Curriculum Vitae
Vincenzina Barbera

List of Contents

Personal details

Born on July 31st, 1984 in Paternò (CT)
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ORCID ID: 0000-0002-4503-4250
Scopus ID: 54419434900
Researcher ID: M-4101-2017

Present position

- Assistant professor at the department of Chemistry, Materials and Chemical Engeneering, "G. Natta", Politecnico di MilanoResearch Fellow at Politecnico di Milano, Department of Chemistry, Material and Chemical Engeneering "Giulio Natta"
- Insegnamento 085900 - CHIMICA GENERALE; Anno Accademico 2019/2020; Scuola Scuola di Ingegneria Industriale e dell'Informazione; Cfu 5.00 Tipo insegnamento Monodisciplinare

Areas of interest

- Organic chemistry
- Heterocyclic chemistry
- Palladium Chemistry
- Domino Reaction
- Cycloaddition reactions: Diels-Alder and 1,3-dipolar
- Materials from renewable sources
- Self healing materials
- Sustainable chemistry
- sp^2 carbon allotropes: characterization and functionalization
- Nanomaterials
- Chemistry and technology of polymers and polymeric composite materials
- Nanofillers and polymer nanocomposites
- Elastomers. Tyres and materials for tyre compounds

Scientific production, patents. Sum up

Author of: 26 publications on journals
2 chapters of book
1 *Ph*D Thesis
12 pubblications on conference proceedings
38 oral communications at meetings
9 posters communications at meetings

Inventor of: 7 granted patents
11 patent applications

Awards.
1 National Award
2017 “Switch to product” organized by Politecnico Milano, PoliHub and Deloitte

Education

- November 4th , 2009
  Facoltà di Farmacia, Università degli Studi di CATANIA - P.zza dell'Università, 2 - CATANIA (I)
  Five-years single cycle master's degree in Chemistry and Pharmaceutical Technologies, 104/110. Thesis: "Sintesi enantioselettiva del 2-(4-idrossifenil)etil(3S,4E)-4-formil-3-(2-ossoetil)es-4-enoato come potenziale inibitore della nos inducibile"
  Group of Prof. U. Chiacchio

- January, 2010 – February 2013
  Università degli Studi di CATANIA - P.zza dell'Università, 2 - CATANIA (I)
  *Ph*D in Pharmaceutical Sciences, Thesis: "Sintesi di eterocicli biologicamente attivi mediante processi domino" (achieved on February 27th 2013)
  Group of Prof. U. Chiacchio

Scholarship

1. Academic year 2003 - 2004
   Regione Siciliana E.R.S.U. - Catania
   Ente Regionale per il Diritto allo Studio Universitario - Via Etnea n.570 - 95128 Catania
   Scholarship: "concorso pubblico, riservato a studenti in possesso dei requisiti di reddito, di merito e di carriera universitaria".

2. Academic year 2004 - 2005
   Regione Siciliana E.R.S.U. - Catania
   Ente Regionale per il Diritto allo Studio Universitario - Via Etnea n.570 - 95128 Catania
   Scholarship: "concorso pubblico, riservato a studenti in possesso dei requisiti di reddito, di merito e di carriera universitaria".

3. Academic year 2005 - 2006
   Regione Siciliana E.R.S.U. - Catania
   Ente Regionale per il Diritto allo Studio Universitario - Via Etnea n.570 - 95128 Catania
   Scholarship: "concorso pubblico, riservato a studenti in possesso dei requisiti di reddito, di merito e di carriera universitaria".

Career

Since 2010

- July 26th, 2010 – September 9th 2010
  Università degli Studi di CATANIA - P.zza dell'Università, 2 - CATANIA (I)
  Analytical chemistry tutor for students with disabilities

- 2010
  Università degli Studi di CATANIA - P.zza dell'Università, 2 - CATANIA (I)
  Enabled to practice as a pharmacist with a grade equal to 325/400 (achieved during the Italian State exam session on July, 2010)

- 2010 - 2011
  Università degli Studi di CATANIA - P.zza dell'Università, 2 - CATANIA (I)
  Organic chemistry tutor, Faculty of Pharmacy

- February 2nd, 2011 – February 7th 2012

Consorzio Interuniversitario Nazionale "Metodologie e Processi Innovativi di Sintesi",
Dipartimento Farmaco-Chimico dell'Università degli Studi di Bari
Dipartimento di Scienze Chimiche, Università degli Studi di CATANIA - P.zza dell'Università, 2 - CATANIA (I)
Fixed-term employment contract in the research project "Sintesi di derivati dell'oleocantale, come potenziali inibitori della cicloossigenasi 2"
Chief advisor: Prof. A. Corsaro

- February 8th, 2013
Ordine dei Farmacisti della provincia di Catania
Admission to practice as a pharmacist

- 2014
Member of "Associazione Italiana di Scienza e Tecnologia delle Macromolecole (AIM)" (1 year)

- 2014
Politecnico di Milano (I)
Laboratory Teaching support activities in the academic course "Chimica Generale"
Prof. A. Citterio

- 2014 - 2018
Politecnico di Milano (I)
Teaching support activities in the academic course "Fondamenti di Chimica";
Prof. F. Ganazzoli

- 2015 - 2018
Politecnico di Milano (I)
Teaching support activities in the academic course "Introduzione alla scienza dei materiali A";
Prof. F. Ganazzoli

- 2015 - 2018
Politecnico di Milano (I)
Laboratory Teaching support activities in the academic course "Chimica Generale"
Prof. M. Galimberti

- July 7th, 2017 – July 31st 2017
Fondazione Politecnico di Milano con sede in Milano, Piazza Leonardo da Vinci, 32
Fixed-term employment contract (Co.Co.Co.): training activities for "il Piano formativo Euro Cosmetic Srl - Piano AVI/119/15 – SIRIUM – SVILUPPO DI NUOVE FORMULAZIONI E LINEA DI PRODOTTI PER L'INNOVAZIONE DELLA DETERGENZA E DEL MERCATO DELLA COSMESI finanziato a valere sull'Avviso 3/2015 Formazione a sostegno dell'innovazione tecnologica di prodotto e/o di processo nelle imprese aderenti di Fondimpresa per l'attività di EROGAZIONE DELLA FORMAZIONE: PREPARAZIONE e DOCENZA per Azione formativa 3: RIPRODUZIONE DELLA FORMULA"

