

Europass Curriculum Vitae

Personal information

First name(s) / Surname(s)



Caterina Frascchetti

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 Nationality Italian
 Date of birth
 Gender female

Occupational field Mass spectrometry, Enantiorecognition in the gas-phase, Organic chemistry, Spectroscopy

Work experience

Dates **November 2010-**

Occupation or position held Researcher
 Main activities and responsibilities -Spectroscopy coupled with Mass Spectrometry of the structure of organometallic complexes.
 - Kinetic and spectroscopic study of diastereomeric non covalent complexes by means of FT-ICR Mass Spectrometry and IRMPD Spectroscopy,
 -Teaching Class
 Name and address of employer Sapienza Università di Roma, piazzale Aldo moro 5, 00185 Rome
 Sector Inorganic Chemistry

Dates **November 2009- October 2010**

Occupation or position held Post-Doc
 Main activities and responsibilities Title of the research "IRMPD Spectroscopy on diastereomeric complexes": study of kinetics and thermodynamics of diastereomeric complexes and of chiral effects in supramolecular systems by means of Mass Spectrometry coupled with IR-spectroscopy.
 Name and address of employer Sapienza Università di Roma, piazzale Aldo moro 5, 00185 Rome
 Sector Mass Spectrometry

Dates **January 2009-June 2009**

Occupation or position held Post-Doc
 Main activities and responsibilities Research activity: kinetic study on diastereomeric complexes by means of FT-ICR Mass Spectrometry
 Name and address of employer Bielefeld Universität, Postfach 10 01 31, D-33501 Bielefeld, Bielefeld (Germany)
 Sector Mass Spectrometry

Education and training

Dates **November 2005-October 2008**

Title of qualification awarded PhD in Chemical Sciences, Title of the thesis: "Dynamics, Kinetics and Thermodynamics of Enantioselective Processes in the Gas Phase"

Name and type of organisation providing education and training Sapienza Università di Roma, piazzale Aldo Moro 5, 00185 Rome
ISCED6

Dates **1998-2005**

Title of qualification awarded Bachelor in Chemistry and Pharmaceutical Technologies. Title of thesis: "The Crucial Role of the Isomeric Ion-Molecule Complexes in the Aromatic Electrophilic Alkylations in the Gas Phase".

Name and type of organisation providing education and training Sapienza Università di Roma, piazzale Aldo Moro 5, 00185 Rome
ISCED5

Social skills and competences

-In **2009** I have been awarded for best PhD doctoral thesis in Mass spectrometry by the Italian Chemical Society.
-In **2005-2011** I took part in several national and international conferences, by actively participating with posters and talks.

Computer skills and competences

Competent with all the Windows programs, with graphic chemical software, with Gaussian03, and with Molden 4.7

Mother tongue(s) **Italian**

Other language(s) **English**

Self-assessment
European level ()*

Language

Language

Additional information

Receiving

Annexes

Scientific Publication

- 1) Filippi A., Frascchetti C., Renzi G., Roselli G., Speranza M. **Substituent effect on the Stereochemistry of Gas-Phase Intracomplex Nucleophilic Substitutions** *Chemistry - A European Journal*. 2006; 12: 7913
- 2) Botta B., Delle Monache G., Frascchetti C., Nevola L., Subissati D., Speranza M. **Gaseous- versus solution-phase recognition of some aromatic amino esters by 2,8,14,20-tetrakis(L-valinamido)[4]resorcinarene** *International Journal of Mass Spectrometry*. 2007; 267: 24
- 3) Novara F.R., Filippi A., Trout N.A., Adcock W., Sorensen T.S., Speranza M. **Gas-Phase Diastereoselectivity of Secondary 5-Substituted (X)-Adamant-2-yl (X = F, Si(CH₃)₃) Cations** *Journal of Organic Chemistry*. 2007; 72: 4077
- 4) Botta B., D'Acquarica I., Nevola L., Sacco F., Valbuena Lopez Z., Zappia G., Frascchetti C., Speranza M., Tafi A., Caporuscio F., Letzel M.C., Mattay J. **Bis(diamido)-Bridged Basket Resorcin[4]arenes as Enantioselective Receptors for Amino Acids and Amines** *European Journal of Organic Chemistry*. 2007: 5995

