

# Curriculum Vitae of Simona Bronco

**SURNAME** Bronco

**FIRST NAME** Simona

**Affiliation and official address:**

CNR-INFM-polyLab Pisa

c/o Dipartimento di Chimica e Chimica Industriale

Università di Pisa

Via Risorgimento, 35

56126 Pisa - Italy

**Date and place of birth:** 22 March 1968, Città della Pieve (PG), Italy

**Nationality:** Italian

**Education (degrees, dates, universities)**

Dr. Degree in Industrial Chemistry in 1994 from the University of Pisa (110/110 cum Laude)

PhD Degree in Natural Science in 1997 from Swiss Federal Institute of Technology Zurich

Equivalence of the swiss PhD degree to the italian PhD Degree in Chemical Science in 1998

**Career/Employment (employers, positions and dates)**

Tenure Track Researcher, polyLab-CNR Pisa from 2004

Associate Researcher, INFM-Pisa, 1999-2004

Researcher at Consorzio Pisa Ricerche, Pisa (Italy), 1997-1999

Visiting Researcher, Swiss Federal Institute of Technology Zurich, Berkeley, 1992-1994

**Research interests**

- a. Biopolymers based materials
- b. Modification and functionalization of biopolymers
- c. Bioplastics
- d. Responsive materials with natural/biodegradable macromolecules
- e. Surface modification of polymeric substrates

**Honours, Awards, Fellowships, Membership of Professional Societies**

Chairman 1 International Conference

Member of the Società Chimica Italiana

Member of the Associazione Italiana Macromolecole

**Publications**

- Number of papers in refereed journals: 33

- Number of proceedings: 5

- Number of chapters in books: 2

- Number of communications to scientific meetings: 120

- Patents: 2

**Scientific publications on international journals**

- 1) Bronco, S.; Consiglio, G.; Hutter, R.; Batistini, A.; Suter, U. W., "Regio-, Stereo-, and Enantioselective Alternating Copolymerisation of Olefins with Carbon Monoxide" *Macromolecules* **1994**, 27, 4436-4440. ISSN: 0024-9297; IF: 4.024
- 2) "Regio-, and Stereocontrol in the Alternating Copolymerisation of Olefins with Carbon Monoxide" Amevor, E.; Bronco, S.; Consiglio, G.; Di Benedetto, S. *Macromolecular Symposia* **1995**, 89, 443-454. ISSN: 1022-1360; IF: 0.913

- 3) *"Enantioselective Alternating Olefin-Carbon Monoxide Copolymerization: a New Concept for Activity and Stereoselectivity"* Bronco, S.; Consiglio, G.; Di Benedetto, S.; Fehr, M.; Spindler, F.; Togni, A. *Helv. Chimica Acta* **1995**, 78, 883-886. ISSN: 0018-019X; IF: 1.650
- 4) *"Regio- and Stereoregular Copolymerization of Propene with Carbon Monoxide catalysed by Palladium Complexes containing Atropisomeric Diphosphine Ligands"* Bronco, S. Consiglio, G. *Macromol. Chem. Phys.* **1996**, 197, 355. ISSN: 1022-1352; IF: 2.111
- 5) *"A Thermogravimetric Study of the Effect of Palladium Catalyst Residue on the Degradation of Ethylene-Carbon Monoxide Alternating Copolymer"* De Vito, S.; Bronco, S. *Polym. Deg. Stab.* **1998**, 63, 399-406. ISSN: 0141-3910; IF: 1.749
- 6) *"Effect of zeolite HY-support on the monoalkene polymerization by group IV metallocenes"* Michelotti, M.; Arribas, G.; Bronco, S.; Altomare, A. *J. Mol. Cat. A: Chemical* **2000**, 152, 167-177. ISSN: 1381-1169; IF: 2.348
- 7) *"The Effect of Inorganic and Organic Macromolecular Structures on the Performance of Metallocene Polymerization Catalysts"* Ciardelli, F.; Altomare, A.; Bronco, S.; Oulderrahmania, L.; Masi, F. *Macromol. Symp.* **2000**, 156, 147. ISSN: 1022-1360; IF: 0.913
- 8) *"Enantioselective Alternating Terpolymerization of Propene and Ethene with Carbon Monoxide"* Sesto, B.; Bronco, S.; Gindro, E.; Consiglio, G. *Macromol. Chem. Phys.* **2001**, 202, 2059. ISSN: 1022-1352; IF: 2.111
- 9) *"Effect of the Structure of the Polymer Matrix on the Terthiophene Chromophore Dispersion in Dichroic Polyethylene Films"* Pucci, A.; Ruggeri, G.; Moretto, L.; Bronco, S. *Polym. Adv. Technol.* **2002**, 13(10-12), 737-743. ISSN: 1042-7147; IF: 0.962
- 10) *"Copolymerization of styrene with methyl-substituted styrenes in the presence of titanium monometallocenes"* Oliva, H.; Leal, G.; Ismayel, A.; Arribas, G.; Bronco, S. *e-Polymer.* **2002**, no. 002. ISSN: 1648-7229; IF: 0.926
- 11) *"Modification of Surface and Mechanical Properties of Polyethylene by Photoinitiated Reactions"* Fallani, F.; Ruggeri, G.; Bronco, S.; Bertoldo, M. *Polym. Degr. Stab.* **2003**, 82, 257. ISSN: 0141-3910; IF: 1.749
- 12) *"Combining theory and experiment to study the photo-oxidation of Polyethylene and Polypropylene"* Bertoldo, M.; Bronco, S.; Cappelli, C.; Gragnoli, T.; Andreotti, L. *J. Phys. Chem. B.* **2003**, 107, 11880. ISSN: 1520-6106; IF: 4.033
- 13) *"The Effects of Cold Plasma Treatments on LDPE Wettability and Curing Kinetic of a Polyurethane Adhesive"* Bronco, S.; Bertoldo, M.; Taburoni, E.; Cepek, C.; Sancrotti, M. *Macromol. Symp.* **2004**, 218(1), 71. ISSN: 1022-1360; IF: 0.913
- 14) *"Understanding the Structural and Binding Properties of Collagen: A Theoretical Perspective"* S. Bronco, C. Cappelli,\* and S.Monti, *J. Phys. Chem. B.* **2004**, 108, 10101-10112. ISSN: 1520-6106; IF: 4.033
- 15) *"Oxidative unhairing with hydrogen peroxide: development of an industrial scale process for high-quality upper leather"* S. Bronco, D. Castiello, G. D'Elia, M. Salvadori, M. Seggiani, S. Vitolo, *J. Amer. Chem. Assoc. (Journal of the American Leather Chemists Association)* **2005**, 100(2), 45-53. ISSN: 0002-9726; IF: 0.567.
- 16) *"Understanding the Accelerating Effect of  $\epsilon$ -Caprolactam on the Formation of Urethane Linkages"* Monica Bertoldo, Chiara Cappelli, Stefano Catanorchi, Vincenzo Liuzzo and Simona Bronco, *Macromol.* **2005**, 38, 1385-1394. ISSN: 0024-9297; IF: 4.024
- 17) *"Dual cured polyurethane-acrylate nanocomposites for laminate coating applications"* Monica Bertoldo, Simona Bronco, Piero Narducci, Stefano Rossetti, Marco Scoponi, *Macromol. Mater. Eng.*, **2005**, 290(5), 475-484. ISSN: 1438-7492; IF: 1.421
- 18) *"Towards the Supramolecular Structure of Collagen: a Molecular Dynamics Approach"*, Susanna Monti, Simona Bronco and Chiara Cappelli, *J. Phys. Chem. B.* **2005**, 109, 11389. ISSN: 1520-6106; IF: 4.033
- 19) *"Trifluoroethanol: key solvent for palladium-catalyzed polymerization reactions"*, A. Scarel, J. Durand, D. Franchi, E. Zangrando, G. Mestroni, B. Milani, S. Gladiali, C. Carfagna, B.