- May 16th – September 30
Politecnico di Milano, Department of Chemistry, Material and Chemical Engeneering "Giulio Natta" (I)
Research Fellow at department of Chemistry, Material and Chemical Engeneering, Politecnico di Milano. Funding by Italian PRIN research Project 2010/2011. The topic of the research activity is "Materiali nanostrutturati e sintesi e caratterizzazione di monomeri e polimeri a partire da building block C3".
Chief advisor: Prof. M. Galimberti

- 2018
  Member of “Società Chimica Italiana (SCI)” (2 years)

Teaching

Teaching, tutoring and laboratory support activities in academic courses

1. Academic year: 2010-2011
   Università degli Studi di CATANIA - P.zza dell'Università, 2 - CATANIA (I)
   Organic chemistry tutor, Faculty of Pharmacy
2. Academic year: 2014-2015
   Politecnico di Milano (I)
   Laboratory Teaching support activities in the academic course "Chimica Generale"
   Prof. A. Citterio
3. Academic years: since 2014-2015 to 2017-2018 (4 Accademic years)
   Politecnico di Milano (I)
   Teaching support activities in the academic course "Introduzione alla scienza dei materiali A";
   Prof. F. Ganazzoli
4. Academic years: since 2014-2015 to 2017-2018 (4 Accademic years)
   Politecnico di Milano (I)
   Teaching support activities in the academic course "Fondamenti di Chimica";
   Prof. F. Ganazzoli
5. Academic years: since 2015-2016 to 2017-2018 (3 Accademic years)
   Politecnico di Milano (I)
   Laboratory Teaching support activities in the academic course "Chimica Generale"
   Prof. M. Galimberti

Theses

Supervisor for Master Degree Theses

1. Academic year 2013 - 2014
   Politecnico di Milano, Corso di Laurea in Ingegneria Chimica (Degree: Chemical Engineering), Dissertation of Alessandro Porta
   "Hydroxy functionalized nanosized graphite as filler for nanocomposites based on natural rubber and polyurethane". Tutor: Prof. M. Galimberti; Co-tutor: V. Barbera

2. Academic year 2015 - 2016
   Politecnico di Milano, Corso di Laurea in Ingegneria Chimica (Degree: Chemical Engineering), Dissertation of Martina Magrograssi
   "Sustainable chemistry and materials: isocyanate free polyurethanes and α-pyrones for the preparation of adducts with sp^2 carbon allotropes". Tutor: Prof. M. Galimberti. Co-tutor: V. Barbera

3. Academic year 2016 - 2017
   Politecnico di Milano, Corso di Laurea in Ingegneria Chimica (Degree: Chemical Engineering), Candidate: Gianfranco Savino - Thesis filed on April 3rd, 2018
   " A hybrid self-assembled nano-reactor as effective environment for organic reactions in water" Tutor: Prof. D. Moscatelli. Co-tutors: Dr. V. Barbera and Dr. U. Capasso Palmiero

4. Academic year 2016 – 2017
   Politecnico di Milano, Corso di Laurea in Ingegneria Chimica (Degree: Chemical Engineering), Candidate: Giulio Torrisi - Thesis filed on April 4th, 2018
   "Decoration of sp^2 Carbon Allotropes with Oxygenated Functional Groups for 3D Architectures in Polymer Nanocomposites" Tutor: Prof. M. Galimberti. Co-tutor: Dr. V. Barbera

5. Academic year 2016 – 2017

Politecnico di Milano, Corso di Laurea in Ingegneria Chimica (Degree: Chemical Engineering), Candidate: Fabio Passoni - Thesis filed on April 4rd, 2018

"Functionalized molecules for better properties trade-off in silica based elastomeric composites" Tutor: Prof. M. Galimberti. Co-tutors: Dr. V. Barbera and Dr. A. M. Valerio

Projects

Financed projects

1) 2017. Funding for "Materiali Leggeri" Project financed by "Switch to product" organized by Politecnico Milano, PoliHub and Deloitte. Grant: 30000 €.

2) 2017. Funding for "Piano formativo Euro Cosmetic Srl - Piano AVI/119/15 – SIRIUM" "Sviluppo di nuove formulazioni e linea di prodotti per l'innovazione della detergenza e del mercato della cosmesi" (Development of new formulations and product line for the innovation of detergency and of the cosmetics market), finanziato a valere sull' (financed on the basis of) Avviso 3/2015 "Formazione a sostegno dell'innovazione tecnologica di prodotto e/o di processo nelle imprese aderenti di Fondimpresa per l'attività di Erogazione della formazione: preparazione e docenza per Azione formativa 3: Riproduzione della formula" (Training to support technological innovation of product and/or process in companies belonging to Fondimpresa for the activity of Education Delivery: preparation and teaching for training Action 3. Reproduction of formulation)

Partecipation as member

1) 2011. MIUR PRIN 2010/2011 "Materiali Polimerici Nanostrutturati con strutture molecolari e cristalline mirate, per tecnologie avanzate e per l'ambiente" (Nanostructured polymeric materials with tailor made molecular structures, for advanced technologies and for the environment).

