU-Framework Program: "Advanced Materials and Electric Swing Adsorption Process for CO_2 Capture", Project ID: 608534 - Advanced (MATESA)	UE	Participant	36
7. European COST programme, COST Action MP1202: HINT (Rational design of hybrid organic-inorganic interfaces:the next step towards advanced functional materials)	UE	Participant	36

COFIN-LAB Centri di eccellenza 2006 for NIS "Nanostructured interfaces and surfaces" Centre of Excellence: administered by Scientific Committee.	MIUR/Compagnia di San Paolo	Participant	72
VII EU-Framework Program NMP-2008-2.4-1 "Inorganic-Organic Hybrid Materials"; Call identifier: 228604. "Nanoporous Metal-Organic Frameworks for production" (NANOMOF)	UE	Participant	48
VII EU-Framework Program, FCH JU platform (Fuel Cells and Hydrogen Joint Undertaking) - Novel H_2 storage materials for stationary and portable applications – (BOR4STORE)	UE	Participant	36
PRIN 2012 "Mechanisms of CO_2 activation for the design of new materials for energy and resource efficiency".	MIUR	Participant	36
NANOMAT PROJECT Docup 2000–2006	Regione Piemonte	Participant	24

LIST OF PUBLICATIONS

ISI-indexed journals

In the period 2005-2021, Jenny G. Vitillo has published 93 papers in international peer-reviewed journals. Among top journals of different disciplines: **(a) Chemistry**: *Chem. Rev. (1)*, *J. Am. Chem. Soc. (4)*, *Nature Commun. (1)*, *ChemSusChem (3)*, *Chem. Comm. (1)*, *Mater. Chem. Front. (1)*, *Appl. Catal. B: Environm. (1)*, *J. Phys. Chem. C (14)*, *Langmuir (1)*, *Phys. Chem. Chem. Phys. (14)*, *Dalton Trans. (4)*, *J. Phys. Chem. B (1)*, *J. Phys. Chem. A (2)*, *Energies (1)*; **(b) Catalysis**: *ACS Catal (2)*, *Catal. Today (2)*; **(c) Materials Science**: *Adv. Mater. (1)*, *Chem. Mater. (8)*, *J. Mater. Chem. A (1)*, *Inorg. Chem. (2)*, *RSC Adv. (2)*, *ACS Appl. Mater. Interfaces (2)*, *Macromolecules*, *Int. J. Hydrogen En. (4)*, *Carbon (1)*, *J. Alloy. Compd. (2)*; **(d) Earth Science**: *Eur. J. Mineral. (1)*, *Appl. Geochem. (1)*.



Results found	101
Sum of the times cited	4493
without self-citations	4249
Average citations per item	44.49
h-index	34

The list of the publications is reported in the following. In parenthesis, the experimental/computational contribution of JGV in each publication is explicitated.
[*] = JGV is the corresponding author. † = co-first authors.

1. "Theoretical characterization of dihydrogen adducts with alkaline cations", J. G. Vitillo, A. Damin, A. Zecchina, G. Ricchiardi, *J. Chem. Phys.*, **122**, 114311-(1-10)(2005). *[M+/H_2 complexes theoretical characterization and derivation of the classical electrostatic equation]*
2. "Liquid Hydrogen in Protonic Chabazite", A. Zecchina, S. Bordiga, J. G. Vitillo, G. Ricchiardi, C. Lamberti, G. Spoto, M. Bjørgen and K.P. Lillerud, *J. Am. Chem. Soc.*, **127**, 6361-6366(2005). *[N_2 and H_2 volumetric measurements]*
3. "Hydrogen storage in Chabazite frameworks", L. Regli, A. Zecchina, J. G. Vitillo, D. Cocina, G. Spoto, C. Lamberti, K. P. Lillerud, U. Olsbye, and S. Bordiga, *Phys. Chem. Chem. Phys.*, **7**, 3197-3203 (2005). *[N_2 and H_2 volumetric measurements]*
4. "Interaction Of Hydrogen Within MOF-5", S. Bordiga, J. G. Vitillo, G. Ricchiardi, L. Regli, D. Cocina, A. Zecchina, B. Arstad, M. Bjørgen, J. Hafizovic, K. P. Lillerud, *J. Phys. Chem. B*, **109**, 18237-18242 (2005) *[H_2 volumetric measurements; electrostatic potential map of MOF-5]*.
5. "Theoretical maximal storage of hydrogen in zeolitic frameworks", J. G. Vitillo, G. Ricchiardi, G. Spoto, and A. Zecchina, *Phys. Chem. Chem. Phys.*, **7**, 3948–3954 (2005). *[H_2/H_2 force field derivation and molecular mechanics calculations of H_2 in the different zeotypes]*
6. "The role of surfaces in hydrogen storage", G. Spoto, S. Bordiga, J. G. Vitillo, G. Ricchiardi, A. Zecchina, "Proceedings of the 3rd International Workshop on Oxide Based Materials: New Sources, Novel Phases, New Applications", *Stud. Surf. Sci. Catal.*, **155**, 481-492 (2005).
7. "Local structure of framework Cu(II) in HKUST-1 metallorganic framework: spectroscopic characterization upon activation and interaction with adsorbates", C. Prestipino, L. Regli, J. G. Vitillo, F.

Bonino, A. Damin, C. Lamberti, A. Zecchina, P. L. Solari, K. O. Kongshaug, S. Bordiga, *Chem. Mater.*, **18**, 1337-1346 (2006). *[N_2 and H_2 volumetric measurements]*

8. "Theoretical characterization of dihydrogen adducts with halide anions" J. G. Vitillo, A. Damin, A. Zecchina, G. Ricchiardi, *J. Chem. Phys.*, **124**, 224308 (1-12) (2006). *[X^-/H_2 complexes theoretical characterization and derivation of the classical electrostatic equation]*
9. "Plate-like ZnO microcrystals: synthesis and characterization of a material active toward hydrogen absorption" D. Scarano, F. Cesano, S. Bertarione, J. G. Vitillo, A. Zecchina, *Catal. Today*, **116**, 433-438 (2006). *[synthesis of ZnO crystals]*
10. "Interaction of H_2 with alkali metal exchanged zeolites: a quantum mechanical study", F. J. Torres, J. G. Vitillo, B. Civalleri, G. Ricchiardi and A. Zecchina, *J. Phys. Chem. C*, **111**, 2505-2513 (2007). *[cluster calculations]*
11. [*] "H_2 adsorption and ortho-para conversion on ETS-10", **J. G. Vitillo**, D. Cocina, E. N. Gribov, G. Ricchiardi, A. Zecchina and G. Spoto, "Proceedings of the 15th International Zeolite Conference, 12-17 August, 2007, Beijing, China", *Stud. Surf. Sci. Catal.*, Editors: Ruren Xu, Zi Gao, Jiesheng Chen and Wenfu Yan, **170A**, 893-901 (2007). *[computational work]*
12. "FTIR spectroscopy and thermodynamics of hydrogen adsorbed in a cross-linked polymer", G. Spoto, J. G. Vitillo, D. Cocina, A. Damin, F. Bonino and A. Zecchina, *Phys. Chem. Chem. Phys.*, **9**, 4992-4999 (2007). *[N_2 volumetric adsorption, H_2 adsorption by means of microbalance, cluster calculations]*
13. "Direct observation and modelling of ordered hydrogen adsorption and catalyzed ortho-para conversion on ETS-10 titanosilicate material", G. Ricchiardi, J. G. Vitillo, D. Cocina, E. N. Gribov, and A. Zecchina, *Phys. Chem. Chem. Phys.*, **9**, 2753 - 2760 (2007). *[contribution to the IR measurements, molecular mechanical calculations]*
14. "Role of exposed metal sites in hydrogen storage in MOFs", J. G. Vitillo, L. Regli, S. Chavan, G. Ricchiardi, G. Spoto, P. D. C. Dietzel, S. Bordiga, and A. Zecchina, *J. Am. Chem. Soc.*, **130**, 8386–8396 (2008). *[electrostatic potential maps, N_2 volumetric characterization, VTIR analysis of the IR spectra, main role in the critical reviewing of the results]*
15. "Local structure of CPO-27-Ni metallorganic framework upon dehydration and coordination of NO", F. Bonino, S. Chavan, J. G. Vitillo, E. Groppo, G. Agostini, C. Lamberti, P. D. C. Dietzel, C. Prestipino and S. Bordiga, *Chem. Mater.*, **20**, 4957–4968 (2008). *[NO microcalorimetry and electrostatic potential maps]*
16. "Exploring the chemistry of electron accepting molecules in the cavities of the basic microporous P4VP polymer by in situ FTIR spectroscopy", E. Groppo, M. J. Uddin, O. Zavorotynska, A. Damin, J. G. Vitillo, G. Spoto, A. Zecchina, *J. Phys. Chem. C*, **112**, 19493-19500 (2008). *[N_2 volumetric adsorption, cluster calculations]*
17. "Oriented TiO_2 nanostructured pillar arrays: synthesis and characterization", F. Cesano, S. Bertarione, A. Damin, G. Agostini, S. Usseglio, J. G. Vitillo, C. Lamberti, G. Spoto, D. Scarano, and A. Zecchina, *Adv. Mater.*, **20**, 3342-3348 (2008). *[N_2 volumetric characterization]*
18. "Chromocene in porous polystyrene: an example of organometallic chemistry in confined spaces", J. Estephane, E. Groppo, J. G. Vitillo, A. Damin, C. Lamberti, S. Bordiga and A. Zecchina, *Phys. Chem. Chem. Phys.*, **11**, 2218–2227 (2009). *[N_2 volumetric characterization, microcalorimetric measurements, cluster calculations]*
19. "Structure and enhanced reactivity of chromocene carbonyl confined inside the cavities of NaY zeolite", J. Estephane, E. Groppo, A. Damin, J. G. Vitillo, D. Gianolio, C. Lamberti, S. Bordiga, C. Prestipino, S. Nikitenko, E. A. Quadrelli, M. Taoufik, J. M. Basset and A. Zecchina, *J. Phys. Chem. C*, **113**, 7305-7315 (2009). *[cluster calculations]*
20. "CO adsorption on CPO-27-Ni coordination polymer: spectroscopic features and interaction energy", S. Chavan, J. G. Vitillo, E. Groppo, F. Bonino, C. Lamberti, P. D. C. Dietzel, and S. Bordiga, *J. Phys. Chem. C*, **113**, 3292-3299 (2009). *[microcalorimetry]*
21. [*] "Stability and reactivity of grafted $Cr(CO)_3$ species on MOF linkers: a computational study", **J. G. Vitillo**,* E. Groppo, S. Bordiga, S. Chavan, G. Ricchiardi and A. Zecchina, *Inorg. Chem.*, **48**, 5439–5448 (2009).*[cluster models calculations and analysis]*

22. "Modeling CO and N_2 adsorption at Cr surface species of Phillips catalyst by hybrid density functionals: effect of Hartree-Fock exchange percentage", A. Damin, J. G. Vitillo, G. Ricchiardi, S. Bordiga, C. Lamberti, E. Groppo, A. Zecchina, *J. Phys. Chem. A*, **113**, 14261–14269 (2009). *[contribution to the theoretical characterization]*

23. "Response of CPO-27-Ni towards CO, N_2 and C_2H_4", S. Chavan, F. Bonino, J. G. Vitillo, E. Groppo, C. Lamberti, P. D. C. Dietzel, A. Zecchina and S. Bordiga, *Phys. Chem. Chem. Phys.*, **11**, 9811 - 9822 (2009). *[volumetric measurements]*

24. "A multi-technique approach to spin-flips in $Cp_2Cr(II)$ chemistry in Confined State", J. Estephane, E. Groppo, J. G. Vitillo, A. Damin, D. Gianolio, C. Lamberti, S. Bordiga, E. A. Quadrelli, J. M. Basset, G. Kervern, L. Emsley, G. Pintacuda, and A. Zecchina, *J. Phys. Chem. C*, **114**, 4451–4458 (2010). *[cluster calculations]*

25. "Direct evidence of adsorption induced Cr^{II} mobility on the SiO_2 surface upon complexation by CO", D. Gianolio, E. Groppo, J. G. Vitillo, A. Damin, S. Bordiga, A. Zecchina, C. Lamberti, *Chem. Comm.*, **46**, 976–978 (2010).

26. "Storage of Hydrogen as a Guest of a Nanoporous Polymeric Crystalline Phase", S. Figueroa-Gerstenmaier, C. Daniel, G. Milano, G. Guerra, J. G. Vitillo, A. Zecchina, O. Zavorotynska, G. Spoto, *Phys. Chem. Chem. Phys.*, **12**, 5369-5374 (2010). *[H_2 gravimetric measurements]*

27. "Functionalization of UiO-66 metal-organic framework and highly cross-linked polystyrene with $Cr(CO)_3$: in situ formation, stability, and photo-reactivity ", S. Chavan, J. G. Vitillo, M. J. Uddin, F. Bonino, C. Lamberti, E. Groppo, K. P. Lillerud, S. Bordiga, *Chem. Mater.*, **22**, 4602–4611 (2010). *[cluster calculations]*

28. "FTIR spectroscopy and thermodynamics of CO and H_2 adsorbed on γ-, δ- and α-Al_2O_3", E. N. Gribov, O. Zavorotynska, G. Agostini, J. G. Vitillo, G. Ricchiardi, G. Spoto and A. Zecchina, *Phys. Chem. Chem. Phys.*, **12**, 6474-6482 (2010).

29. "Hydrogen Adsorption by δ and ε Crystalline Phases of Syndiotactic Polystyrene Aerogels", S. Figueroa-Gerstenmaier, C. Daniel, G. Milano, J. G. Vitillo, O. Zavorotynska, G. Spoto,G. Guerra, *Macromolecules*, **43**, 8594–8601 (2010). *[gravimetric measurements]*

30. "Role of extraframework metal sites for hydrogen adsorption into the pores of a zeolite: FT-IR study", O. Zavorotynska, J. G. Vitillo, G. Spoto, A. Zecchina, *Int. J. Hydrogen En.*, **36**, 7944-7950 (2011).