- 5) Botta B., Tafi A., Caporuscio F., Botta M., Nevola L., D'Acquarica I., Frascchetti C., Speranza M. **Modeling Amphetamine/Receptor Interactions: A Gas-Phase Study of Complexes Formed between Amphetamine and Some Chiral Amido[4]resorcinarenes** *Chemistry - A European Journal*. 2008; 14: 35
- 6) Frascchetti C., Aschi M., Filippi A., Giardini A., Speranza M. **Fast Stereoselective Reactions in Electro sprayed Co(II)/Neurotransmitter Nanodroplets** *Chemical Communications*. 2008: 2544
- 7) Barboni L., Filippi A., Frascchetti C., Giuli S., Marcolini M., Marcantoni E. **Substituent Stereochemistry Effects on Diastereoselective Methylation Reaction of 4-Chloroadamantan-2-ones** *Tetrahedron Letters*. 2008; 49: 6065
- 8) Speranza M., Gasparrini F., Botta B., Villani C., Subissati D., Frascchetti C., Subrizi F. **Gas-phase Enantioselective Reactions in Noncovalent Ion-Molecule Complexes** *Chirality*. 2009; 21(1): 69
- 9) Frascchetti C., Pierini M., Villani C., Gasparrini F., Filippi A., Speranza M. **Gas-Phase Structure and Relative Stability of Proton-Bound Homo- and Heterochiral Clusters of Tetra-Amide Macrocycles with Amines** *Collection of Czechoslovak Chemical Communications*. 2009; 74(2): 275
- 10) Aschi M., Frascchetti C., Filippi A., Speranza M. **Reaction Diastereoselectivity of Chiral Aminoalcohols/[Co(II)NO₃]⁺ Complexes in Evaporating ESI Nanodroplets: New Insights from a Joint Experimental and Computational Investigation** *Journal of Mass Spectrometry*. 2009; 44(7): 1038,
- 11) Frascchetti C., Novara F.R., Tafi A., Sacco F., Mannina L., Sobolev A.P., Mattay J., Letzel M.C., Botta B., Speranza M. **Interactions of Vinca Alkaloid Subunits with Chiral Amido[4]resorcinarenes: A Dynamic, Kinetic, and Spectroscopic Study** *Organic & Biomolecular Chemistry*. 2009; 7(9): 1798
- 12) Frascchetti C., Novara F.R., Filippi A., Speranza M., Trout N.A., Adcock W., Marcantoni E., Renzi G., Roselli G., Marcolini M. **Gas-Phase Facial Diastereoselectivity of Equatorial and Axial 4-Chloro-Adamant-2-yl Cations** *Journal of Organic Chemistry*. 2009; 74(15): 5135
- 13) Frascchetti C., Pierini M., Villani C., Gasparrini F., Levi Mortera S., Speranza M. **Towards Enzyme-like Enantioselectivity in the Gas Phase: Conformational Control of Selectivity in Chiral Macrocyclic Dimers** *Chemical Communication*. 2009: 5430
- 14) Botta B., Frascchetti C., D'Acquarica I., Speranza M., Novara F.R., Mattay J., Letzel M.C., **Gas-Phase Enantioselectivity of Chiral N-Linked Peptidoresorc[4]arene Isomers toward Dipeptides** *Journal of Physical Chemistry A*. 2009; 113: 14625
- 15) Frascchetti C., Speranza M., Filippi A. **Does a Chiral Alcohol Really Racemize when its OH Group is Protected with Boyer's Reaction?** *Chirality*. 2010; 22(1): 88
- 16) Speranza M., D'Acquarica I., Frascchetti C., Botta B., Tafi A. Bellucci L., Zappia G. **Diastereoselective gas-phase ion/molecule reactions of ethanolamine neurotransmitter/amido[4]resorcinarene adducts** *International Journal of Mass Spectrometry*. 2010; 291(1-2): 84
- 17) Botta B., Frascchetti C., D'Acquarica I., Sacco F., Mattay J., Letzel M.C., Speranza M. **Unprecedented gas-phase chiro-selective logic gates** *Organic & Biomolecular Chemistry*. 2011; 9(6): 1717
- 18) Frascchetti C., Pierini M., Villani C., Gasparrini F., Mortera S.L., Filippi A., Speranza M. **The "Bridge" Game: Role of the Fourth Player in Chiral Recognition** *Chemistry - A European Journal*. 2011; 17(11): 3078
- 19) Frascchetti C., Pierini M., Villani C., Gasparrini F., Mortera S.L., Filippi A., Speranza M. **Facial control of gas-phase enantioselectivity of strapped tetra-amide macrocycles** *Rendiconti Lincei*. 2011; 22(3): 191