Awards

2017

First prize at Competition "Swìtch to product" organized by Politecnico Milano, PoliHub and Deloitte, for the Project "Materiali Leggeri" (Lightweight Materials)

Congress and Schools

1) Convegno congiunto delle sezioni Calabria e Sicilia della SCI, 1-2 December 2009, Acicastello, Catania (I)
2) European School of Medicinal Chemistry (ESMEC 2010), 4-9Juy 2010, Urbino (I)
3) 1st Meeting of the Paul Ehrlich MedChem Euro-PhD Network (7th Meeting of the European Network of Doctoral Studies in Pharmaceutical Sciences. 13th to 15th July, 2011). 13-15 July 2011, Madrid, Spain
4) 11ª GIORNATA SCIENTIFICA BORSISTI C.I.N.M.P.I.S., November 25th 2011, Bari (I)
5) European School of Medicinal Chemistry (ESMEC 2012), 2-7 July 2012, Urbino (I)
6) ISCHIA ADVANCED SCHOOL OF ORGANIC CHEMISTRY (IASOC 2012), 22-26 September 2012, Ischia, Napoli (I)
7) XXI Convegno dell'Associazione Italiana di Scienza e Tecnologia delle Macromolecole, 14-19 September 2014, Politecnico di Torino, Torino (I)
8) Catalytic Oleofin Polymerization and High Performance Materials, December 11th 2014, CNR-ISMAC, Milano (I)
9) Seconda Giornata sul grafene e ossido di grafene SA (I), April 27, 2015

10) GM-2016 International conference. Graphene and related materials. Paestum (Sa) (I), May 23-27, 2016
11) 6th International IUPAC Conference On Green Chemistry. Venezia (I), September 4-8, 2016
12) Materials.it, Catania – 12-16 Dec, 2016
13) VII Workshop AICIng, Milano, 12-13.6.2017
14) 17th Int. Conf. Elastomers 2017 - November 21-23, Warsaw
15) 6th National Congress of Bioengineering, - GNB 2018 – 25 – 27 June 2018 the Politecnico di Milano, Milano - Italy
16) XXXVIII Convegno Nazionale della divisione di Chimica Organica della Società Chimica Italiana, 9 - 13 settembre 2018; CDCO 2018 - Milano

Publications on journals

1) V. Pistara, A. Rescifina, F. Punzo, G. Greco, V. Barbera, A. Corsaro, "Design, Synthesis, Molecular Docking and Crystal Structure Prediction of New Azasugar Analogues of α-Glucosidase Inhibitors", *European Journal Of Organic Chemistry*, 2011, 36, 7278-7287. DOI: 10.1002/ejoc.201100832

2) G. Broggini, V. Barbera, E.M. Beccalli, E. Borsini, S. Galli, G. Lanza, G. Zecchi, "Palladium (II)/copper halide/solvent combination for selective intramolecular domino reactions of indolecarboxylic acid allylamides: An Unprecedented arylation/esterification sequence". *Advanced Synthesis & Catalysis*, 2012, *354*(1), 159-170. DOI: 10.1002/adsc.201100614

3) G. Broggini, V. Barbera, E.M. Beccalli, U. Chiacchio, A. Fasana, S. Galli, S. Gazzola. Selective Intramolecular Palladium (II)-Catalyzed Aminooxygenation vs. Diamination of Alkenylureas: Efficient Microwave-Assisted Reactions to Bicyclic Piperazinones. *Advanced Synthesis & Catalysis*, 2013, *355*(8), 1640-1648. DOI: 10.1002/adsc.201300104

4) U. Chiacchio, V. Barbera, R. Bonfanti, G. L. Broggini, a. Campisi, S. Gazzola, ... & G. Romeo, "Synthesis and biological evaluation of 1, 7, 8, 8a-tetrahydro-3H-oxazolo [3, 4-a] pyrazin-6 (5H)-ones as antitumoral agents". *Bioorganic & medicinal chemistry*, 2013, *21*(18), 5748-5753. DOI: 10.1016/j.bmc.2013.07.019

5) M. Galimberti, S. Musto, V. Barbera, V. Cipolletti, L. Castellani, "Crosslinking of poly(1,4-*cis*-isoprene) from Hevea and Guayule", *Rubber World*, 2014, *25(2)*, 31. http://hdl.handle.net/11311/999549

6) P. Mineo, V. Barbera, G. Romeo, F. Ghezzo, E. Scamporrino, F. Spitaleri, & U. Chiacchio. "Thermally reversible highly cross-linked polymeric materials based on furan/maleimide Diels-Alder adducts." *Journal of Applied Polymer Science*, 2015, *132*(30). https://doi.org/10.1002/app.42314

7) M. Galimberti, V. Barbera, A. Citterio, R. Sebastiano, A. Truscello, A. M. Valerio, L. Conzatti, R. Mendichi, "Supramolecular interactions of Carbon Nanotubes with biosourced polyurethanes from 2-(2,5-dimethyl-1H-pyrrol-1-yl)-1,3-propanediol", *Polymer*, 2015, *63*, 62–70. https://doi.org/10.1016/j.polymer.2015.02.042

8) M. Galimberti, V. Barbera, S. Guerra, L. Conzatti, C. Castiglioni, L. Brambilla, A. Serafini, "Biobased Janus molecule for the facile preparation of water solutions of few layer graphene sheets", *RSC Adv.*, 2015, *5*, 81142-81152. DOI:10.1039/C5RA11387C

9) M. Galimberti, L. Tiné, V. Cipolletti, V. Barbera, S. Casillo, A. Citterio, "Multifunctional use of ionic liquids in natural rubber based compounds", *Rubber World*, November 2015, 29-33. http://hdl.handle.net/11311/985566

10) S. Musto, V. Barbera, M. Maggio, M. Mauro, G. Guerra, M. Galimberti, "Crystallinity and Crystalline Phase Orientation of Poly(1,4-*cis*-isoprene) from Hevea brasilliensis and Taraxacum kok-saghyz", *Polym. Adv. Technol*. 2016, *27 (8)*, 1082–1090. DOI: 10.1002/pat.3774

11) V. Barbera, S. Musto, A. Citterio, L. Conzatti, M. Galimberti, "Polyether from a biobased Janus molecule as surfactant for carbon nanotubes", *eXPRESS Polymer Letters* 2016, *10* (7) 548–558. DOI: 10.3144/expresspolymlett.2016.52

12) V. Barbera, A. Porta, L. Brambilla, S. Guerra, A. Serafini, A. M. Valerio, A. Vitale, M. Galimberti, "Polyhydroxylated few layer graphene for the preparation of flexible conductive carbon paper", *RSC Adv.*, 2016, *6*, 87767-87777. DOI:10.1039/C6RA19078B