31. "Structure and thermodynamic properties of the $NaMgH_3$ perovskite: a comprehensive study", D. Pottmaier, E. R. Pinatel, J. G. Vitillo, S. Garroni, M. Orlova, M. Dolors Baro, G. B. M. Vaughan, M. Fichtner, W. Lohstroh, M. Baricco, *Chem. Mater.*, **23**, 2317–2326 (2011).*[periodic calculations]*

32. "Aerogels and Polymorphism of Isotactic Poly(4-methyl-pentene-1)", C. Daniel, J. G. Vitillo, G. Fasano, G. Guerra, *ACS Appl. Mater. Interfaces*, **3**, 969–977 (2011). *[volumetric measurements]*

33. "Nanoporous crystalline phases of poly(2,6-dimethyl-1,4-phenylene)oxide", C. Daniel, S. Longo, G. Fasano, J. G. Vitillo, G. Guerra, *Chem. Mater.*, **23**, 3195–3200 (2011). *[volumetric measurements]*

34. "Crystal structure refinement of a sepiolite/indigo Maya Blue pigment using molecular modeling and synchrotron diffraction", R. Giustetto, D. Levy, O. Wahyudi, G. Ricchiardi, J. G. Vitillo, *Eur. J. Mineral.*, **23**, 449–466 (2011). *[molecular mechanics calculations]*

35. "Cyclodextrin nanosponges as effective gas carriers", F. Trotta, R. Cavalli, K. Martina, M. Biasizzo, J. Vitillo, S. Bordiga, P. Vavia, K. Ansari, *J. Incl. Phenom. Macrocycl. Chem.*, **71**, 189-194 (2011). *[gravimentric measurements]*

36. "Hydrogen Uptake by $\{H[Mg(HCOO)_3]\supset NHMe_2\}_\infty$ and Determination of Its H_2 Adsorption Sites through Monte Carlo Simulations. A. Rossin, D. Fairen-Jimenez, T. Düren, G. Giambastiani, M. Peruzzini, J. G. Vitillo, *Langmuir*, **27**, 10124 (2011). *[volumetric measurements]*

37. [*] "Tailoring MOFs for CO_2 capture: the amino-effect", **J. G. Vitillo**, M. Savonnet, G. Ricchiardi and S. Bordiga, *ChemSusChem*, **4**, 1281–1290 (2011). *[cluster calculations]*

38. "H_2 storage in isostructural UiO-67 and UiO-66 MOFs", S. Chavan, J. G. Vitillo, D. Gianolio, O. Zavorotynska, B. Civalleri, S. Jakobsen, M. H. Nilsen, L. Valenzano, C. Lamberti, K. P. Lillerud and S. Bordiga, *Phys. Chem. Phys. Chem.*, **14**, 1614-1626 (2011). *[volumetric measurements]*
39. Structure-activity relationships of simple molecules adsorbed on CPO- "Structure-activity relationships of simple molecules adsorbed on CPO-27-Ni Metal-Organic Framework: in situ experiments vs. theory", L. Valenzano, J. G. Vitillo, S. Chavan, B. Civalleri, F. Bonino, S. Bordiga, C. Lamberti, *Catal. Today*, **182**, 67–79 (2012).
40. "Functionalisation of CPO-27-Ni through metal hexacarbonyls: the role of open Ni^{2+} sites", S. Chavan, J. G. Vitillo, M. C. Larabi, E. A. Quadrelli, P. D.C. Dietzel and S. Bordiga, *Micro. Meso. Mater.* **157**, 56–61 (2012). *[cluster calculations]*
41. "Preparation and adsorption properties of activated porous carbons obtained using volatile zinc templating phases", F. Cesano, M. M. Rahman, S. Bertarione, J. G. Vitillo, D. Scarano and A. Zecchina, *Carbon*, **50**, 2047-2051 (2012).
42. "Spectroscopic and adsorptive studies of a thermally robust pyrazolato-based PCP", L. Mino, S. Bordiga, J. G. Vitillo, E. Gallo, C. Lamberti, V. Colombo, A. Maspero, S. Galli, *Dalton Trans.*, **41**, 4012-4019 (2012). *[volumetric measurements]*
43. [*] "Low temperature activation and reactivity of CO_2 over a Cr^{II}-based heterogeneous catalyst: a spectroscopic study", E. Groppo, A. Zecchina, C. Barzan, **J. G. Vitillo**, *Phys. Chem. Phys. Chem.*, **14**, 6538-6543 (2012).
44. [*] "Soft synthesis of isocyanate-functionalised Metal Organic Frameworks", **J. G. Vitillo**, T. Lescouet, M. Savonnet, D. Farrusseng, S. Bordiga, *Dalton Trans.*, **41**, 14236-14238 (2012). *[FTIR measurements, XRD, N_2 volumetry, TGA]*
45. "Monolithic nanoporous–crystalline aerogels based on PPO", C. Daniel, S. Longo, S. Cardea, J. G. Vitillo and G. Guerra, *RSC Adv.*, **2**, 12011-12018 (2012). *[volumetric measurements]*
46. "Monolithic aerogels based on poly(2,6-diphenyl-1,4-phenylene oxide)" S. Longo, J. G. Vitillo, C. Daniel, G. Guerra, *ACS Appl. Mater. Interfaces*, **5**, 5493–5499 (2013). *[volumetric measurements]*
47. "Silica-supported Ti-chloride tetrahydrofuranates, precursors of Ziegler-Natta catalysts", K. Seenivasan, E. Gallo, A. Piovano, J. G. Vitillo, A. Sommazzi, S. Bordiga, C. Lamberti, P. Glatzel, and E. Groppo, *Dalton Transactions*, **42**, 12706-12713 (2013). *[experimentalist during the XES-XAS measurements]*
48. "Theoretical and experimental study on $Mg(BH_4)_2$-$Zn(BH_4)_2$ mixed borohydrides", E. Albanese, G. N. Kalantzopoulos, J. G. Vitillo, E. Pinatel, B. Civalleri, S. Deledda, S. Bordiga, B. C. Hauback and M. Baricco, *J. Alloy. Compd.*, **580**, S282–S286 (2013). *[FTIR and XRD measurements]*
49. "An alternative pathway for the synthesis of isocyanato and urea-functionalised metal–organic frameworks", T. Lescouet, J. G. Vitillo, S. Bordiga, J. Canivet and D. Farrusseng, *Dalton Trans.*, **42**, 8249–8258 (2013).
50. "Combined study of structural properties on metal-organic frameworks with same topology but different linkers or metal", D. Gianolio, J. G. Vitillo, B. Civalleri, S. Bordiga, U. Ølsbye, K. P. Lillerud, L. Valenzano, and C. Lamberti, "Proceedings of the 15th International Conference on X-Ray Absorption Fine Structure (XAFS), Beijing, China, 22-28 July 2012", *J. Phys. Conf. Series*, **430**, 012134 (2013). *[volumetric measurements]*
51. "Material properties and empirical rate equations for hydrogen sorption reactions in 2 $LiNH_2$ - 1.1 MgH_2 - 0.1 $LiBH_4$ - 3 wt.% $ZrCoH_3$", I. Bürger, J.J. Hu, J.G. Vitillo, G.N. Kalantzopoulos, S. Deledda, M. Fichtner, M. Baricco, M. Linder, *Int. J. Hydrogen En.*, **39**, 8283-8292 (2014). *[volumetric measurements]*
52. "Close-Packed Dye Molecules in Zeolite Channels Self Assemble into Supramolecular Nanoladders", L. Gigli, R. Arletti, G. Tabacchi, E. Fois, J.G. Vitillo, G. Martra, G. Agostini, S. Quartieri, G. Vezzalini, *J. Phys. Chem. C* 2014-033564 (2014). *[FTIR measurements]*

53. "Tuned to Perfection: Ironing out the Defects in Metal-Organic Framework UiO-66", G. C. Shearer, S. Chavan, J. Ethiraj, J. G. Vitillo, S. Svelle, U. Olsbye, C. Lamberti, S. Bordiga, K. P. Lillerud, *Chem. Mater.*, **26**, 4068–4071 (2014).

54. "Evolution of host/guest interactions with heating in a "Maya Red" pigment (palygorskite/methyl red composite)" R. Giustetto, J. G. Vitillo, I. Corazzari, F. Turci, *J. Phys. Chem. C*, 118, 19322 (2014). *[molecular mechanics and DFT calculations]*

55. [*] "Fast carbon dioxide recycling by reaction with γ-$Mg(BH_4)_2$", **J. G. Vitillo**, E. Groppo, E. G. Bardají, M. Baricco, S. Bordiga, *Phys. Chem. Phys. Chem.*, **16**, 22482-22486 (2014). *[microgravimetric, ATR-IR, surface area, gas phase IR, XRD measurements]*

56. "Hydrogen storage of Mg-Zn Mixed Metal Borohydrides", G. N. Kalantzopoulos, J. G. Vitillo, E. Albanese, E. Pinatel, B. Civalleri, S. Deledda, S. Bordiga, M. Baricco and B. C. Hauback, *J. Alloy. Compd.*, **615**, S702-705 (2014). *[XRD measurements]*

57. "Hydrogen uptake and diffusion in Callovo-Oxfordian clay rock for nuclear waste disposal technology", F. Bardelli, C. Mondelli, M. Didier, J. G. Vitillo, D. R. Cavicchia, J.-C. Robinet, L. Leone, L. Charlet, *Appl. Geochem.*, **49**,168-177 (2014). *[volumetric measurements and analysis]*

58. [*] "CO_2 Adsorption in Amine Functionalized Mixed Ligand Metal-organic Frameworks of UiO-66 topology", J. Ethiraj, E. Albanese, B. Civalleri, **J. G. Vitillo**, F. Bonino, S. Chavan, G. C. Shearer, K. Petter Lillerud, S. Bordiga, *Chem. Sus. Chem.*, **7**, 3382-3388 (2014).

59. "Hydrogen adsorption and diffusion in synthetic Na-montmorillonites at high pressures and temperature", C. Mondelli, F. Bardelli, J. G. Vitillo, M. Didier, J. Brendle, D. R. Cavicchia, J.-C. Robinet and L. Charlet, *Int. J. Hydrogen Energy*, **40**, 2698-2709 (2015). *[N_2 volumetric measurements and analysis]*

60. "Design of High Surface Area Poly(Ionic Liquid)s to Convert Carbon Dioxide into Ethylene Carbonate", A. Dani, E. Groppo, C. Barolo, J. G. Vitillo, S. Bordiga, *J. Mater. Chem. A*, **3**, 8508-8518 (2015).

61. [*] "Magnesium-based systems for carbon dioxide capture, storage and recycling: from leaves to synthetic nanostructured materials", **J. G. Vitillo,** *RSC Adv.*, **5**, 36192 - 36239 (2015). *[invited paper]*

62. "Thionine Dye Confined in Zeolite L: Synthesis Location and Optical Properties", L. Gigli, R. Arletti, J. G. Vitillo, G. Alberto, G. Martra, A. Devaux, G. Vezzalini, *J. Phys. Chem. C*, **119**, 2014-033564 (2015). *[FTIR and UV-Vis measurements]*

63. "Combined X-Ray and Raman Studies on the Effect of Cobalt Additives on the Decomposition of Magnesium Borohydride", O. Zavorotynska, S. Deledda, J. G. Vitillo, I. Saldan, M. Guzik, M. Baricco, J. Walmsley, J. Muller, B. C. Hauback, *Energies*, **8**, 9173 (2015). *[experimentalists during the beamtime at ESRF]*

64. [*] "Spectroscopic and structural characterization of thermal decomposition of γ-$Mg(BH_4)_2$: dynamic vacuum vs. H_2 atmosphere", **J. G. Vitillo**, S. Bordiga, M. Baricco, *J. Phys. Chem. C*, **119**, 25340−25351 (2015). *[supervision and participation to all the measurements and analysis; DFT calculations]*

65. "New Insights in UTSA-16", A. Masala, J. G. Vitillo, F. Bonino, M. Manzoli, C. A. Grande, S. Bordiga, *Phys. Chem. Chem. Phys.*, **18**, 220-227 (2016). *[volumetric measurements, structural analysis]*

66. "Solvent driven gate opening in MOF-76-Ce: effect on CO_2 adsorption", J. Ethiraj, F. Bonino, J. G. Vitillo, K.A. Lomachenko, C. Lamberti, H. Reinsch, K. P. Lillerud and S. Bordiga, *Chem. Sus. Chem.*, **9**, 713–719 (2016). *[participation to the volumetric measurements, discussion of the results, writing of the article]*

67. "CO_2 adsorption sites in UTSA-16: a multi technique approach", A. Masala, F. Grifasi, C. Atzori, J. G. Vitillo, L. Mino, F. Bonino, M. R. Chierotti, and S. Bordiga, *J. Phys. Chem. C*, **120**, 12068–12074 (2016). *[participation to the IR and volumetric measurements, analysis of the data, writing of the article]*

68. "Hydride phase formation in carbon supported palladium hydride nanoparticles by in situ EXAFS and XRD", A.L. Bugaev, A.A. Guda, K.A. Lomachenko, A. Lazzarini, V.V. Srabionyan, J.G. Vitillo, A. Piovano, E. Groppo, L.A. Bugaev, A.V. Soldatov, V.P. Dmitriev, R. Pellegrini, J.A. van Bokhoven, C. Lamberti, "Proceedings of the 16th International Conference on X-Ray Absorption Fine Structure (XAFS), Karlsruhe, Germany, 23-28 August 2015", *J. Phys. Conf. Series*, **712**, 012032, (2016). *[volumetric measurements]*

69. "Functionalizing the Defects: Post Synthetic Ligand Exchange in the Metal Organic Framework UiO-66", G. C. Shearer, J. G. Vitillo, S. Bordiga, S. Svelle, K. P. Lillerud, *Chem. Mater.* **28**, 7190–7193 (2016). *[volumetric measurements]*

70. "CO_2 capture in dry and wet conditions in UTSA-16 metal organic framework", A. Masala†, J. G. Vitillo†, G. Mondino, C. A. Grande, R. Blom, M. Manzoli, M. Marshall and S. Bordiga, *ACS Appl. Mater. Interfaces*, **9**, 455–463 (2017). *[gravimetric measurements and volumetric measurements, discussion of the results, strong revision of the whole manuscript]*

71. [*] "Increasing the Stability of Mg_2(dobpdc) Metal-Organic Framework in Air Through Solvent Removal", J. G. Vitillo, S. Bordiga, *Mater. Chem. Front.*, **1**, 444 - 448 (2017). *[measurements, idea of the work, article writing]*

72. "A multi-technique approach to disclose the reaction mechanism of dimethyl carbonate synthesis over amino-modified SBA-15 catalysts" ,V. Crocellà, T. Tabanelli, J. G. Vitillo, D. Costenaro, C. Bisio, F. Cavani, S. Bordiga, *Appl. Catal. B: Environm.*, **211**, 323-336, (2017). *[calculations]*

73. "Core-shell structure of palladium hydride nanoparticles revealed by combined X-ray absorption spectroscopy and X-ray diffraction", A. L. Bugaev, A. A. Guda, K. A. Lomachenko, V. V. Shapovalov, A. Lazzarini, J. G. Vitillo, L. A. Bugaev, E. Groppo, R. Pellegrini, A. V. Soldatov, J. A. van Bokhoven and C. Lamberti, *J. Phys. Chem. C*, **121**, 18202-18213 (2017). *[volumetric measurements]*

74. [*]"Introduction: Carbon Capture and Separation",J. G. Vitillo, B. Smit and L. Gagliardi, *Chem. Rev.*, **117**, 9521-9523 (2017). *Author of the cover for the journal issue.*

75. [*]"Conductive ZSM-5-Based Adsorbent for CO_2 Capture: Active Phase vs Monolith", A. Masala,† J. G. Vitillo,† G. Mondino, G. Martra, R. Blom, C. A. Grande and S. Bordiga, *Ind. Eng. Chem. Res.*, **56**, 8485-8498. (2017). *[volumetric, gravimetric measurements] Author of the TOC feautured on the Journal cover.*

76. [*] "Effect of Pore Size, Solvation and Defectivity on the Perturbation of Adsorbates in MOFs: The Paradigmatic Mg_2(dobpdc) Case Study" J. G. Vitillo, G. Ricchiardi, *J. Phys. Chem. C*, **121**, 22762 (2017). *[calculations and experiments]*

77. "Structure and Host-Guest Interactions of Perylene-Bisimide Dyes in Zeolite L Nanochannels", L. Gigli, R. Arletti, G. Tabacchi, M. Fabbiani, J. G. Vitillo, G. Martra, A. Devaux, I. Miletto, S. Quartieri, G. Calzaferri and E. Fois, *J. Phys. Chem. C*, **122**, 3401-3418 (2018).

78. "Looking for the active hydrogen species in a 5wt% Pt/C catalyst: a challenge for Inelastic Neutron Scattering", M. Carosso, A. Lazzarini, A. Piovano, R. Pellegrini, S. Morandi, S. Manzoli, J. G. Vitillo, M. Jimenez Ruiz, C. Lamberti, E. Groppo, *Faraday Discuss.*, **208**, 227-242 (2018).

79. "Time-resolved operando studies of carbon supported Pd nanoparticles under hydrogenation reactions by X-ray diffraction and absorption", A. L. Bugaev, O. A. Usoltsev, A. Lazzarini, Ki. A. Lomachenko, A. A. Guda, R. Pellegrini, M. Carosso, J. G. Vitillo, E. Groppo, J. A. van Bokhoven, A. V. Soldatov, C. Lamberti *Faraday Discuss.*, **208**, 187-205 (2018).

80. "Understanding and Controlling the Dielectric Response of Metal-Organic Frameworks", M. R. Ryder, L. Donà, J. G. Vitillo, B. Civalleri, *ChemPlusChem*, 83, 308-316 (2018).

81. [*] "On the Structure of Superbasic $(MgO)_n$ Sites Solvated in a Faujasite Zeolite.", J. G. Vitillo, T. Fjermestad, M. D'Amore, M. Milanesio, L. Palin, G. Ricchiardi and S. Bordiga, *Phys. Chem. Chem. Phys.*, **20**, 18503-18514 (2018).

82. [*] "Quantum Chemical Characterization of Structural Single Fe(II) Sites in MIL-Type Metal Organic Frameworks for Oxidation of Methane to Methanol and Ethane to Ethanol", J. G. Vitillo, A. Bhan, C.J. Cramer, C.C. Lu, L. Gagliardi, *ACS Catal.*, **9**, 2870−2879 (2019).

83. [*] "Characterization and Modeling of Reversible CO_2 Capture from Wet Streams by a MgO/Zeolite Y Nanocomposite", M. Signorile,† J. G. Vitillo,† M. D'Amore, V. Crocellà, G. Ricchiardi and S. Bordiga, *J. Phys. Chem. C*, **123**, 17214-17224 (2019).

84. [*] "ZIF-8 as a Catalyst in Ethylene Oxide and Propylene Oxide Reaction with CO_2 to Cyclic Organic Carbonates", J.G. Vitillo, V. Crocellà, F. Bonino, *ChemEnginnering*, **3**, 60 (2019). [featured on the cover]
85. "Structure, Dynamics, and Reactivity for Light Alkane Oxidation of Fe(II) Sites Situated in the Nodes of a Metal–Organic Framework ", M. C. Simons, J. G. Vitillo, M. Babucci, A. S. Hoffman, A. Boubnov, M. L. Beauvais, Z. Chen, C. J. Cramer, K. W. Chapman, S. R. Bare, B. C. Gates, C. C. Lu, L. Gagliardi, A. Bhan, *J. Amer. Chem. Soc.* 141, 45, 18142-18151 (2019).
86. "Negative cooperativity upon hydrogen bond-stabilized O_2 adsorption in a redox-active metal–organic framework", J. Oktawiec, H. Z. H. Jiang, J. G. Vitillo, D. A. Reed, L. E. Darago, B. A. Trump, V. Bernales, H. Li, K. A. Colwell, H. Furukawa, C. M. Brown, L. Gagliardi, and J. R. Long, *Nat. Commun.*, **11**, 3087 (2020).
87. [*] "Visible-light driven photocatalytic coupling of benzylamine over titanium-based MIL-125-NH_2 metal-organic framework: a mechanistic study", J. G. Vitillo, D. Presti, I. Luz, F. X. Llabrés i Xamena, S. Bordiga, *J. Phys. Chem. C*, **124**, 43, 23707–23715 (2020) *[feaured on the Front Cover]*.
88. [*] "Influence of First and Second Coordination Environment on Structural Fe(II) Sites in MIL-101 for C–H Bond Activation in Methane", J.G. Vitillo, C.C. Lu, C.J. Cramer, A. Bhan, L. Gagliardi, *ACS Catal.*, **11**, 579-589 (2021).
89. [*] "Modeling Metal Influence on the Gate Opening in ZIF-8 Materials", J. G. Vitillo, L. Gagliardi, *Chem. Mater.* **33**, 4465–4473 (2021). *[feaured on the Front Cover]*
90. [*] "Thermal Treatment Effect on CO and NO Adsorption on Fe(II) and Fe(III) Species in Fe_3O-Based MIL-Type Metal–Organic Frameworks: A Density Functional Theory Study", Vitillo, J. G.; Gagliardi, L. Inorg. Chem. **60**, 11813–11824 (2021).
91. "Beyond Radical Rebound: Methane Oxidation to Methanol Catalyzed by Iron Species in Metal–Organic Framework Nodes", M. C. Simons, S. D. Prinslow, M. Babucci, A. S. Hoffman, J. Hong, J. G. Vitillo, S. R. Bare, B. C. Gates, C. C. Lu, L. Gagliardi and A. Bhan, *J. Am. Chem. Soc.*, 143, 12165-12174 (2021).
92. "Experimental and computational characterization of phase transitions in CsB_3H_8", O. Zavorotynska, M. H. Sørby, J. G. Vitillo, S. Deledda, C. Frommen and B. C. Hauback, *Phys. Chem. Chem. Phys.*, 23, 17836-17847 (2021).
93. [*] "Water-Driven Structural Transformation in Cobalt Trimesate Metal-Organic Frameworks", J. Ethiraj, V. Surya, P. Selvam and J. G. Vitillo, *Energies*, **14**, 4751 (2021).
94. [*] "Multireference methods are realistic and useful tools for modeling catalysis", J. G. Vitillo, C. J. Cramer, L. Gagliardi, *Isr. J. Chem.*, **62**, e202100136 (2022).

No ISI-indexed Journals and Conference Proceeding

1. "Molecular adsorption of hydrogen on zeolites: a theoretical study of the different contributions to the interaction", J. G. Vitillo, A. Damin, A. Zecchina, G. Ricchiardi, "*Proceedings of the 1st World Congress of Young Scientists on Hydrogen*", Begell House Inc, New York, pag. 233-241 (2006).
2. "H_2 storage in microporous materials: a comparison between zeolites and MOFs" , L. Regli, J. G. Vitillo, D. Cocina, S. Bordiga, C. Lamberti, G. Spoto, G. Ricchiardi, A. Zecchina, "Proceedings of the 1st World Congress of Young Scientists on Hydrogen", Begell House Inc, New York, pag. 243-247 (2006).
3. "XAFS and Vibrational Characterisation of the Local Structure of Framework Cu(II) in HKUST-1 Metallorganic Framework", C. Prestipino, L. Regli, J. G. Vitillo, F. Bonino, A. Damin, C. Lamberti, A. Zecchina, P. L. Solari, K. O. Kongshaug, S. Bordiga, "*ESRF highlights 05*", 90-91 (2005).
4. "Il riscaldamento globale: situazione attuale e scenari futuri [Global warming: present and future scenarios]", A. Zecchina, J. G. Vitillo, *Quaderni dell'Accademia*, **15**, 51-64 (2007).
5. "Adsorption of hydrogen, methane and hydrogen/methane mixtures on Na-A zeolites: a FTIR spectroscopic study at variable temperature (250-15 K)", O. Zavorotynska , J. G. Vitillo, G. Spoto, A. Zecchina, *Advanced Micro- & Mesoporous Materials* in the book series "Topics in Chemistry & Materials Science", vol. 1, pag. 250-261 (2011).

6. "Energy outlook: A perspective from the new generation of materials researchers", I. Tamblyn, I. Aguiar, R. K. Annabattula, G. Justin, K. Rafiee, A. Rios-Flores, A. Vicente, J. G. Vitillo, D. Wong, *MRS Bulletin*, **36**, 963-963 (2011).
7. "Effective transport of electronic excitation energy through zeolite channels: a structural study", L. Gigli, R. Arletti, J. G. Vitillo, G. Martra, G. Alberto, G. Tabacchi, E. Fois, S. Quartieri and G. Vezzalini, *Acta Cryst. A*, A71, s300 (2015).

Book chapters

1. "Characterization of MOFs. 1. Combined Vibrational and Electronic Spectroscopies", F. Bonino, C. Lamberti, S. Chavan, J.G. Vitillo, S. Bordiga, in "Metal organic frameworks as heterogeneous catalysts" edited by F. X. Llabrés i Xamena, J. Gascon, Book Series: *RSC Catalysis Series*, vol. **12**, pag. 76-142, DOI: 10.1039/9781849737586-00076 (2013).
2. "Design and characterization of MOFs (Metal Organic Frameworks) for innovative applications", J. G. Vitillo, C. Atzori, B. Civalleri, N. Barbero, C. Barolo and F. Bonino, in "Hybrid Organic-Inorganic Interfaces. Towards Advanced Functional Materials" edited by M. H. Delville, A. Taubert, Wiley-VCH, pp.459-495 (2017).

Reviewer activity

Reviewer for the following high impact factor journals: Nature Chem., Nature Commun., Coord. Chem. Rev., J. Amer. Chem Soc., J. Mater. Chem. C, ACS Sustainable Chemistry & Engineering, Chem. Sci, Chem. Soc. Rev., ACS Catal., ACS Appl. Mater. Inter., ChemSusChem, Inorganic Chemistry, Journal of Catalysis, J. CO_2 Utilization, Journal of Physical Chemistry C, International Journal of Hydrogen Energy, Physical Chemistry Chemical Physics, International Journal of Applied Ceramic Technology, Journal of Alloys and Compounds, Industrial & Engineering Chemistry Research, Molecules, Frontiers in Energy Research, Green Processing and Synthesis and Computational and Theoretical Chemistry.

She is also project reviewer for the EU COST Association, the French National Research Agency (ANR), the German Academic Exchange Service (DAAD), King Fahd University of Petroleum & Minerals (Saudi Arabia), the Poland National Science Center, and the Swiss National Science Foundation (SNSF).

JGV was in the Review Panel for the Proceedings of the 2016 Global Conference on Polymer and Composite Materials (PCM2016, May 20th - 23rd, 2016, Hangzhou, China) and of ET14 symposium on CCUS for the 2018 MRS Fall Meeting and Exhibit.

CONTRIBUTIONS TO CONGRESSES

List of attended congresses

1. "Characterization and Reactivity of Surface Structures and Surface Species", Torino, Italy (January 12th-13th, 2001)
2. "Advanced school on Nanostructured Interfaces and Interphases", Torino, Italy (September 1st-3rd, 2002)
3. "XXI Congresso della Società Chimica Italiana", Torino, Italy (June 22th-27th, 2003)
4. "Seconda Scuola Nazionale in Simulazioni Computazionali Multiscala Applicate alle Scienze dei Materiali", Modena, Italy (February 16th-20th, 2004)
5. "Materiali Innovativi per lo Stoccaggio e la Generazione di Idrogeno, MISGI", Torino, Italy (July 5th, 2004)
6. "HYSYDAYS, 1st World Congress of Young Scientists on Hydrogen, ECO-EFFICIENCY BIENNIAL Seconda edizione", Torino, Italy (May 18th-21st, 2005).
7. "Seminario di alfabetizzazione alla proprietà intellettuale", Torino, Italy (July 7th, 2005).
8. "12th ISHHC, International Symposium on Relations between Homogeneous and Heterogeneous Catalysis", Firenze, Italy (July 18th-22nd, 2005).
9. "Excellence PhD course: Nanoparticles - Synthesis and Characterization", Torino, Italy (March 6th–9th, 2006).
10. "ICTAC-11, 11th International Conference on Theoretical Aspects of Catalysis", Schmöckwitz, Germany, (June 11th-14th, 2006).
11. "Simulations of novel carbon materials" CECAM Workshop, Lyon, France, (October 25th-28th, 2006).
12. "Writing to communicate science: a practical workshop" by dr. Sarah Clark at INSTM, Florence, Italy (May 17th –18th, 2007).
13. "HYSYDAYS, 2st World Congress of Young Scientists on Hydrogen, ECO-EFFICIENCY BIENNIAL Terza edizione", Torino, Italy, (June 6th-8th, 2007).
14. "VIII AIZ Congress - National Conference on Science and Technology of Zeolites", Torino, Italy (July 1st-4th, 2007).
15. "Simulation, design and crystal engineering of metal-organic frameworks" CECAM Workshop, Lyon, France, (July 16th-18th, 2007).
16. "Theoretical Aspects of Design of Periodic Materials", CECAM Workshop, Lyon, France, (July 19th-20th, 2007.
17. "15th International Zeolite Conference", Beijing, China, (August 12th-17th, 2007).
18. "Materials Studio Workshop", Casalecchio di Reno, Italy (November 28th-29th, 2007).
19. "Theoretical Spectroscopy Lectures: theory and codes" CECAM Tutorial, Lyon, France (December 10th-15th, 2007).
20. "Summer School of Calorimetry, Calorimetry and thermal methods in catalysis", Lyon, France, (June 29th-July 4th, 2008).
21. "Ab initio simulation of crystalline solids: history and prospects. Workshop in honour of Prof. Cesare Pisani", Torino, Italy (September 8th-9th, 2008).
22. "1st International Conference on Metal Organic Frameworks and Open Framework Compounds – MOF2008", Augsburg, Germany (October 8th-10th, 2008).
23. "Catalysis From First Principles Workshop", Wien, Austria (May 25th-28th, 2009).
24. "MOFs on the Road to Applications Workshop 2009", Oslo, Norway (June 17th-19th, 2009).
25. "MSSC2009 - Ab initio Modelling in Solid State Chemistry - Torino Edition (Experienced Users): Introducing CRYSTAL09 and CRYSCOR", Torino (September 6th-11th, 2009).
26. "Gas separation and gas storage using porous materials CECAM-HQ-EPFL workshop", Lausanne, Switzerland (May 17th-19th, 2010).
27. "Computational Carbon Capture CECAM-HQ-EPFL workshop", Lausanne, Switzerland (July 26th-28th, 2010).