13) S. Musto, V. Barbera, V. Cipolletti, A. Citterio, M. Galimberti, "Master curves for the sulphur assisted crosslinking reaction of natural rubber in the presence of nano- and nano-structured sp^2 carbon

allotropes" *eXPRESS Polymer Letters* 2017, 11(6), 435–448. https://doi.org/10.3144/expresspolymlett.2017.42

14) M. Galimberti, V. Barbera, S. Guerra, A. Bernardi, "Facile functionalization of sp^2 carbon allotropes with a biobased Janus molecule", *Rubber Chemistry and Technology*, 2017, *90(2),* 285-307. https://doi.org/10.5254/rct.17.82665
15) V. Barbera, S. Guerra, L. Brambilla, M. Maggio, A. Serafini, L. Conzatti, A. Vitale, M. Galimberti, "Carbon papers and aerogels based on graphene layers and chitosan: direct preparation from high surface area graphite", *Biomacromolecules*, 2017, *18 (12)*, 3978–3991. DOI: 10.1021/acs.biomac.7b01026
16) V. Barbera, A. Bernardi, G. Torrisi, A. Porta, M. Galimberti, Controlled functionalization of sp^2 carbon allotropes for the reinforcement of diene elastomers, *Elastomery*, 2017, *21(4)*, 235-251. http://hdl.handle.net/11311/1039912
17) V. Barbera, A. Bernardi, A. Palazzolo, A. Rosengart, L. Brambilla, M. Galimberti, "Facile and sustainable functionalization of graphene layers with pyrrole compounds"*Pure Appl. Chem.*, 2018, 90(2), 253–270. DOI: 10.1515/pac-2017-0708
18) M. Galimberti, G. Infortuna, S. Guerra, V. Barbera, S. Agnelli, S. Pandini. "sp^2 carbon allotropes in elastomer matrix: from master curves for the mechanical reinforcement to lightweight materials", *eXPRESS Polymer Letters* 2018, *12(3)* 265–283. https://doi.org/10.3144/expresspolymlett.2018.24
19) M. Galimberti, G. Infortuna, V. Barbera, S. Guerra, A. Bernardi, S. Agnelli, S. Pandini, "Mechanical reinforcement of rubber by sp^2 carbon allotropes such as carbon black and carbon nanotubes: The role of interfacial area and filler orientation", *Rubber World*, 2018, *257(5),* 24-30.
20) S. Agnelli, S. Pandini, F. Torricelli, P. Romele, A. Serafini, V. Barbera, M. Galimberti, "Anisotropic properties of elastomeric nanocomposites based on natural rubber and sp^2 carbon allotropes", *eXPRESS Polymer Letters* 2018, *Vol.12.* https://doi.org/10.3144/expresspolymlett.2018
21) V. Barbera, L. Brambilla, A. Porta, R. Bongiovanni, A. Vitale, G. Torrisi, M. Galimberti, "Selective edge functionalization of graphene layers with oxygenated groups by means of Reimer-Tiemann and domino Reimer-Tiemann / Cannizzaro reactions", J. Mater. Chem. A, 2018,6, 7749-7761. The article was first published on 03 Apr 2018. http://dx.doi.org/10.1039/C8TA01606B
22) V. Barbera, S. Musto, G. Infortuna, V. Cipolleti, A. Citterio, S. Shuquan, M. Galimberti, "Serinol derivatives for the sustainable vulcanization of diene elastomers", *Rubber Chemistry and Technology, 2018, 91(4), pp. 701-718*
23) S. Musto, V. Barbera, G. Guerra, M. Galimberti, "Processing and strain induced crystallization and reinforcement under strain of poly(1,4-cis-isoprene) from Ziegler-Natta catalysis, hevea brasiliensis, taraxacum kok-saghyz and partenium argentatum", *Advanced Industrial and Engineering Polymer Research*, 2018, *2(1), pp.1-12.*
24) V. Barbera, L. Brambilla, A. Milani, A. Palazzolo, C. Castiglioni, A. Vitale, & M. Galimberti. "Domino Reaction for the Sustainable Functionalization of Few-Layer Graphene." *Nanomaterials*, 2019, *9*(1), 44.
25) Bernat-Quesada, F., Espinosa, J. C., Barbera, V., Álvaro, M., Galimberti, M., Navalón, S., & García, H. (2019). Catalytic Ozonation Using Edge-Hydroxylated Graphite-Based Materials. *ACS Sustainable Chemistry & Engineering*, *7*(20), 17443-17452.
26) Guerra, S., Barbera, V., Vitale, A., Bongiovanni, R., Serafini, A., Conzatti, L., ... & Galimberti, M. (2020). Edge Functionalized Graphene Layers for (Ultra) High Exfoliation in Carbon Papers and Aerogels in the Presence of Chitosan. *Materials*, *13*(1), 39.

Books

Chapters in Book

1) M. Galimberti, V. Barbera, A. Sironi, "Controlled Functionalization of Graphene Layers" in "Graphene Materials - Structure, Properties and Modifications," InTech, ISBN 978-953-51-3140-3. http://www.intechopen.com/articles/show/title/controlled-functionalization-of-graphene-layers. 2017

2) Galimberti, M., Barbera, V., & Sironi, A. (2020). Functionalized sp2 carbon allotropes as fillers for rubber nanocomposites. In *High-Performance Elastomeric Materials Reinforced by Nano-carbons* (pp. 43-92). Elsevier.

Patents

Granted Patents

1) Italian Patent 0001424310 to Politecnico di Milano, **"**processo per la sintesi di 2-(2, 5-dimetil-1-h-pirrol-1-il)-1, 3-propandiolo e suoi derivati sostituiti". Inventors: Barbera V., Citterio A., Galimberti M. S., Leonardi G., Sebastiano R., Shisodia S. U., Valerio A. M.

2) Italian Patent 0001425726 to Politecnico di Milano, **"**polimero comprendente unita' ripetitive costituite da un anello pirrolico sostituito e prodotti di addizione di tali polimeri con allotropi del carbonio". Inventors: Barbera V., Galimberti M. S., Sebastiano R., Truscello A., Valerio A. M.

3) Italian Patent 0001426062 to Politecnico di Milano, **"**addotti tra allotropi del carbonio e derivati del serinolo". Inventors: Barbera V., Citterio A., Galimberti M. S., Leonardi G., Sebastiano R., Valerio A. M.

4) Italian Patent 000089306 to Politecnico di Milano, **"**addotti tra allotropi del carbonio e derivati del serinolo". Inventors: M. Galimberti, V. Barbera, V. Cipolletti, G. Leonardi, R. Sebastiano, S. Sun, L. Rossiello

5) European Patent EP2015/068490 to Politecnico di Milano, **"**POLYMER COMPRISING REPEATING UNITS CONSISTING OF A SUBSTITUTED PYRROLE RING AND PRODUCTS OBTAINED BY COMBINING SAID POLYMERS WITH CARBON ALLOTROPES". Inventors: Galimberti M. S., Barbera V., Truscello A., Sebastiano R., Valerio A. M.

6) European Patent EP2015/072641 to Politecnico di Milano, **"**ADDUCTS BETWEEN CARBON ALLOTROPES AND SERINOL DERIVATIVES". Inventors: Galimberti M. S., Barbera V., Sebastiano R., Valerio A. M., Leonardi G., Citterio A.

7) US Patent 15514350 to Politecnico di Milano, **"**ADDUCTS BETWEEN CARBON ALLOTROPES AND SERINOL DERIVATIVES". Inventors: Galimberti M. S., Barbera V., Sebastiano R., Valerio A. M., Leonardi G., Citterio A.

Patent Applications

1) WO 2015/189411 A1 (Italian patent application, n. MI2014A001077), filed on June 13th, 2014, entitled "Process for the synthesis of 2-(2,5-dimethyl-1H-pyrrol-1-yl)-1,3-propanediol and its substituted derivatives" Inventors: V. Barbera, A. Citterio, G. Leonardi, R. Sebastiano, S. U. Shisodia, A. M. Valerio

2) WO 2016/023915 A1 (Italian patent application, n. MI2014A001497), filed on August 14th, 2014, entitled "Polimero comprendente unità ripetitive costituite da un anello pirrolico sostituito e prodotti di

addizione di tali polimeri con allotropi del carbonio" Inventors: M. Galimberti, V. Barbera, A. Truscello, R. Sebastiano, A. M. Valerio

3) WO 2016/050887 A1 (Italian patent application, n. MI2014A001714) filed on October 1st, 2014, entitled "Addotti tra allotropi del carbonio e derivati del serinolo" inventors: M. Galimberti, V. Barbera, R. Sebastiano, A. Citterio, G. Leonardi, A. M. Valerio

4) WO 2017/115253A1 (Italian Patent Application n. 102015000089306), filed on 30.12.2015 in the name of Pirelli Tyre S.p.A. and Politecnico di Milano "Elastomeric composition and vulcanization accelerator used therein". Inventors: M. Galimberti, V. Barbera, V. Cipolletti, G. Leonardi, R. Sebastiano, S. Sun, L. Rossiello

5) Italian Patent Application n. 102016000113012 filed on 09.11.2016 in the name of Pirelli Tyre and Politecnico di Milano, entitled "Addotti fra allotropi del carbonio e derivati del pirrolo". Inventors: M. Galimberti, V. Barbera

6) Italian Patent Application n. 102016000113070 filed on 09.11.2016 in the name of Pirelli Tyre and Politecnico di Milano, entitled "Addotti fra allotropi del carbonio, ossidi-idrossidi inorganici e derivati del pirrolo". Inventors: M. Galimberti, V. Barbera

7) Italian Patent Application n. 102018000002919 filed on 21/02/2018 in the name of Pirelli Tyre and Politecnico di Milano entitled "Addotto tra un composto pirrolico e un ossido-idrossido inorganico, super-addotto tra un composto pirrolico, un ossido-idrossido inorganico e un allotropo del carbonio, composizione elastomerica comprendente il super-addotto e metodi di produzione degli stessi", Inventors: M. Galimberti, V. Barbera, A. Bernardi, D. Locatelli

8) Italian Patent Application n. 10201800005164 filed on 8 May 2018 entitled "Processo per la ricopertura di fibre contenenti siti polari", Inventors: M. Galimberti, V. Barbera

9) Italian Patent Application n. 10201800005161 filed on 8 May 2018 entitled "Compositi cementizi comprendenti allotropi di carbonio ibridizzati sp^2", Inventors: M. Galimberti, V. Barbera, E. Redaelli

Publications on proceedings

1) D. Iannazzo, E. Brunaccini, S.V.Giofrè, A. Piperno, G. Romeo, V. Barbera, G. Lanza, U. Chiacchio, "Competitive formation of β-enaminones and 3-amino-2(5*H*)furanones from the isoxazolidine system. a combined synthetic and quantum chemical study"XXXIII Convegno nazionale della divisione di chimica organica Societa' Chimica Italiana, S. Benedetto Del Tronto (AP), 12-16 September 2010, (ATTI P20). http://hdl.handle.net/20.500.11769/86054

2) S. Musto, V. Cipolletti, V. Barbera, S. Agnelli, S. Pandini, M. Galimberti, "Interactive effects between carbon allotropes on the mechanical reinforcement of nanocomposites based on poly(1,4-*cis*-isoprene)", AIP Conference Proceedings, vol. 174, 2014; doi: 10.1063/1.4876806, pp. 174-177

3) M. Galimberti, S. Musto, L. Tiné, V. Cipolletti, V. Barbera, A. Citterio, L. Conzatti, "New frontiers for rubber: Nanocomposites and Renewable Sources" Proceedings of - IRC 2014 – International Rubber Conference Organization – Beijing (China), pp. 158-165

4) V. Cipolletti, G. Peli, V. Barbera, S. Guerra, L. Conzatti, M. Galimberti, "Nanocompositi elastomerici a base di nanocariche carboniose", Atti del XXI Convegno dell'Associazione Italiana di Scienza e Tecnologia delle Macromolecole (AIM), Torino 14-19 settembre 2014, pp. 193-197