28. "2nd International Conference on Metal Organic Frameworks and Open Framework Compounds – MOF2010", Marseille, France (July 26th-28th, 2010).
29. "CO_2 challenge forum: International Scientific Forum on CO_2 chemistry and biochemistry", Lyon, France (September 27th-28th, 2010).
30. "Solid State Hydrogen Storage Status, Perspectives and Industrial Application", Torino, Italy (October 5th-6th, 2010).
31. "Workshop on Adsorption in Compliant Solids", Paris, France (June 9th-11th, 2011).
32. "2011 World Materials Summit", Washingon D.C., USA (October 8th-12th, 2011).
33. "2012 MRS Spring Meeting Forum on the Many Facets of Sustainable Development", San Francisco, California, USA (April 9th, 2012).
34. "2012 MRS Spring Meeting Forum", San Francisco, California, USA (April 9th-13th, 2012).
35. "MOF2012", Edinburgh, UK (September 16th-19th, 2012).
36. "Materials for Clean Energy and Optics" workshop, Pravets, Bulgaria (April 4th-7th, 2013).
37. Macademia Final Workshop, Brussels, Belgium (June 11th-12th, 2013).
38. "XLI Congresso Nazionale di Chimica Fisica", Alessandria, Italy (June 23rd-27th, 2013).
39. "17th International Zeolite Conference, 17th IZC", Moscow, Russia (July 7th-12th 2013).
40. "FCH JU projects on hydrogen storage Joint Workshop", Santa Cruz de Tenerife, Spain (October 1st-4th, 2013).
41. "FCH JU Fuel Cell based Auxiliary Power Units Joint Workshop", Torino, Italy (June 25th-26th, 2014).
42. "14th International Symposium on Metal-Hydrogen Systems", Salford, United Kingdom, (July 20th-25th, 2014).
43. "XXV Congresso Nazionale della Società Chimica Italiana - SCI 2014", Rende, Italy (September 7th-12th, 2014).
44. "Advanced Functional Materials", Nessebar, Bulgaria (September 3rd-6th, 2014).
45. "ISGC 2015", La Rochelle, France (May 3rd-7th, 2015).
46. "Molecules@Surfaces winter school", Bardonecchia, Italy (January 31st-February 5th, 2016).
47. Conference "Concepts in catalysis: from heterogeneous to homogeneous and enzymatic catalysts", Rome, Italy (February 25th-26th, 2016).
48. "MATESA dissemination day", Oslo, Norway (June 16th, 2016).
49. "Tomorrow project dissemination day: Harnessing the Power of Light in Hybrid Materials", Torino, Italy (October 6th-7th, 2016).
50. "5th International Conference on Multifunctional, Hybrid and Nanomaterials", Lisbon, Portugal (6-10 March 2017).
51. "The Minnesota Workshop on Ab initio Modelling in Solid State Chemistry with CRYSTAL ", Minneapolis (USA) (July 9-14, 2017).
52. "3rd KAUST Research Conference: New Challenges in Heterogeneous Catalysis", Thuwal, Kingdom of Saudi Arabia (January 29-31, 2018).
53. "255th ACS National Meeting", New Orleans, LA (March 18-22, 2018).
54. "2018 MRS Fall Meeting and Exhibit", Boston MA (November 25-30, 2018).
55. Global Women Breakfast for IUPAC100 in Como (February 12, 2019)
56. RSC Twitter Poster Conference 2019 (March 5-6, 2019).
57. 4th Annual UK Porous Materials Conference, Cardiff, UK (July 1-2, 2019).
58. RSC Twitter Poster Conference 2020 (March 3, 2020).
59. RSC Porous Materials Group poster conference #RSCPMGPoster, Twitter, 23-24 July 2020.
60. International School of Chemistry, University of Camerino, web conference (1-6 September 2020).
61. RSC Twitter Poster Conference 2021 (March 2-3, 2021).
62. 2nd International School on Porous Materials, Lake Como School of Advanced Studies Como, Italy (21-25 June 2021)
63. Feza 2021, 8th Conference of the Federation of European Zeolite Associations, Virtual (July 5-9, 2021).

64. ACS Fall 2021 National Meeting & Exposition, Online + Atlanta, GA, USA, (August 22-26, 2021).
65. Catalysis Science & Technology 10th Anniversary Symposium, United Kingdom + online (16 - 17 November 2021).
66. #RSCPoster Twitter Conference 2022 (March 1-2, 2022).

Oral communications to congresses/conferences/schools

List of the talks given by JGV as speaker.

1. "Swing Effect Dependence on Metal Substitution in ZIF-8 Materials", J. G. Vitillo, L. Gagliardi, ACS Fall 2021 National Meeting & Exposition, Online + Atlanta, GA, USA, (August 22-26, 2021).
2. "Tuning the gate opening in zeolitic imidazolate frameworks by metal substitution", J. G. Vitillo, L. Gagliardi, Feza 2021, 8th Conference of the Federation of European Zeolite Associations, Virtual (July 5-9, 2021).
3. "Single Fe(II) sites in MIL-type metal organic frameworks for the oxidation of light alkanes to alcohols", J. G. Vitillo, A. Bhan, C. J. Cramer, C. Lu, L. Gagliardi, 4th Annual UK Porous Materials Conference, Cardiff, UK (July 1-2, 2019).
4. "Materials Science Facing Global Warming—So What?" J. G. Vitillo; "2018 MRS Fall Meeting and Exhibit", Boston MA (November 25-30, 2018).
5. "Immobilization of Earth Abundant Metals Coordinated in Heterobimetallic Ligand Scaffolds on Metal Organic Frameworks", J. G. Vitillo, K. M. Riley, S. P. Desai, Z. Garr, A. Platero-Prats, J. Zheng, M. Simons, T. Webber, K. W. Chapman, D. M. Camaioni, O. K. Farha, J. T. Hupp, R. Lee Penn, C. Lu, L. Gagliardi, "255th ACS National Meeting", New Orleans, LA (March 18th-22nd, 2018).
6. "Fast carbon dioxide recycling by reaction with γ-$Mg(BH_4)_2$", J. G. Vitillo, E. Groppo, E. Gil Bardají, M. Baricco, M. Chierotti, S. Bordiga, "ISGC 2015", La Rochelle, France (May 3rd-7th, 2015).
7. "Carbon dioxide capture and recycling in microporous materials", J. G. Vitillo, J. Ethiraj, F. Giordanino, V. Crocellà, G. Ricchiardi, E. Groppo, M. Baricco, F. Bonino, S. Chavan, S. Bordiga, "XXV Congresso Nazionale della Società Chimica Italiana - SCI 2014", Rende, Italy (September 7th-12th, 2014).
8. "Spectroscopic and Structural Characterization of γ-$Mg(BH_4)_2$ Thermal Decomposition: Vacuum vs. Hydrogen Atmosphere", J. G. Vitillo, O. Zavorynska, S. Deledda, S. Bordiga, B. C. Hauback, M. Baricco, "14th International Symposium on Metal-Hydrogen Systems", Salford, United Kingdom, (July 20th-25th, 2014).
9. "Enhancing CCS performances of microporous materials by basic oxide coating" J. G. Vitillo, F. Giordanino, G. Ricchiardi, V. Crocellà, S. Bordiga, NIS Colloquium, Torino, Italy (November 15th, 2013).
10. "2 $LiNH_2$:1 MgH_2:0.1 $LiBH_4$:3 wt.% $ZrCoH_3$", J. G. Vitillo, A. Masala, C. Milanese, S. Bordiga, G. Spoto, M. Baricco, "FCH JU projects on hydrogen storage Joint Workshop", Santa Cruz, Tenerife, Spain (October 1st-4th, 2013).
11. "Dye-loading influence on performances of fluorenone/zeolite L light harvester", L. Gigli, R. Arletti, E. Fois, G. Tabacchi, S. Quartieri, G. Vezzalini, G. Alberto, G. Agostini, G. Martra, J. G. Vitillo, "XL Congresso Nazionale di Chimica Fisica", Alessandria, Italy (June 23th-27th, 2013).
12. "Green route to make reactive MOFs: diphosgene-free grafting of isocyanate groups", J. G. Vitillo, T. Lescouet, M. Savonnet, D. Farrusseng, S. Bordiga, "Macademia Final Workshop", Brussels, Belgium (June, 11th-12th, 2013).
13. "Role of additives in hydrogen sorption on $LiNH_2$-MgH_2 system", J. G. Vitillo, J. Hu, F. Dolci, A. Masala, S. Bordiga, M. Fichtner, M. Baricco, "NIS Colloquium", Torino, Italy (February 15th, 2013).
14. "Amino-functionalised MOFs for CO2 storage: the role of the -NH2 groups", J. G. Vitillo, S. Chavan, B. Seyyedi, F. Bonino, D. Farrusseng, S. Bordiga, presented at the "Gas separation and gas storage using porous materials" workshop CECAM-HQ-EPFL in Lausanne, Switzerland (May 17th-19th, 2010).
15. "Role of exposed metal sites in the hydrogen storage in MOFs", J. G. Vitillo, L. Regli, S. Chavan, G. Ricchiardi, G. Spoto, P. D. C. Dietzel, S. Bordiga, A. Zecchina, "1st International Conference on Metal

Organic Frameworks and Open Framework Compounds – MOF2008", Augsburg, Germany (October 8th-10th, 2008).

16. "CH_4 storage in microporous materials", J. G. Vitillo, "NIS Colloquium: H_2, CH_4 and CO_2: separation, storage and activation", ENI - Ist. Guido Donegani, Novara, Italy (May 27th, 2008).
17. "H_2 adsorption and ortho-para conversion on ETS-10", J. G. Vitillo, D. Cocina, E. N. Gribov, G. Spoto, G. Ricchiardi, A. Zecchina, "15th International Zeolite Conferences", Beijing, China (August 12th-17th, 2007).
18. "FTIR spectroscopy and thermodynamics of hydrogen adsorbed in a cross-linked polymer", J. G. Vitillo, D. Cocina, A. Damin, F. Bonino, G. Ricchiardi, A. Zecchina, G. Spoto, HYSYDAYS, 2nd World Congress of Young Scientists on Hydrogen, ECO-EFFICIENCY BIENNIAL Quarta edizione, Torino, Italy (June 6th-8th 2007).
19. "Molecular adsorption of hydrogen on zeolites: a theoretical study of the different contributions to the interaction", J. G. Vitillo, A. Damin, A. Zecchina, G. Ricchiardi, "12th ISHHC "International Symposium on Relations between Homogeneous and Heterogeneous Catalysis", Firenze, Italy (July 18th-22nd, 2005).
20. "Molecular adsorption of hydrogen on zeolites: a theoretical study of the different contributions to the interaction", J. G. Vitillo, A. Damin, A. Zecchina, G. Ricchiardi, HYSYDAYS, "1st World Congress of Young Scientists on Hydrogen, ECO-EFFICIENCY BIENNIAL Terza edizione", Torino, Italy (May 18th-21th, 2005).
21. "Modelli quantomeccanici per la descrizione dell'interazione dell'idrogeno molecolare/Quantum mechanical models for the description of the molecular hydrogen interaction", J. G. Vitillo Materiali Innovativi per lo Stoccaggio e la Generazione di Idrogeno, Torino, Italy (July 5th, 2004).

Invited oral communications to congresses/conferences/schools

22. "Tailoring MOFS for CO_2 storage: the amino-effect", J. G. Vitillo, S. Chavan, B. Seyyedi, F. Bonino, D. Farrusseng, S. Bordiga, "Computational Carbon Capture" workshop, Lausanne, Switzerland CECAM-HQ-EPFL, July 26-28, 2010.
23. "Design of hydrogen storage materials: A multitechnical approach" (keynote), J. G. Vitillo, "Materials for Clean Energy and Optics workshop", Pravets, Bulgaria (April 4th-7th, 2013).
24. "Carbon dioxide capture and recycling in microporous materials" (keynote), J. G. Vitillo, J. Ethiraj, F. Giordanino, V. Crocellà, G. Ricchiardi, E. Groppo, M. Baricco, F. Bonino, S. Chavan, S. Bordiga, "Advanced Functional Materials", Nessebar, Bulgaria (September 3rd-6th, 2014).

Outreach lectures

1. "4th Global Women Breakfast" organized by IUPAC, Como section (February 16th, 2022).
2. "2nd Global Women Breakfast" organized by IUPAC, Como section (February 12th, 2020).
3. "1st Global Women Breakfast" organized by IUPAC100, Como section (February 12th, 2019).

Oral communications as co-author to congresses/conferences/schools

The presenting author of the contribution is indicated in bold.

1. "Structure, Dynamics, and Reactivity for Light Alkane Oxidation of Fe(II) Sites Situated in the Nodes of a Metal–Organic Framework", **M. Simons**, J. G. Vitillo, M. Babucci, A. Hoffman, A. Boubnov, M. Beauvais, Z. Chen, C. J. Cramer, K. Chapman, S. Bare, B. C. Gates, C. Lu, L. Gagliardi and A. Bhan, 17th International Congress on Catalysis, San Diego, Ca (June 14-19, 2020).
2. "Structure of Fe(II) Sites Situated within the Nodes of Metal-Organic Framework Materials and Their Reactivity for Low Temperature Methane to Methanol Conversion", M. Simons, J. G. Vitillo, s. Prinslow, M. Babucci, A. Hoffman, M. Beauvais, Z. Chen, C. J. Cramer, K. Chapman, S. Bare, B. C. Gates, C. Lu, L. Gagliardi and A. Bhan, 2020 AIChE Annual Meeting.