5) S. Musto, V. Barbera, A. Citterio, G. Guerra, M. Galimberti, "Proprietà di poli(1,4-*cis*-isoprene) da hevea brasiliensis, parthenium argentatum e taraxacum kok saghiz: ruolo chiave dei componenti di basso peso molecolare", Atti del XXI Convegno dell'Associazione Italiana di Scienza e Tecnologia delle Macromolecole (AIM), Torino 14-19 settembre 2014, pp. 127-131

6) M. Galimberti, V. Barbera, V. Cipolletti, S. Guerra, A. Citterio, "Innovative biosourced compatibilizers for carbon and white fillers in rubber compounds", Proceedings of Fall 186th Technical Meeting of the Rubber Division of the American Chemical Society, Inc. Nashville (TN) October 14 - 16, 2014

7) M. Galimberti, S. Musto, V. Barbera, V. Cipolletti, L. Tiné, A. Citterio, G. Guerra, L. Castellani, "Natural rubber from alternative sources. The key role of low molecular mass components", Proceedings of Fall 186th Technical Meeting of the Rubber Division of the American Chemical Society, Inc. Nashville (TN) October 14 - 16, 2014

8) M. Galimberti, V. Barbera, V. Cipolletti, S. Guerra, S. Musto, L. Tiné, M. Maggio, A. Citterio, "Materials from renewable sources for advanced rubber composites", Proceedings of Fall 188th Technical Meeting of the Rubber Division of the American Chemical Society, Inc. Cleveland (OH), October 12 - 15, 2015

9) M. Galimberti, S. Guerra, G. Infortuna, V. Barbera, A. Bernardi, G. Mastinu, S. Agnelli, S. Pandini "Anisotropic effects and master curves for rubbers with sp^2 carbon allotropes towards light weight materials" Proceedings of International Rubber & Advanced Materials in Healthcare Expo, 192nd Technical Meeting, International Rubber Conference, October 9 - 12, 2017, Cleveland (OH, USA)

10) M. Galimberti, V. Barbera, G. Infortuna, V. Cipolletti, A. Citterio, S. Sun, "Serinol a biosourced building block for better mechanical reinforcement and sustainable vulcanization of rubber compounds" Proceedings of International Rubber & Advanced Materials in Healthcare Expo, 192nd Technical Meeting, International Rubber Conference, October 9 - 12, 2017, Cleveland (OH, USA)

11) L Sartore, K Dey, S Agnelli, F Bignotti, N Lopomo, MA Khan, V Barbera, M Galimberti. "Novel nanobiocomposite hydrogels based on gelatin/chitosan and functionalized graphene" AIP Conference Proceedings, July 11, 2018.

12) M. Galimberti,V. Cipolletti, G. Peli, V.Barbera, A. Bernardi, D. Locatelli, L. Giannini. "Nanometric high aspect ratio fillers and chemical reactivity with the polymer matrix" Proceedings of International Rubber & Advanced Materials in Healthcare Expo, 194nd Technical Meeting, International Rubber Conference, Louisville (KY, USA), October 9 - 11, 2018.

Oral communications at Meetings

1) A. Corsaro, M.A. Chiacchio, G. Greco, V. Barbera, V. Pistarà, "Sintesi di nuovi eptulosi δ-dicarbonilici da 5-spirociclopropil piranosidi"
Convegno congiunto delle sezioni Calabria e Sicilia della SCI, Acicastello (Ct), 1 - 2 December 2009, (ATTI O38)

2) A. Rescifina, V. Barbera, G. Greco, A. Piperno, D. Iannazzo, "Sintesi ed attivita' antitumorale di arilisossazolidine come intercalanti del DNA"
Convegno congiunto delle sezioni Calabria e Sicilia della SCI, Acicastello (Ct), 1 - 2 December 2009, (ATTI O5)

3) S.V. Giofrè, G. Romeo, U. Chiacchio, V. Barbera, A. Ferlazzo, "3'-pirimidil isossazolidine: una nuova classe di inibitori allosterici della trascrittasi inversa"
Convegno congiunto delle sezioni Calabria e Sicilia della SCI. Acicastello (Ct), 1 - 2 December 2009, (ATTI O23)

4) V. Barbera, A. Rescifina, U. Chiacchio, "Novel isoxazolidinyl polycyclic aromatic hydrocarbons as DNA-intercalating agents"
1st Meeting of the Paul Ehrlich MedChem Euro-PhD Network (7th Meeting of the European Network of Doctoral Studies in Pharmaceutical Sciences. 13th to 15th July, 2011), Madrid, Spain, 13-15 July 2011, (ATTI: p. 39, O7)

5) *Invited presentation*
V. Barbera, U. Chiacchio, E. Borsini, A. Fasana, G. Broggini, "Reazioni domino intramolecolari catalizzate da complessi di palladio(II) per la preparazione di carboline diversamente funzionalizzate" 11° GIORNATA SCIENTIFICA BORSISTI C.I.N.M.P.I.S., Bari, November 25th, 2011

6) *Invited presentation*
V. Barbera, "Synthesis and biological evaluation of oxazole [3,4-a] pyrazin-6(3*H*)-ones by intramolecular Pd(II) catalyzed reactions" 12° GIORNATA SCIENTIFICA BORSISTI C.I.N.M.P.I.S., Università di Milano-Bicocca, Milan (I), December 3rd, 2012

7) S. Musto, V. Cipolletti, V. Barbera, S. Agnelli, S. Pandini, M. Galimberti, "Interactive Effects between Carbon Allotropes on the Mechanical Reinforcement of Nanocomposites based on Poly(1,4-cis-isoprene)"
Time of Polymer and Composites (TOP) – Ischia (Italy) 22 – 26 June 2014

8) *Key Note Lecture*
M. Galimberti, S. Musto, V. Cipolletti, V. Barbera, "Renewable sources for rubber nanocomposites" ISE '14 – 14th International Seminar on Elastomers – Bratislava (Slovakia) 24 – 28 August 2014

9) *Invited Lecture*
M. Galimberti, S. Musto, L. Tiné, V. Cipolletti, V. Barbera, A. Citterio, L. Conzatti - "New frontiers for rubber: Nanocomposites and Renewable Sources"
IRC 2014 – International Rubber Conference Organization – Beijing (China) 16 – 18 September 2014

10) V. Barbera, A. Truscello, R. Sebastiano, G. Leonardi, L. Conzatti, A. Citterio, M. Galimberti, "Polimeri innovativi da precursori naturali C-3 e loro utilizzo per la preparazione di dispersioni stabili di nanocariche carboniose"
XXI Convegno dell'Associazione Italiana di Scienza e Tecnologia delle Macromolecole (AIM), Torino 14-19 settembre 2014, pp. 193-197

11) S. Musto, V. Barbera, A. Citterio, G. Guerra , M. Galimberti, "Proprietà di poly(1,4-cis-isoprene) da Hevea Brasiliensis, Partenium Argentatum e Taraxacum Kok-Saghyz: ruolo chiave dei componenti di basso peso molecolare"
XXI Convegno dell'Associazione Italiana di Scienza e Tecnologia delle Macromolecole (AIM), Torino 14-19 settembre 2014, pp. 193-197

12) V. Cipolletti, G. Peli, V. Barbera, S. Guerra, L. Conzatti, M. Galimberti. "Nanocompositi elastomerici a base di nanocariche carboniose"
XXI Convegno dell'Associazione Italiana di Scienza e Tecnologia delle Macromolecole (AIM), Torino 14-19 settembre 2014, pp. 193-197

13) M. Galimberti, S. Musto, V. Barbera, V. Cipolletti, L. Tiné, A. Citterio, G. Guerra, L. Castellani "Natural rubber from alternative sources. The key role of low molecular mass components"
Fall 186th Technical Meeting of the Rubber Division of the American Chemical Society, Inc. Nashville (TN) October 14 - 16, 2014

14) M. Galimberti, V. Barbera, V. Cipolletti, S. Guerra, A. Citterio, "Innovative biosourced compatibilizers for carbon and white fillers in rubber compounds"
186th Technical Meeting of the Rubber Division of the American Chemical Society, Inc. Nashville (TN) October 14 - 16, 2014

15) M. Galimberti, S. Musto, V. Barbera, V. Cipolletti, S. Guerra, R. Sebastiano, A. Citterio, S. Agnelli, S. Pandini, "Carbon Allotropes for Nanocomposites Based on poly(1,4-cis-isoprene)"
11th Fall Rubber Colloquium (KHK 2014) – Hannover (Germany)

16) M. Galimberti, S. Musto, V. Barbera, V. Cipolletti, S. Guerra Biosourced materials for rubber composites
International Rubber Conference Nurnberg (D), June 29 - July 2, 2015

17) *Invited presentation*
V. Barbera, S. Guerra, M. Galimberti, "GO e atomi di carbonio sp^2: un ossimoro?"
Seconda Giornata sul grafene e ossido di grafene SA (I), April 27, 2015.

18) M. Galimberti, V. Barbera,V. Cipolletti, S. Guerra, S. Musto, L. Tiné, M. Maggio, A. Citterio "Materials from renewable sources for advanced rubber composites"
188th Technical Meeting ACS Rubber Division Cleveland (OH) October 13 - 15, 2015

19) M. Galimberti, V. Barbera, S. Guerra, L. Conzatti, "Serinol derivatives for the preparation of few layers graphene"
"GM-2016 International conference. Graphene and related materials" Paestum (Sa) (I), May 23-27, 2016

20) V. Barbera, A. Porta, M. Galimberti, "Selective Edge Functionalization of Graphene Layers with Hydroxyl Groups for the Preparation of Flexible Conductive Carbon Paper"
"GM-2016 International conference. Graphene and related materials" Paestum (Sa) (I), May 23-27, 2016

21) S. Guerra, V. Barbera, M. Maggio, M. Galimberti, "Exfoliation of graphite by chitosan: from Carbon Paper to Aerogel"

"GM-2016 International conference. Graphene and related materials" Paestum (Sa) (I), May 23-27, 2016

22) F. Aricò, P. Tundo, V. Barbera, M. Magrograssi., M. Galimberti, "Isocyanate-free Polyurethane via cationic ring opening polymerization of six-membered cyclic carbamates."
6th International IUPAC Conference On Green Chemistry. Venezia (I), September 4-8, 2016

23) *Invited presentation*
M. Galimberti, V. Barbera, A. Porta, A. Palazzolo, S. Guerra, A. Bernardi, "Funzionalizzazione controllata di allotropi del carbonio sp^2."
Terza Giornata sul grafene e ossido di grafene SA (I), September 9, 2016.

24) M. Galimberti, V. Barbera, S. Guerra, G. Infortuna, S. Agnelli, S. Pandini, "Carbon allotropes as reinforcing fillers: anisotropy, synergy, reinforcement predictivity, chemical reactivity"
KHK 2016, 12th Fall Rubber Colloquium, Hannover, Germany, November, 22-24, 2016

25) V. Barbera, A. Porta, S. Guerra, M. Galimberti, "Tailor made functionalization of graphene layers"
Materials.it, Catania – 12-16 Dec, 2016

26) M. Galimberti, G. Infortuna, S. Guerra, A. Bernardi, V. Barbera, S. Agnelli, S. Pandini "From master curves for the mechanical reinforcement of rubber based nanocomposites to lightweight materials"
Rubber Con 2017, Prague (CZ), May 23-25, 2017

27) V. Barbera, A. Milani, L. Brambilla, C. Castiglioni, M. Galimberti. "Domino reaction for the controlled functionalization of sp^2 carbon allotropes"
VII Workshop AICIng, Milano, 12-13.6.2017

28) M. Galimberti, V. Barbera, A. Bernardi, A. Rosengard, "Facile and sustainable functionalization method for preparing graphene layers with different solubility parameters"
"Grafene e sue possibili applicazioni industriali". Evento satellite del XXVI Convegno nazionale della società chimica italiana Paestum (SA) (I), 14.9.2017