3. "Structure, Dynamics, and Reactivity for Alkane Oxidation of Fe(II) Sites Situated in the Nodes of a Metal-Organic Framework", **A. Bhan**, **M. Simons**, J. G. Vitillo, C. J. Cramer, C. Lu, B. Gates, L. Gagliardi, 2019 AIChE Annual Meeting, Orlando, FL, (November 10-15, 2019).
4. "Structure, Dynamics, and Reactivity of Fe Sites in a Metal Organic Framework for Alkane Oxidation", **M. Simons**, J. G. Vitillo, C. J. Cramer, C. Lu, L. Gagliardi, A. Bhan, 2019 North American Catalysis Society Meeting, Chicago IL (, 2019).
5. "Innovating bimetallic active sites for small-molecule catalysis.", **C. Lu**, R. Cammarota, M.V. Vollmer, S.P. Desai, J. G. Vitillo, J. Xie, J. Ye, L. Gagliardi, "255th ACS National Meeting", New Orleans, LA (March 18th-22nd, 2018).
6. "Radiative vs radiatonless decays of photoexcited dyes entrapped in inorganic matrices: any possibility to manage the competition?", G. Alberto, L. Gigli, J. G. Vitillo, R. Arletti, **G. Martra**, "Harnessing the Power of Light in Hybrid Materials", Torino, Italy (October 6th-7th, 2016).
7. "Synthesis of dimethyl carbonate via carbonate-interchange reaction over amino-modified SBA-15 catalysts: a multi-technical approach for the understanding of the reaction mechanism", **V. Crocellà**, T. Tabanelli, J. G. Vitillo, D. Costenaro, F. Cavani, S. Bordiga, XLIV Congresso della Divisione di Chimica Fisica della SCI, Napoli, Italia (September 20th-23rd, 2016).
8. "Reversible water adsorption at room temperature in amine-free MOF for CO2 separation: towards real post-combustion capture", A. Masala, J. G. Vitillo, G. Mondino, C. Grande, R. Blom, M. Manzoli, M. Marshall and S. Bordiga, MOF2016, Long Beach, CA (September 11-15, 2016).
9. "γ-$Mg(BH_4)_2$: a nanoporous complex hydrides for hydrogen storage and CO_2 conversion", **M. Baricco**, J.G.Vitillo, E.R.Pinatel, E.Albanese, A.Castellero, P.Rizzi, B.Civalleri, S.Bordiga, XI National Conference on Nanophase Materials, Roma, Italia (October 26th -28th, 2015).
10. "Decomposition of Magnesium Borohydride with Cobalt Additives: An in-situ Synchrotron X-ray Study Combined with Raman Spectroscopy", **O. Zavorotynska**, M.N. Guzik, J. G. Vitillo, I. Saldan, S. Deledda and B.C. Hauback, SYNKNØYT User meeting (January 19th-20th, 2015).
11. "γ -$Mg(BH_4)_2$ decomposition study by DRIFT, ATR-IR and XRPD techniques", **M. Baricco**, "FCH JU projects on hydrogen storage Joint Workshop", Santa Cruz de Tenerife ,Spain (October 1st-4th, 2013).
12. "ImPACT"- FIRB futuro in ricerca: structural characterization of fluorenone-zeolite L host-guest complex", **L. Gigli**, R. Arletti, G., E. Fois, G. Martra, Tabacchi, J. G. Vitillo, G. Vezzalini, S. Quartieri, AIZ 2013, Riccione, Italy (September 15th–18th, 2013).
13. "Pressure-induced hyperconfinement in zeolites: today, tomorrow", **G.D. Gatta**, R. Arletti, G. Tabacchi, J. G. Vitillo, AIZ 2013 Riccione, Italy (September 15th-18th, 2013).
14. "CO_2 adsorption on Mixed Ligand Zr-MOFs", **J. Ethiraj**, S.Chavan, F. Bonino, J. G. Vitillo, S. Svelle, K.Petter Lillerud, S. Bordiga, "EUROMAT 2013", Sevilla, Spain (September 8th-13th, 2013).
15. "CO_2 capture and activation in functionalized microporous materials", **S. Chavan**, S. Øien , G. C. Shearer, S. Svelle, U. Olsbye, K. P. Lillerud, S. Bordiga, J. Ethiraj, J. G. Vitillo, V. Crocellà, G. Ricchiardi, C. Lamberti, G. Agostini, B. Civalleri, "EuropaCat-XI", Lyon, France (September 1st-6th, 2013).
16. "Active sites generation in heterogeneous Ziegler-Natta catalysts for ethylene polymerization: an in situ spectroscopic investigation", **E. Groppo**, K. Seenivasan, E. Gallo, A. Piovano, F. Bonino, J. G. Vitillo, A. Sommazzi, C. Lamberti, P. Glatzel, S. Bordiga, "EuropaCat-XI", Lyon, France (September 1st-6th, 2013).
17. "Synthesis and characterization of poly-RTIL based on divinylbenzene-co-imidazole micro-spheres", **A. Dani**, E. Groppo, C. Barolo, J. G. Vitillo, S. Bordiga, Eupoc2013 on Polymers & Ionic Liquids, Gargnano, Italy (September 1st-5th, 2013).
18. "A complete spectroscopic and adsorptive study of a thermally robust pyrazolato-based PCP containing cubic octanuclear Ni(II) clusters", **L. Mino**, S. Bordiga, J. G. Vitillo, E. Gallo, P. Glatzel, C. Lamberti, V. Colombo, A. Maspero, S. Galli, "XX Italian Synchrothron Radiation Society (SILS) National Meeting", Cosenza, Italy (July 18th-20th, 2012).
19. "Characterization of the Properties of Metal-Organic Frameworks from First Principles: Looking for Answers Combining Theory and Experiments", **L. Valenzano**, B. Civalleri, J. C. Tan, J. G. Vitillo, C. Lamberti, "Crystal Engineering (Gordon Research Seminar), "Metal-Organic Materials: Past, Present, and Future", Waterville Valley Resort, NH (June 9th-10th, 2012).

20. "Structure-activity relationships of simple molecules adsorbed on MOF materials: in situ experiments vs. theory", S. Chavan, L. Valenzano, B. Civalleri, J. G. Vitillo, F. Bonino, S. Bordiga, **C. Lamberti**, "241st ACS National Meeting & Exposition", Anaheim, CA (March 27th-31st, 2011).
21. "Combined use of spectroscopies to understand adsorption properties of MOFs", S. Chavan, F. Bonino, C. Lamberti, L. Valenzano, J. G. Vitillo, P. D.C. Dietzel, **S. Bordiga**, "MOF Synthesis and Structure", London, United Kingdon (November 25th, 2010).
22. "Experimental and Computational Studies on the Adsorption of CO, CO_2 and N_2 on MOF-74-Mg", C. Otero Areán, S. Bordiga, **S. Chavan**, B. Civalleri, G. Turnes Palomino, L. Valenzano, J. G. Vitillo, and K. Sumida, "IZC-IMMS2010", Sorrento, Italy (July 4th-9th, 2010).
23. "Direct evidence of adsorption induced Cr^{II} mobility on the SiO_2 surface upon complexation by CO", **D. Gianolio**, E. Groppo, J. G. Vitillo, A. Damin, S. Bordiga, A. Zecchina, C. Lamberti, "XVIII Meeting of the Italian Society for Synchrotron Radiation (SILS 2010"), Padova, Italy (June 24th-26th, 2010).
24. "Determination of spin-flips for $Cp_2Cr(II)$ in confined state by combined EXAFS, solid-state NMR and Raman spectroscopies", **E. Groppo**, J. Estephane,, J. G. Vitillo, A. Damin, D. Gianolio, C. Lamberti, S. Bordiga, E. A. Quadrelli, J. M. Basset, G. Kervern, L. Emsley, G. Pintacuda, A. Zecchina, "XVIII Meeting of the Italian Society for Synchrotron Radiation (SILS 2010)", Padova, Italy (June 24th-26th, 2010).
25. "EXAFS study of CPO-27-Ni metallorganic framework upon dehydration and coordination of ligand molecules (NO, CO and N_2):comparison between experiments and ab initio periodic calculations", **C. Lamberti**, F. Bonino, S. Chavan , J. G. Vitillo, E. Groppo, G. Agostini, L. Valenzano, B. Civalleri, P. D. C. Dietzel, C. Prestipino, S. Bordiga," XVIII Meeting of the Italian Society for Synchrotron Radiation (SILS 2010)", Padova, Italy (June 24th-26th, 2010).
26. ""Experimental and Computational Studies on the Adsorption of CO, CO_2 and N_2 on MOF-74-Mg", C. Otero Areán, S. Bordiga, S. Chavan, G. Turnes Palomino, **L. Valenzano**, J. G. Vitillo, "Gas separation and gas storage using porous materials" CECAM-HQ-EPFL workshop, Lausanne, Switzerland (May 17th-19th, 2010).
27. "Interaction between hydrogen gas, synthetic montmorillonites and natural argillites at high temperature", L. Leone, M. Didier, L. Truche, G. Berger, J. M. Greneche, J. G. Vitillo, A. Zecchina, F. Bardelli, E. Giffaut, **L. Charlet**, "Clays in Natural & Engineered Barriers for Radioactive Waste Confinement", Nantes, France (March 29th-April 1st, 2010).
28. "Role of Extraframework Metal Sites for Hydrogen Adsorption into the pores of A Zeolite: a Variable Temperature (300 – 15K) FTIR study", **O. Zavorotynska**, J. G. Vitillo, G. Spoto, A. Zecchina, "HYSYDAYS, 3rd World Congress of Young Scientists on Hydrogen, ECO-EFFICIENCY BIENNIAL Quinta edizione", Torino, Italy (October 7th-9th, 2009).
29. "Functionalized metal-organic framework by organometallic compounds", S. Chavan, E. Groppo, J. G. Vitillo, **S. Bordiga**, C. Larabi, T. Maishal, E. A. Quadrelli, C. Thieuleux, J.-M. Basset. K. P. Lillerud, P, D. C. Dietzel, "MOFs on the Road to Applications Workshop 2009", Oslo, Norway (June 17th-19th, 2009).
30. "Functionalized metal-organic framework by organometallic compounds", S. Chavan, E. Groppo, J.G. Vitillo, **S. Bordiga**, C. Larabi, T. Maishal, E.A. Quadrelli, C. Thieuleux, K.P., Lillerud, P.D.C. Dietzel, J-M Basset, "VII Convegno Nazionale sulla Scienza e Tecnologia dei Materiali", Tirrenia, Italy (June 9th-12th, 2009).
31. "Role of exposed metal sites in adsorptive properties of CPO-27-M: combined use of ab-initio modeling and experimental results", **C. Lamberti**, E. Groppo, L. Valenzano, B. Civalleri, S. Chavan, F. Bonino, J. G. Vitillo, A. Zecchina and S. Bordiga, " OPERANDO III", Rostock-Warnemünde, Germany (April 19th-23rd, 2009).
32. "Storage of Hydrogen as a Guest of a Nanoporous Polymeric Crystalline Phase", **O. Zavorotynska**, J. G. Vitillo, A. Zecchina, G. Spoto, C. Daniel, S. Giudice, S. Figueroa, G. Guerra, "Europolymer Conference of the European Polymer Federation (EUPOC 2008)", Gargnano, Italy (June 1st– 5th, 2008).
33. "High NO adsorption on Ni(II) ions in CPO-27 Metal Organic Framework", **F. Bonino**, S. Chavan, L. Regli, J. G. Vitillo, E. Groppo, C. Lamberti, C. Prestipino, P.D.C. Dietzel, S. Bordiga and A. Zecchina, "XXXVII congresso nazionale di chimica fisica", Camogli, Italy (February 24th-29th, 2008).
34. "Structure and reactivity of chromocene confined into nanovoids with a different polarity: a spectroscopic and theoretical investigation", **E. Groppo**, J. Estephane,, A. Damin, J. G. Vitillo, C.

Lamberti, S. Bordiga, A. Zecchina, "EUROPACAT VIII - From theory to industrial practice" Turku/Åbo, Finland (August 26th-31th, 2007).

35. "Computational and spectroscopic screening of microporous materials for molecular hydrogen storage", **G. Ricchiardi**, J. G. Vitillo, G. Spoto, S. Bordiga, A. Zecchina, "XXXVI Congresso Nazionale di Chimica Fisica", Gallipoli, Italy (June 17th-22nd, 2007).
36. "H_2 storage in microporous materials: a comparison between zeolites and MOFs" , **G. Ricchiardi**, L. Regli, J.G. Vitillo, D. Cocina, S. Bordiga, C. Lamberti, G. Spoto, A. Zecchina, M. Bjørgen, K.P. Lillerud, "EHEC 2005, 2nd European Hydrogen Energy Conference", Zaragoza, Spain (November 22nd-25th, 2005).
37. "H_2 storage in microporous materials: a comparison between zeolites and MOFs" , **L. Regli**, J.G. Vitillo, D. Cocina, S. Bordiga, C. Lamberti, G. Spoto, G. Ricchiardi, A. Zecchina, "HYSYDAYS, 1st World Congress of Young Scientists on Hydrogen, ECO-EFFICIENCY BIENNIAL Terza edizione", Torino, Italia (May 18th-21st, 2005).
38. "FTIR spectroscopic study of the adsorption of CO and H_2 on Na- and Sr- exchanged ETS-4", **S. Usseglio**, D. Cocina, J. G. Vitillo, G. Spoto, A. Zecchina, presented at "Micro-and Mesoporous Mineral Phases - Mineralogical, Crystallographic and Technological Aspects", Roma, Italy (December 6th-7th, 2004).

Posters to congresses/conferences/schools

The presenting author of the contribution is indicated in bold.

1. "The truth about CO and NO adsorption on MIL-100(Fe) and related materials: a DFT investigation", **J.G. Vitillo**, L. Gagliardi, #RSCPoster Twitter Conference 2022 (March 1-2, 2022).
2. "Choosing the best neighbor for iron for the methane to methanol reaction in MOFs", **J.G. Vitillo**, C.C. Lu, C.J. Cramer, A. Bhan, L. Gagliardi, Catalysis Science & Technology 10th Anniversary Symposium, United Kingdom + online (16 - 17 November 2021).
3. "Metal influence on the gate opening in zeolitic imidazolate frameworks", **J. G. Vitillo**, L. Gagliardi, 2nd International School on Porous Materials, Lake Como School of Advanced Studies Como, Italy (21-25 June 2021)
4. "Pushy neighbors: the most effective way to modify the barriers for methane activation in single iron-based MOF catalysts", **J. G. Vitillo**, RSC Twitter Poster Conference 2021 (March 2-3, 2021).
5. "H-bonds and redox reactions make $Co_2(OH)_2$BBTA the first extended framework with a negative cooperativity behavior for O_2", **J. G. Vitillo**, RSC Porous Materials Group poster conference #RSCPMGPoster, Twitter (23-24 July 2020).
6. "Single Fe(II) sites in MIL-type metal organic frameworks for the oxidation of light alkanes to alcohols", **J. G. Vitillo**, A. Bhan, C. J. Cramer, C. Lu, L. Gagliardi, RSC Twitter Poster Conference 2020 (March 3, 2020).
7. "Single Fe(II) sites in MIL-type metal organic frameworks for the oxidation of light alkanes to alcohols", **J. G. Vitillo**, A. Bhan, C. J. Cramer, C. Lu, L. Gagliardi, RSC Twitter Poster Conference 2019 (March 5-6, 2019).
8. "Immobilization of earth abundant metals coordinated in heterobimetallic ligand scaffolds on metal organic frameworks", **K. Riley**, S.P. Desai, J. G. Vitillo, C. Lu "255th ACS National Meeting", New Orleans, LA (March 18th-22nd, 2018).
9. "Immobilization of Earth Abundant Metals Coordinated in Heterobimetallic Ligand Scaffolds on Metal Organic Frameworks", **J. G. Vitillo**, K. M. Riley, S. P. Desai, Z. Garr, A. Platero-Prats, J. Zheng, M. Simons, T. Webber, K. W. Chapman, D. M. Camaioni, O. K. Farha, J. T. Hupp, R. Lee Penn, C. Lu, L. Gagliardi, "3rd KAUST Research Conference: New Challenges in Heterogeneous Catalysis", Thuwal, Kingdom of Saudi Arabia (January 29-31, 2018).
10. "Effect of Pore Size, Solvation and Damaging on the Perturbation of Adsorbates: the Mg_2(dobpdc) Case Study", **J. G. Vitillo**, and S. Bordiga, "The Minnesota Workshop on Ab initio Modelling in Solid State Chemistry with CRYSTAL", Minneapolis (USA) (July 9-14, 2017).