29) M. Galimberti, S. Guerra, G. Infortuna, V. Barbera, A. Bernardi, G. Mastinu, S. Agnelli, S. Pandini "Anisotropic effects and master curves for rubbers with sp^2 carbon allotropes towards light weight materials"
International Rubber & Advanced Materials in Healthcare Expo, 192nd Technical Meeting, International Rubber Conference, October 9 - 12, 2017, Cleveland (OH, USA)

30) M. Galimberti, V. Barbera, G. Infortuna, V. Cipolletti, A. Citterio, S. Sun "Serinol: a biosourced building block for better mechanical reinforcement and sustainable vulcanization of rubber compounds"
International Rubber & Advanced Materials in Healthcare Expo, 192nd Technical Meeting, International Rubber Conference, October 9 - 12, 2017, Cleveland (OH, USA)

31) V. Barbera, A. Bernardi, G. Torrisi, M. Galimberti. "Controlled functionalization of sp^2 carbon allotropes for the reinforcement of diene elastomers"
17th Int. Conf. Elastomers 2017 - November 21-23, Warsaw

32) M. Galimberti, V. Barbera, L. Rubino, C. Sessa, "Materiali da fonti rinnovabili: gomme e TPE a confronto"
Assogomma, Centro Congressi "Palazzo Stelline" Milan (I), October 25th 2017

33) Maurizio Galimberti, Vincenzina Barbera, Andrea Bernardi, Attilio Citterio, "The Use of a C-3 Building Block for Preparing New Chemicals for Different Applications"

CPAC Rome Workshop 2018, Rome (I), March 21st, 2018

34) *Invited presentation*
M. Galimberti, V. Barbera, A. Bernardi, A. Palazzolo, A. Rosengart, "Facile and Sustainable Functionalization Method for Preparing sp^2 Carbon Allotropes with Different Solubility Parameters"
193rd Technical Meeting May 8-10, 2018; Hyatt Regency Indianapolis, Indianapolis, IN

35) *Invited presentation*
V. Barbera, G. Torrisi, A. Porta, L. Brambilla, A. Bernardi, M. Galimberti, "Playing with chemistry on sp^2 carbon allotropes: domino reactions for tailor made functionalization"
193rd Technical Meeting May 8-10, 2018; Hyatt Regency Indianapolis, Indianapolis, IN

36) V. Barbera, M. Galimberti, L. Brambilla, R. Bongiovanni, A. Vitale, G. Torrisi, A. Porta, "Tailor made functionalizations of graphene layers and their application as carbocatalyst for organic reactions"
XXXVIII Convegno Nazionale della divisione di Chimica Organica della Società Chimica Italiana, 9 - 13 settembre 2018; CDCO 2018 – Milano

37) A. Bernardi, R. Marku, V. Barbera, M. Galimberti "Facile and sustainable functionalization of carbon black, as filler for rubber composites" 13th Kautschuk Herbst Kolloquium, Hannover, Germany, November 6-8, 2018

38) M. Galimberti, V. Barbera, A. Bernardi, D. Locatelli, G. Torrisi "Facile and sustainable functionalization of sp^2 carbon allotropes, as fillers for rubber composites" 13th Kautschuk Herbst Kolloquium, Hannover, Germany, November 6-8, 2018

Poster presented at meetings

1) V. Barbera, "Palladium(II)/copper halide/solvent combination for selective intramolecular domino reactions of indole carboxylic acid allylamides"
European School of Medicinal Chemistry (ESMEC 2012), Urbino (I), 2-7 July 2012 (ATTI pp.17-18)
2) V. Barbera, A. Corsaro, U. Chiacchio, G. Broggini, A. Fasana A., "Palladium(II)/copper halide/solvent combination for selective intramolecular domino reactions of indole allylamides"
Ischia Advanced School Of Organic Chemistry (IASOC 2012), Ischia (Na), Italy, 22-26 September 2012 (ATTI P5)
3) M. Galimberti, V. Barbera, A. Citterio, R. Sebastiano, A. Truscello, A.M. Valerio, R. Mendichi, L. Conzatti, "Biosourced polymers for stable interactions with carbon nanotubes"
ISMAC Workshop 2014. Catalytic olefin polymerization and high performance materials. December, 11th 2014, ISMAC-CNR, Milano.
4) V. Barbera, S. Guerra, A. Citterio, M. Galimberti, "Biobased Janus molecule for the facile preparation of water solutions of few layers graphene"
6th International IUPAC Conference On Green Chemistry. Venezia (I), September 4-8, 2016
5) G. Leonardi, A. Valerio, V. Barbera, A. Truscello, G. Terraneo, M. Galimberti, R. Sebastiano, A. Citterio "Synthesis of pyrrole derivatives of serinol for functionalization of carbon allotropes"
VII Workshop AICIng, Milano, 12-13.6.2017
6) G. Infortuna, A. Bernardi, S. Guerra, V. Barbera, S. Agnelli, S. Pandini, M. Galimberti "Master curves for the mechanical reinforcement of diene elastomers with sp^2 carbon allotropes"
VII Workshop AICIng, Milano, 12-13.6.2017
7) L. Sartore, K. Dey, S. Agnelli, F. Bignotti, N. Lopomo, M.A. Khan, V. Barbera, M. Galimberti, "Novel nanobiocomposite hydrogels based on gelatin/chitosan and functionalized graphene" (PS15)
9th International Conference on Times of Polymers and Composites - TOP 2018 – June 17-21 2018. Ischia - Italy
8) L. Sartore, F. Bignotti, K. Dey, S. Agnelli, N. Lopomo, M. A. Khan, V. Barbera, M. Galimberti, "Hybrid hydrogels based on gelatin, chitosan and functionalized graphene layers"
6th National Congress of Bioengineering, - GNB 2018 – 25 – 27 June 2018 the Politecnico di Milano, Milano - Italy
9) L. Rubino, V. Barbera, A. Citterio, M. Galimberti, "Environmentally friendly and regioselective one-pot synthesis of imines and oxazolidines serinol derivatives and their use for natural rubber crosslinkings"
IASOC 2018, Ischia Advanced School of Organic Chemistry, (Naples), September 22-25, 2018 - Italy