11. "Increasing the Stability of Mg_2(dobpdc) Metal-Organic Framework in Air Through Solvent Removal", J. G. Vitillo, S. Bordiga, "5th International Conference on Multifunctional, Hybrid and Nanomaterials", Lisbon, Portugal (6-10 March 2017).
12. "Reversible water adsorption at room temperature in amine-free MOF for CO_2 capture: towards real post-combustion applications", **J. G. Vitillo**, A. Masala, G. Mondino, C. Grandeb, R. Blom, M. Manzoli, M. Marshall, S. Bordiga, "5th International Conference on Multifunctional, Hybrid and Nanomaterials", Lisbon, Portugal (6-10 March 2017).
13. "Benzylamine coupling catalysed by MIL-125-NH_2", **J. G. Vitillo**, F. X. Llabrés i Xamena, S. Bordiga, "Harnessing the Power of Light in Hybrid Materials", Torino, Italy (October 6th-7th, 2016).
14. "Chromophoric Linkers For Hybrid Materials", **M. Bellizzi**, E. Battistel, C. Atzori, J.G. Vitillo, N. Barbero, C. Barolo, F. Bonino, B. Civalleri, "Harnessing the Power of Light in Hybrid Materials", Torino, Italy (October 6th-7th, 2016).
15. "Synthesis and characterization of a Ce-based metal-organic framework (MOF)", **C. Atzori**, J. Ethiraj, J. G. Vitillo, K. Lomachenko, "Harnessing the Power of Light in Hybrid Materials", C. Lamberti, F. Bonino, S. Bordiga, Torino, Italy (October 6th-7th, 2016).
16. "Reversible water adsorption at room temperature in an amine-free MOF for CO_2 separation. Towards Real Post-Combustion Capture", A. Masala, J. G. Vitillo, G. Mondino; C. A. Grande; R. Blom; M. Manzoli[1]; M. Marshall; **S. Bordiga**, XLIV Congresso della Divisione di Chimica Fisica della SCI, Napoli, Italia (September, 20th-23rd, 2016).
17. "Comparison of the material degradation rate measurements using different approaches on example of Li-Mg-N-H system.", **M. Bielewski**, E. Napolitano, J. G. Vitillo, M Baricco, A. Masala, M. Fichtner, J. Hu, presented at MH2016, Interlaken, Switzerland (August 7-12th, 2016).
18. "Cycling behaviour of hydrogen storage material developed under SSH2S project.", **M. Bielewski**, E. Napolitano, P. Moretto, J. G. Vitillo, M Baricco, A. Masala, M. Fichtner, J. Hu, presented at MH2016, Interlaken, Switzerland (August 7th-12th, 2016).
19. "BOR4STORE – Fast, reliable and cost effective boron hydride based high capacity solid state hydrogen storage materials", **K. Taube**, G. Capurso, J. M. Bellosta v. Colbe, C. Pistidda, M. Dornheim, T. Guerrero Cervera, D. Márquez Gómez, I. Castellano Moreno, H. Zoz, D. Yigit, R. Keder, M. Krovacek, T. Jensen, B. Richter, B. Hansen, B. Hauback, S. Deledda, O. Zavorotynska, M. Baricco, J. G. Vitillo, E. Pinatel, A. Züttel, A. Borgschulte, N. Stadie, A. Stubos, G. Charalambopoulou, T. Steriotis, A. Yiotis, presented at 10th Symposium Hydrogen & Energy, Mt. Zao, Japan (Feb. 21th - 26th, 2016).
20. "$LiBH_4$ /$ZrCoH_3$ doping effect on the H_2 storage kinetics of $LiNH_2$ -MgH_2 complex hydride", J. G. Vitillo, **A.Masala**, S. Bordiga and M. Baricco, presented at ENERCHEM-1 - I congresso nazionale del gruppo interdivisionale ENERCHEM, Firenze, Italy (Feb. 18th - 20th, 2016).
21. "Bi-functional Metal-organic Frameworks for CO_2 capture", **S. M. Chavan**, H. Reinsch, G. C. Shearer, U. Olsbye, S. Svelle, K. P. Lillerud, J. G. Vitillo, S. Bordiga, presented at EuroMOF 2015 congress, Postdam, Germany (October 11th-14th, 2015).
22. "Solvent driven gate opening in MOF-76-Ce: effect on CO_2 adsorption", J. Ethiraj, **F. Bonino**, J. G. Vitillo, K. A. Lomachenko, C. Lamberti, H. Reinsch, K. P. Lillerud and S. Bordiga, presented at EuroMOF 2015 congress, Postdam, Germany (October 11th-14th, 2015).
23. "New insight in UTSA-16 - CO_2 interaction", A. Masala, J. G. Vitillo, F. Bonino, M. Manzoli, C. A. Grande, **S. Bordiga**, presented at EuroMOF 2015 congress, Postdam, Germany (October 11th-14th, 2015).
24. "Design of high surface area poly(ionic liquid)s to convert CO_2 into ethylene carbonate", A. Dani, E. Groppo, C. Barolo, J. G. Vitillo, S. Bordiga, ISHHC17, Utrecht, the Netherlands (July 12th-15th, 2015).
25. "Structural evolution of MOF-76-Ce upon desolvation",**K. A. Lomachenko**, C. Lamberti, J. Ethiraj, F. Bonino, J. G. Vitillo, H. Reinsch, K. P. Lillerud, S. Bordiga, XAFS16 conference, Karlsruhe, Germany (August 23rd-25h, 2015).
26. "Hydride formation in Pd/C nano-catalysts studied by in situ Pd K-edge XAS and XRPD", **A. L. Bugaev**, A. A. Guda, K. A. Lomachenko, A. Lazzarini, V. V. Srabionyan, J. G. Vitillo, A Piovano, E. Groppo, L. A. Bugaev, A. V. Soldatov, V. P. Dmitriev, R. Pellegrini, J. A. van Bokhoven, C. Lamberti, XAFS16 conference, Karlsruhe, Germany (August 23rd-25h, 2015).

27. "Hydride formation in Pd/C nano-catalysts studied by in situ Pd K-edge XAS and XRPD", **A. L. Bugaev**, A. A. Guda, A. Lazzarini, K. A. Lomachenko, V. V. Srabionyan, V. P. Dmitriev, E. Groppo, J. G. Vitillo, R. Pellegrini, L. A. Bugaev, A. V. Soldatov, J. A. van Bokhoven, C. Lamberti, XXIII SILS Meeting, Trento, Italy (July 8th-10 th, 2015).
28. "Synthesis and characterization of a Ce-based metal-organic framework (MOF)", **C. Atzori**, J. Ethiraj, J. G. Vitillo, K. Lomachenko, C. Lamberti, S. Bordiga, F. Bonino, Training School 'Bottom-Up Approaches for Hybrid Materials', Ljubljana, Slovenia (26th-28th may, 2015).
29. "Decomposition of $Mg(BH_4)_2$ with Cobalt Additives: An in-situ Synchrotron X-ray Study Combined with Raman Spectroscopy", **O. Zavorotynska**, M.N. Guzik, J. G. Vitillo, I. Saldan, S. Deledda and B.C. Hauback, Norwegian Synchrotron- and Neutron User Meeting 2015, Stavanger (January 19th-20th, 2015).
30. "A new perylene dye embedded into the zeolite L:SR-XRPD structural characterization", **L. Gigli**, R. Arletti, J.G. Vitillo, G. Martra, G. Calzaferri, A. Devaux, P. Belser, S. Quartieri, G. Vezzalini, "FEZA 2014", Leipzig, Germany (September 8th-11th, 2014).
31. "A new perylene dye embedded into the zeolite L:SR-XRPD structural characterization", L. Gigli, R. Arletti, J.G. Vitillo, G. Martra, G. Calzaferri, A. Devaux, P. Belser, S. Quartieri, **G. Vezzalini**, "IMA2014, 21st General Meeting of the International Mineralogical Association", Gauteng, South Africa (September 1st-5th, 2014).
32. "Cerium based Metal-Organic framework for CO_2 capture", **J. Ethiraj**, H. Reinsch, J.G. Vitillo, F. Bonino, K.P. Lillerud, S. Bordiga, "Fundamentals and Applications of Cerium Dioxide in Catalysis", Udine, Italy (July 11, 2014 — July 14, 2014).
33. "From Carbon Dioxide to Cyclic Carbonates: reaction catalyzed by Poly(ionic Liquid)s", **A. Dani**, E. Groppo, J. G. Vitillo, C. Barolo, S. Bordiga, Soft Matter School, Venezia, Italy (June 16th-20th, 2014).
34. "Tuned to Perfection: Ironing out the Defects in UiO-66", **G. Shearer**, S. Chavan, J. Ethiraj, J. G. Vitillo, S. Svelle, U. Olsbye, C. Lamberti, S. Bordiga, K. P. Lillerud, "NSC2014 - 16th Nordic Symposium on Catalysis", Oslo, Norway (June 15th-17th, 2014).
35. "Role of additives in hydrogen sorption on $LiNH_2$-MgH_2 system", **J. G. Vitillo**, J. Hu, F. Dolci, A. Masala, S. Bordiga, M. Fichtner, M. Baricco, "FCH JU projects on hydrogen storage Joint Workshop", Santa Cruz de Tenerife, Spain (October 1st-4th, 2013).
36. "ImPACT – Impose Pressure and Change Technology: Pressure-induced organized nanostructures and shape-driven segregation in zeolites", R. Arletti, G. D. Gatta, G. Tabacchi, **J. G. Vitillo**, "17th IZC, 17th International Zeolite Conference", Moscow, Russia (July 7th-12th, 2013).
37. "Enhancing CCS performances of microporous materials by basic oxide coating", **J. G. Vitillo**, G. Ricchiardi, V. Crocellà, S. Bordiga, "17th IZC, 17th International Zeolite Conference", Moscow, Russia (July 7th-12th, 2013).
38. "Structural Characterization Of Fluorenone Dye In Zeolite L", **L. Gigli**, G. Agostini, R. Arletti, E. Fois, C. Lamberti, G. Tabacchi, S. Quartieri, J.G. Vitillo, G. Vezzalini, "17th IZC, 17th International Zeolite Conference", Moscow, Russia (July 7th-12th, 2013).
39. "ImPACT – Impose Pressure and Change Technology", **J. G. Vitillo**, R. Arletti, G. D. Gatta, G. Tabacchi, "XL Congresso Nazionale di Chimica Fisica", Alessandria, Italy (June 23rd-27th, 2013).
40. "Vibrational spectrum of dihydrogen adsorbed on a $PtCl_2$-functionalized UiO-67 metal organic framework", **A. Piovano**, G. Agostini, S. Øien, J. G. Vitillo, K. P. Lillerud, C. Lamberti, "DMM-II conference", Glasgow, Scotland (July 5th-6th, 2013).
41. "Active sites generation in heterogeneous Ziegler-Natta catalysts for ethylene polymerization: an in situ spectroscopic investigation", **E. Groppo**, K. Seenivasan, E. Gallo, A. Piovano, F. Bonino, J. G. Vitillo, A. Sommazzi, C. Lamberti, P. Glatzel, S. Bordiga, "XIth European Congress on Catalysis "20 years of European Catalysis... and beyond", Lyon, France (September 1st-6th, 2013).
42. "From theory to experimental study and synthesis optimization of magnesium and zinc mixed borohydrides", **G. Kalantzopoulos**, E. Albanese, J. G. Vitillo, E. Pinatel, B. Civalleri, S. Deledda, R. H. Heyn, S. Bordiga, M. Baricco and B. C. Hauback, "7th Int. Symposium Hydrogen & Energy", Stoos, Switzerland (January 21st- 25th, 2013).

43. "Fundamental studies on CO_2 adsorption on MOFs", **S. Bordiga**, F. Bonino, C. Lamberti, J. G. Vitillo, B. Civalleri, G. Ricchiardi, S. Øien, G. C. Shearer, S. Chavan, S. Svelle, M. Tilset, K. P. Lillerud ,"Large Volume CO_2 recycling to fuels and materials ", Lyon, France (September 27th-28th , 2012).
44. "Theoretical And Experimental Study On $Mg(BH4)_2$-$Zn(BH_4)_2$ Mixed Borohydrides", E. Albanese, G. Kalantzopoulos, J. G. Vitillo, E. Pinatel, B. Civalleri, S. Deledda, S. Bordiga, B. Hauback, **M. Baricco** "MH2012 conference", Kyoto, Japan (October 21th-26th, 2012).
45. "Effect of additives on hydrogen sorption reactions in $LiNH_2/MgH_2$ mixtures prepared by ball milling", **M. Baricco**, J. G. Vitillo, E. Pinatel, S. Bordiga, E. Gil, J. Hu, M. Fichtner, G. Kalantzopoulos, S. Deledda, B. Hauback, F. Dolci, P. Moretto, "19th ISMANAM 2012", Moscow, Russia (June 18th-22th, 2012).
46. "Soft method for the synthesis of chiral organometallic@MOF via isocyanates", **T. Lescouet**, J. G. Vitillo, D. Farrusseng, S. Bordiga, "MOF2012", Edinburgh, UK (September 16th-19th, 2012).
47. "Green route to make reactive MOFs: diphosgene-free grafting of isocyanate groups", **J. G. Vitillo**, T. Lescouet, M. Savonnet, D. Farrusseng, S. Bordiga, "MOF2012", Edinburgh, UK (September 16th-19th, 2012).
48. "Soft method for the synthesis of chiral organometallic@MOF via isocyanates", **T. Lescouet**, J. G. Vitillo, D. Farrusseng, S. Bordiga, "ZMPC 2012 International Symposium on Zeolites and MicroPorous Crystals", Hiroshima, Japan (July 28th-August 1st, 2012).
49. "Low temperature activation and reactivity of CO_2 over a Cr^{II}-based heterogeneous catalyst", **J. G. Vitillo**, E.a Groppo, A. Zecchina, C. Barzan and S. Bordiga, "2012 MRS Spring Meeting Forum on the Many Facets of Sustainable Development", San Francisco, CA (April 9th, 2012).
50. "GRCS web site - Global Resource Center for Sustainability", **J. G. Vitillo**, I. Aguiar, A. L. Noguera, M. E. Pérez Barthaburu, A. Vicente, and the 2011 World Materials Summit Student Congress participants, "2012 MRS Spring Meeting Forum on the Many Facets of Sustainable Development", San Francisco, CA (April 9th, 2012).
51. "Combined study of structural properties of metal-organic frameworks changing organic linkers and metal centers", **D. Gianolio**, J.G. Vitillo, B. Civalleri, S. Bordiga, M. H. Nilsen, S. Jakobsen, K. P. Lillerud, L. Valenzano, C. Lamberti, "XIX Italian Synchrotron Radiation Society (SILS) National Meeting", Trieste, Italy (September 1st-3rd, 2011).
52. "Nanoporous crystalline phases of poly(2,6-dimethyl-1,4-phenylene)oxide", **C. Daniel**, S. Longo, G. Fasano, J. G. Vitillo, G. Guerra, "XX Convegno Italiano AIM", Terni, Italy (September 4th-8th, 2011).
53. "Response of CPO-27-Ni towards gas molecules", **J. G. Vitillo**, S. Chavan, F. Bonino, E. Groppo, C. Lamberti, P. D. C. Dietzel, A. Zecchina, S. Bordiga, "Workshop on Adsorption in Compliant Solids", Paris, France (June 9th-11th, 2011).
54. "Nanoporous Crystalline Polymers and Energy Applications", **C. Daniel**, J. G. Vitillo, G. Spoto, G. Guerra, "ISPOC", Torino, Italy (June 5th-8th, 2011).
55. "Experimental and Theoretical Study on $NaMgH_3$ Structural and Thermodynamic Properties", **D. Pottmaier**, E. R. Pinatel, J. G. Vitillo, M. Baricco, "Solid State Hydrogen Storage Status, Perspectives and Industrial Application", Torino, Italy (October 5th-6th, 2010).
56. "Tailoring MOFS for CO_2 capture: the amino-effect", **J. G. Vitillo**, S. Chavan, B. Seyyedi, F. Bonino, D. Farrusseng, S. Bordiga, "CO_2 challenge forum: International Scientific Forum on CO_2 chemistry and biochemistry", Lyon, France (September 27th-28th, 2010).
57. "Tailoring MOFS for CO_2 capture: the amino-effect", **J. G. Vitillo**, S. Chavan, B. Seyyedi, F. Bonino, D. Farrusseng, S. Bordiga, "MOF2010", Marseille, France (September 5th-8th, 2010).
58. "Hydrogen Adsorption in Isoreticular Metal-Organic Frameworks Based on $Zr_6O_4(OH)_4$ Building Block", **S. Chavan**, O. Zavorotynska, J.G. Vitillo, S. Bordiga, K. P. Lillerud, M. H. Nilsen, S. Jakobsen, "MOF2010", Marseille, France (September 5th-08th, 2010).
59. "Hydrogen Adsorption in Isoreticular Metal-Organic Frameworks Based on $Zr_6O_4(OH)_4$ Building Block", **O. Zavorotynska**, J. G. Vitillo, S. Chavan, K. P. Lillerud, M. H. Nilsen S. Jakobsen, S. Bordiga, "Gas separation and gas storage using porous materials, CECAM-HQ-EPFL workshop" Lausanne, Switzerland (May 17th-19th, 2010).
60. "Cyclodextrin nanosponges as effective gas carriers", **F. Trotta**, R. Cavalli, K. Martina, J. G. Vitillo, S. Bordiga, S. Swaminathan, K. Ansari. P. Vavia, "First European Cyclodextrin Conference", Aalborg, Denmark (October 11th-13th, 2009).

61. "Stability and reactivity of grafted $Cr(CO)_3$ species on MOFs", **J. G. Vitillo**, E. Groppo, S. Bordiga, S. Chavan, G. Ricchiardi, A. Zecchina, "MSSC2009 - Ab initio Modelling in Solid State Chemistry - Torino Edition (Experienced Users): Introducing CRYSTAL09 and CRYSCOR", Torino (September 6th-11th, 2009).
62. "Adsorption of hydrogen, methane and hydrogen/methane mixtures on Na-A zeolites: a FTIR spectroscopic study at variable (300-20 K) temperature", **O. Zavorotynska**, J. G. Vitillo, G. Spoto, A. Zecchina, "3rd international symposium on Advanced Micro and Mesoporous material", Albena, Bulgaria (September 6th-9th, 2009).
63. "Role of the exposed metal sites in adsorptive properties of M_2(DOBDC): combined use of experimental results and ab initio modelling", **S. Chavan**, F. Bonino, C. Lamberti, S. Bordiga, E. Groppo, J. G. Vitillo, L. Valenzano, B. Civalleri, A. Zecchina, P. D. C. Dietzel, K. Sumida, "3rd international symposium on Advanced Micro and Mesoporous material", Albena, Bulgaria (September 6th-9th, 2009).
64. "Metal-organic framework compounds with accessible metal atoms: from model systems to application testing", **P. D. C. Dietzel**, S. Chavan, J. G. Vitillo, R. Blom, R.e E. Johnsen, F. Bonino, E. Groppo, L. Regli, K. Sillar, C. Lamberti, S. Bordiga, A. Carati, M. Tagliabue, C. Rizzo, H. Fjellvåg, J. Sauer, F. B. Johansson, M. Brorson, C. Larabi, E. A. Quadrelli, "MOFs on the Road to Applications Workshop 2009", Oslo, Norway (June 17th-19th, 2009).
65. "Role of the exposed metal sites in adsorptive properties of M_2(DOBDC): combined use of experimental results and ab initio modelling", **J. G. Vitillo**, F. Bonino, C. Lamberti, S. Chavan, E. Groppo, L. Valenzano, B. Civalleri, S. Bordiga, P. D. C. Dietzel, "MOFs on the Road to Applications Workshop 2009", Oslo, Norway (June 17th-19th, 2009).
66. "Stability and reactivity of grafted $Cr(CO)_3$ species on MOFs", **J. G. Vitillo**, E. Groppo, S. Bordiga, S. Chavan, G. Ricchiardi, A. Zecchina, "Catalysis From First Principles", Wien, Austria (May 25th-28th, 2009).
67. "Role of the exposed metal sites in adsorptive properties of M_2(DOBDC): combined use of experimental results and ab initio modelling", **S. Bordiga**, F. Bonino, C. Lamberti, S. Chavan, E. Groppo, J. G. Vitillo, L. Valenzano, B. Civalleri, P.D.C. Dietzel, "VII Convegno Nazionale sulla Scienza e Tecnologia dei Materiali", Tirrenia, Italia (June 9th-12th, 2009).
68. "Modeling CO and N_2 adsorption at Cr surface species of Phillips catalyst by hybrid density functionals: effect of Hartree-Fock exchange percentage", **A. Damin**, J. G. Vitillo, C. Lamberti, E. Groppo, A. Zecchina, "3rd IDECAT Conference on Catalysis, frontier in catalysis and material chemistry", Porquerolles, France (May 19th- 24th, 2009).
69. "Stability and reactivity of grafted $Cr(CO)_3$ species on MOF linkers: a computational study", **J. G. Vitillo**, A. Damin, S. Chavan, E. Groppo, S. Bordiga, A. Zecchina, "Ab initio simulation of crystalline solids: history and prospects. Workshop in honour of Prof. Cesare Pisani", Torino, Italy (September 8th-9th, 2008).
70. "Performances of DFT functionals in describing the $CrCp_2$/CO adduct", **A. Damin**, J. G. Vitillo, E. Groppo, J. Estephane, C. Lamberti, S. Bordiga, A. Zecchina, "Ab initio simulation of crystalline solids: history and prospects. Workshop in honour of Prof. Cesare Pisani" Torino, Italy (September 8th-9th, 2008).
71. "Functionalized MOFs for Catalysis and Gas Storage", **S. M. Chavan**, S. Bordiga, J. G.Vitillo, J. Uddin, F. Bonino, K. P. Lillerud, C. Larabi, E. Groppo, "Gordon Research Conferences – Catalysis", Colby-Sawyer College, New London, NH (June 22nd-27th, 2008).
72. "Local structure of CPO-27-Ni metallorganic framework upon dehydration and coordination of NO and CO", F. Bonino, S. Chavan, J. G. Vitillo, E. Groppo, G. Agostini, **C. Lamberti**, R. E. Johnsen, H. Fjellvåg, P. D. C. Dietzel, C. Prestipino, S. Bordiga, " XVI Italian Synchrotron Radiation Society SILS National Meeting", Palermo, Italia (June 26th-28th, 2008).
73. "High NO adsorption on Ni(II) ions in CPO-27 Metal Organic Framework", **F. Bonino**, S. Chavan, L. Regli, J. G. Vitillo, E. Groppo, C. Lamberti, C. Prestipino, P.D.C. Dietzel, S. Bordiga, A. Zecchina, "1st International Conference on Metal Organic Frameworks and Open Framework Compounds", Augsburg, Germany (October, 8th- 10th, 2008).

74. "Performances of DFT functionals in describing the $CrCp_2$/CO adduct", **A. Damin**, J. G. Vitillo, E. Groppo, J. Estephane, C. Lamberti, S. Bordiga, A. Zecchina, "2nd IDECAT Conference on Catalysis: concepts, complexity and diversity in catalysis", Porquerolles, France (May 31st-June 5th, 2008).
75. "H_2 adsorption in cross-linked polymers: a FTIR and theoretical study", G. Spoto, J. G. Vitillo, L. Regli, G. Ricchiardi, **A. Damin**, O. Zavorotynska, A. Zecchina, "EUROPACAT VIII - From theory to industrial practice", Turku/Åbo, Finland (August 26th-31th, 2007).
76. "Functional Metal Organic Frameworks as Heterogeneous Catalysts - an EU Project", **G. Ricchiardi**, S. Bordiga, J. Vitillo, L. Regli, S. Chavan, A. Zecchina, "Simulation, design and crystal engineering of metal-organic frameworks", Lyon, France (July 16th-18th, 2007).
77. "Role of exposed metal sites in the Hydrogen storage in MOFs", **J. G. Vitillo**, L. Regli, S. Chavan, G. Ricchiardi, G. Spoto, A. Zecchina, S. Bordiga, "Simulation, design and crystal engineering of metal-organic frameworks", Lyon, France (July 16th-18th, 2007). *(with presentation)*
78. "IR spectroscopy and modeling of H_2 adsorption and single-site catalysed ortho-para conversion on ETS-10" , **J. G. Vitillo**, G. Spoto, G. Ricchiardi, A. Zecchina, "VIII AIZ Congress", Torino, Italy (July 1st-4th, 2007).
79. "Structure and reactivity of chromocene confined into nanovoids with a different polarity: from organometallic chemistry to catalysis", **E. Groppo**, J. Estephane, A. Damin, J. G. Vitillo, G. Spoto, C. Lamberti, S. Bordiga, A. Zecchina, "ISHHC XIII - International Symposium on relation between homogeneous and heterogeneous catalysis", Berkeley, USA (July 16th-20th, 2007).
80. "FTIR spectroscopy and thermodynamics of hydrogen adsorbed in a cross-linked polymer", **O. Zavorotynska**, G. Spoto, J. Vitillo, A. Damin, F. Bonino, A. Zecchina, "XXXVI Congresso Nazionale di Chimica Fisica", Gallipoli, Italy (June 17th-22nd, 2007).
81. "Modeling of H_2 adsorption and spectroscopic observation of the ortho-para conversion on the ETS-10 titanosilicate", **G. Ricchiardi**, J. G. Vitillo, D. Cocina, G. Spoto, A. Zecchina, "XXXVI Congresso Nazionale di Chimica Fisica", Gallipoli, Italy (June 17th-22nd, 2007).
82. "PRISMA 2004 Project Metal Organic Frameworks for Adsorption and Catalysis: from Characterization to Crystal Design", **G. Ricchiardi**, J. G. Vitillo, L. Regli, G.Spoto, S.Bordiga, C. Lamberti, A. Zecchina "VI Convegno Nazionale sulla Scienza e Tecnologia dei Materiali", Perugia, Italy (June 12th-15th, 2007).
83. "Structure and reactivity of chromocene confined into nanovoids with a different polarity: a way to understand the Union Carbide catalyst's reactivity", **J. Estephane**, E. Groppo, E. A. Quadrelli, M. Taoufik, C. Prestipino, M. Tromp, A. Damin, J. G. Vitillo, C. Lamberti, S. Bordiga, J. M. Basset, A. Zecchina, "First International School on Applied Catalysis (Characterization of catalysts: a key step in the development and utilisation of innovative catalytic systems)", Giovinazzo, Italy (June 3rd-9th, 2007).
84. "Functionalization of nanoporous polystyrenes by means of an organometallic approach: new materials exploitable for catalytic applications", **M. J. Uddin**, J. G. Vitillo, J. Estephane, S. Bordiga, C. Lamberti, A. Zecchina, E. Groppo, "IDECAT Conference on Catalysis: concepts, complexity and diversity in catalysis", Porquerolles, France (May 12th-17th, 2007).
85. "Structure and reactivity of chromocene confined into nanovoids with a diff rent polarity: from organometallic chemistry to catalysis", **J. Estephane**, E. Groppo, E. A. Quadrelli, M. Taoufik, C. Prestipino, M. Tromp, A. Damin, J. G. Vitillo, C. Lamberti, S. Bordiga, J. M. Basset, A. Zecchina, "IDECAT Conference on Catalysis: concepts, complexity and diversity in catalysis", Porquerolles, France (May 12th-17th, 2007).
86. "Connecting Carbon Fibres By Means Of Catalytically Grown Nanofilaments: Formation Of Carbon-Carbon Composites", **J. G. Vitillo**, F. Cesano, S. Bertarione, D. Scarano, A. Zecchina, "Simulations of novel carbon materials Workshop" Lyon, France (October 25th-28th, 2006). *(with presentation)*
87. "IR and TPD analysis of thermal decomposition and rehydrogenation of BH_3NH_3", **E. Groppo**, L. Regli, D. Cocina, J.G. Vitillo, G. Spoto, S. Bordiga, A. Zecchina, "XXII Congresso Nazionale della Società Chimica Italiana", Firenze, Italy (September 10th-15th, 2006).
88. "Connecting Carbon Fibres By Means Of Catalytically Grown Nanofilaments: Formation Of Carbon-Carbon Composites", **F. Cesano**, S. Bertarione, D. Scarano, J. Vitillo, A. Zecchina, "CARBOCAT II, II International Symposium on Carbon for Catalysis", St. Petersburg, Russia (July 12th-14th, 2006).

89. "Molecular Adsorption Of H_2 On Zeolites: A Theoretical Study Of The Different Contributions To The Interaction", **J. G. Vitillo**, A. Damin, A. Zecchina, G. Ricchiardi, "ICTAC-11, 11th International Conference on Theoretical Aspects of Catalysis", Schmöckwitz, Germania (June 11th-14th, 2006).
90. "Hydrogen storage and purification in zeolites: a spectroscopic and computational study of the involved interactions", **G. Ricchiardi**, J. G. Vitillo, D. Cocina, G. Spoto, S. Bordiga, A. Zecchina, "EHEC 2005, 2nd European Hydrogen Energy Conference", Zaragoza, Spain (November 22nd-25th, 2005).
91. "H_2 storage in microporous materials: a comparison between zeolites and MOFs" , **L. Regli**, J. G. Vitillo, D. Cocina, S. Bordiga, C. Lamberti, G. Spoto, G. Ricchiardi, A. Zecchina, M. Bjørgen, K. P. Lillerud, "12th ISHHC, International Symposium on Relations between Homogeneous and Heterogeneous Catalysis", Firenze, Italy (July 18th-22nd, 2005).
92. "H_2 storage in microporous materials: a comparison between zeolites and MOFs", **S. Bordiga**, L. Regli, J. G. Vitillo, D. Cocina, C. Lamberti, G. Spoto, G. Ricchiardi, A. Zecchina , M. Bjørgen, K. P. Lillerud, "Gordon Research Conference on Zeolitic & Layered Materials", Mount Holyoke College, South Hadley, MA (July 3rd-8th, 2005).
93. "Probing the acidity and basicity of zeolites by FTIR spectroscopy of H_2 adsorbed in the 100 – 15 K temperature range", **E. Gribov**, D. Cocina, J. G. Vitillo, G. Ricchiardi, D. Scarano, A. Zecchina, G. Spoto, "13th International Congress on Catalysis", Paris (July 11th-16th, 2004).
94. "A theoretical study of molecular interactions involved in hydrogen physisorption on porous materials", J. G. Vitillo, A. Damin, G. Ricchiardi, **S. Bordiga**, "14th International Zeolite Conferences", Cape Town, South Africa (April 25th-30th, 2004).
95. "A theoretical study of molecular interactions involved in hydrogen physisorption on porous materials", **J. G. Vitillo**, A. Damin, G. Ricchiardi, "Seconda Scuola Nazionale in Simulazioni Computazionali Multiscala Applicate alle Scienze dei Materiali", Modena, Italy, (February 16th-20th, 2004).
96. "A theoretical study of molecular interactions involved in hydrogen physisorption on porous materials", **J. G. Vitillo**, A. Damin, G. Ricchiardi, "NANOCAT Summer School", Torino, Italy (September 14th-20th, 2003).
97. "A theoretical study of molecular interactions involved in hydrogen physisorption on porous materials", **J. G. Vitillo**, A. Damin, G. Ricchiardi, "XXI Congresso Nazionale della Società Chimica Italiana", Torino, Italy (June 22nd-27th, 2003).

EXPERIMENTS AT LARGE SCALE FACILITIES

It is here reported the list of the experiments in which JGV has been experimentalist or co-proposer: in bold is reported the main proposer; the asterisk [*] indicates if JGV has participated to the experiment.

1. [to be performed*] **J.G. Vitillo**, K. Konidaris, F. Bardelli, A. Maspero "Local structural and chemical characterization of self-healing copper nanoparticles as catalyst for pharmaceutical and energy applications" (CH 6251), 3 days on BM08 GILDA at ESRF, Grenoble (France), April 12th-16th, 2022.
2. [*] **O. Zavorotynska**, "In search of the reversible phase(s) in $Mg(BH_4)_2$", at Helmholtz Zentrum Berlin für Materialen und Energie GmbH Elektronenspeicherring BESSY II, Berlin (Germany), February 03-09, 2020.
3. [*] **F. Bardelli**, L. Charlet, L. Leone "In situ reduction of Se adsorbed on montmorillonites by means of hydrogen gas" (Proposal MA-08-01/853, area MA - Applied Materials and Engineering), 5 days on BM08 GILDA at ESRF, Grenoble (France), November 12^{th}-16^{th}, 2009.
4. [*] **E. Gallo**, P. Glatzel, E. Borfecchia, D. Gianolio, E. Groppo, C. Lamberti "In situ electronic structure characterization of Cu- and Co-containing porous polymer relevant in red-ox catalysis: a RIXS/RXES study" (CH-3333), 7 days on ID26 at ESRF, Grenoble (France), July 7^{th}-12^{th}, 2011.
5. [*] **E. Groppo**, F. Bonino, K. Seenivasan, P. Glatzel, A. Piovano, S Bordiga, C. Lamberti, E Gallo, J.G. Vitillo, "XES-XAS investigation on SiO_2-supported Ziegler-Natta catalysts" (CH-3560), 6 days on ID26 at ESRF, Grenoble (France), June 6^{th}-12^{th}, 2012.
6. [*] **J.G. Vitillo**, S. Bordiga, C. Lamberti, P. Glatzel, Erik Gallo, A. Piovano "Investigation of the photo-chromic chemical behaviour of Ti-based metal-organic (MOF) and organic-inorganic compounds by means of hard photon-in photon-out spectroscopy"" (CH3566), 4 days on BM23 at ESRF, Grenoble (France), June 6^{th}-9^{th}, 2012.
7. [*] B. C. Hauback, **O. Zavorotynska**, S. Deledda "Effect of Cobalt additives on hydrogen sorption in Magnesium Borohydride: in-situ combined X-ray Absorption, X-ray Diffraction and Raman spectroscopy study" (CH-4068), 5 days on BM01B at ESRF, Grenoble (France), April 30^{th}-May 5^{th}, 2014.

VISITING PERIOD AND STAGES

1. Visiting Scholar at the UC Berkeley, CA under the supervision of the prof. J.R. Long (July 29th-November 8th, 2015).
2. Visiting researcher at the UC Berkeley, CA in the prof. J.R. Long and B. Smit research groups (April 16th-20th, 2012).
3. Stage under the supervision of Dr. J. Jagiello on the NLDFT analysis for pore distribution at Micromeritics Instrument Corporation, Norcross, GA (December 5th-9th, 2011).

Invited oral communications national and international universities, research laboratories

1. "Single Fe(II) sites in MIL-type metal organic frameworks for the oxidation of light alkanes to alcohols", Laboratory of molecular simulation, Ecole Polytechnique Fédérale de Lausanne (EPFL), Sion, Switzerland (May 20th, 2019).
2. "Multitechnique vision of fuel-related gases@microporous surfaces", Laboratoire Catalyse et Spectrochimie, Normandie University, ENSICAEN, UNICAEN, CNRS, Caen, France (April 3rd, 2017).

Besides the invited oral communications listed above, Jenny G. Vitillo has also delivered > 30 invited presentations as part of project meetings in different universities, research centers, and companies.

RESEARCH MENTORSHIP

JGV is actively involved in the preparation and guidance of bachelor and master thesis students, doctoral students, and post doc associates of the University Departments where she has worked.

2021-today
Advisor of 1 Postdoctoral Researcher at the University of Insubria, Italy.

2013-2016
Co-advisor of 1 doctoral student at the University of Turin, Italy (employed in R&D in Luxottica).

2005-2017
Co-advisor of 2 master students and 3 bachelor students at the University of Turin. Of these, 1 continued as PhD student at University of Turin, 1 is a researcher at Argotec, Turin (PP), 1 is employed by industry (Prototipo Technologies Srl, PP). Tutor for undergraduate and graduate students and Post Doc researchers in the activities connected to MOF synthesis, volumetry, IR and UV spectroscopy and gravimetry.

INSTITUTIONAL RESPONSABILITIES

- Faculty member of the course board for the degree in Chemistry, University of Insubria, Como, Italy (2018-today).
- Faculty member of the course board for the degree in Physics, University of Insubria, Como, Italy (2018-2020).
- President of the Faculty committee for the selection of postodoctoral researchers: University of Insubria, Como, Italy (2021/07/21).
- Committee member for instrument acquisition though tender: University of Torino, Italy (2008, 2013).

SERVICE

- PhD thesis committee member: Ecole Polytechnique Fédérale de Lausanne (EPFL), Sion, Switzerland (2019/10/04, 2021/08/07).
- MS and BS thesis committee member, University of Insubria, Como, Italy (2019/02, 2019/12, 2020/12, 2021/06, 2022/03).

TEACHING EXPERIENCES

April-May 2006 (16 h)
Tutor: basics of materials science. Vocational guidance in the High Schools for the Materials Science. Department of Chemistry, University of Torino (Italy). Duties: lessons (exercises), preparation of the course's notes, preparation and correction of written exams.

March-April 2007 (16 h)
Tutor: basics of materials science. Vocational guidance in the High Schools for the Materials Science. Department of Chemistry, University of Torino (Italy). Duties: lessons (exercises), preparation of the course's notes, preparation and correction of written exams.

October 2007 (12 h)
Laboratory Assistant: computer science for the chemistry. BS in Advanced Chemical Methodologies. Department of Chemistry, University of Torino (Italy). Duties: assistance during the practicals.

November-December 2007
Laboratory Assistant: general chemistry laboratory. BS in Industrial Chemistry. Department of Chemistry, University of Torino (Italy). Duties: assistance during the practicals. **(25 h)**

Laboratory Assistant: physical chemistry laboratory. BS in Materials Science. Department of Chemistry, University of Torino (Italy). Duties: assistance during the practicals. **(25 h)**

Laboratory Assistant. Laboratory on natural organic substances. MS in Industrial Chemistry. Department of Chemistry, University of Torino (Italy). Duties: assistance during the practicals. **(8 h)**

October-November 2008 (20 h)
Laboratory Assistant: physical chemistry laboratory. BS in Materials Science. Department of Chemistry, University of Torino (Italy). Duties: assistance during the practicals.

June 2009 (30 h)
Tutor: Training in a University Laboratory (vocational guidance in the High Schools for the Materials Science). Supervisor of high school students. Department of Chemistry, University of Torino (Italy). Duties: lessons, preparation of the course's notes and exercises, preparation and correction of written exams.

June 2009 (16 h)
Laboratory Assistant: physical chemistry laboratory. MS in Materials Science. Department of Chemistry, University of Torino (Italy). Duties: assistance during the practicals.

June 2009 (10 h)
Co-tutor: Chemical bond and Spectroscopy. BS in Industrial Chemistry. Department of Chemistry, University of Torino (Italy). Duties: lessons, preparation of the course's notes and exercises, assistance during the practicals.

January 2010 (14 h)
Laboratory Assistant: Spectroscopic methods and Microscopies. BS in Materials Science. Department of Chemistry, University of Torino (Italy). Duties: lessons (leader of the experiments), preparation of the course's notes.

May-June 2010 (16 h)
Laboratory Assistant: physical chemistry laboratory. BS in Materials Science. Department of Chemistry, University of Torino (Italy). Duties: assistance during the practical.

June 2010 (30 h)

Tutor: Training in a University Laboratory (vocational guidance in the High Schools for the Materials Science). Supervisor of high school students. Department of Chemistry, University of Torino (Italy). Duties: lessons, preparation of the course's notes and exercises, preparation and correction of written exams.

April 2011 (12 h)
Tutor: Course introduction to volumetry, Physical Chemistry (in English). MS in Materials Science and MAMAself master. Department of Chemistry, University of Torino (Italy). Duties: lessons, preparation of the course's notes and exercises, assistance during the practicals. Developed from scratch.

June 2011 (30 h)
Tutor: Training in a University Laboratory (vocational guidance in the High Schools for the Materials Science). Supervisor of high school students. Department of Chemistry, University of Torino (Italy). Duties: lessons, preparation of the course's notes and exercises, preparation and correction of written exams.

June 2012 (40 h)
Tutor: Training in a University Laboratory (vocational guidance in the High Schools for the Materials Science). Supervisor of high school students. Department of Chemistry, University of Torino (Italy). Duties: lessons, preparation of the course's notes and exercises, preparation and correction of written exams.

June 2013 (40 h)
Tutor: Training in a University Laboratory (vocational guidance in the High Schools for the Materials Science). Supervisor of high school students. Department of Chemistry, University of Torino (Italy). Duties: lessons, preparation of the course's notes and exercises, preparation and correction of written exams.

June 2014 (40 h)
Tutor: Training in a University Laboratory (vocational guidance in the High Schools for the Materials Science). Supervisor of high school students. Department of Chemistry, University of Torino (Italy). Duties: lessons, preparation of the course's notes and exercises, preparation and correction of written exams.

June 2015 (8 h)
Tutor: Materials for Energy Laboratory. BS in Materials Science and Technology. Department of Chemistry, University of Torino (Italy). Duties: lessons, preparation of part of the course's notes and exercises.

June 2016 (8 h)
Tutor: Materials for Energy Laboratory. BS in Materials Science and Technology. Department of Chemistry, University of Torino (Italy). Duties: lessons, preparation of part of the course's notes and exercises.

December-February (AY 2018-2019) (44 h per year)
Molecular spectroscopy. Master in Chemistry, Industrial Chemistry and Physics. (University of Insubria, Italy). Developed from scratch.

December-January (AY 2019-2020, 2020-2021) (72 h per year)
Molecular spectroscopy. Master in Chemistry, Industrial Chemistry and Physics (University of Insubria). Developed from scratch.

December-January (from AY 2021/2022 - today) (64 h per year)
Molecular spectroscopy. Master in Chemistry and Industrial Chemistry (University of Insubria). Developed from scratch.

February-June (from AY 2021/2022 - today) (64 h per year)
Materials for Energy. Master in Chemistry and Industrial Chemistry (University of Insubria). Developed from scratch.

Known languages

- Italian (Mother Tongue Language).
- French (Intermediate. Understanding C1, Speaking and Writing B2 level).
- English (Intermediate: Understanding C1, Speaking and Writing B1 level).
- Spanish (Basic level: Understanding, Speaking A1 level, Reading A2 level).
- Some basics of Chinese.

A full list of additional studies and personal interests and activities is available under request.