- Binotti, S. Bronco, T. Gragnoli, *J. Organometal Chem.* **2005**, 690/8, 2106. ISSN: 0022-328X; IF: 2.025
- 20) "Surface energy induce asymmetric phase distribution in films of a binary polymeric blend", M. Bertoldo, M. B. Coltelli, L. Miraglia, P. Narducci, S. Bronco, *Polymer*, **2005**, 46, 11311. ISSN: 0032-3861; IF: 2.849
- 21) "Computational Study of Conformational and Chiroptical Properties of (2R,3S,4R)-(+)-3,3',4-4',7-Flavanpentol", C. Cappelli, S. Bronco, S. Monti, *Chirality*, **2005**, 17, 577-589. ISSN: 0899-0042; IF: 2.072
- 22) "Synthesis of Citric Acrylate Oligomer and Its In-Situ Reaction with Chrome Tanned Collagen (Hide Powder)", A. A. Haroun, R. A. Masoud, S. Bronco, *Macromol. Symp.* **2006**, 25(1), 187. ISSN: 1022-1360; IF: 0.913
- 23) "Dichroic Properties of Bis(benzoxazolyl)stilbene and Bis(benzoxazolyl)thiophene Dispersed into Oriented Polyethylene Films: A Combined Experimental and Density Functional Theory Approach" Andrea Pucci, Chiara Cappelli, Simona Bronco, and Giacomo Ruggeri, *J. Phys. Chem. B*, **2006**, 110(7), 3127-3134. ISSN: 1520-6106; IF: 4.033
- 24) "Luminescent Bis(benzoxazolyl)stilbene as a Molecular Probe for Poly(propylene) Film Deformation", Andrea Pucci, M. Bertoldo, S. Bronco, *Macromol. Rapid Comm.* **2005**, 26, 1043. ISSN: 1022-1360; IF: 3.126
- 25) "Characterization of Supramolecular Polyphenols-Chromium(III) Clusters by Molecular Dynamics Simulations", S. Bronco, C. Cappelli, S. Monti, *J. Phys. Chem. B*, **2006**, 110, 13227-13234. ISSN: 1520-6106; IF: 4.033
- 26) "Towards the Design of Highly Selective Recognition Sites into Molecular Imprinting Polymers: a Computational Approach", S. Monti, C. Cappelli, S. Bronco, P. Giusti, G. Ciardelli, *Biosensors and Bioelectronics*, **2006**, 22, 153-163. ISSN: 0956-5663; IF: 3.463
- 27) "Statistical Approach for the Determination of the Stereoregularity of Optically Active CO-Propylene-Copolymers", Simona Bronco, *Helv. Chim. Acta*, **2006**, vol. 89. ISSN: 0018-019X; IF: 1.650
- 28) "Polyketone Nanocomposites by Palladium-Catalyzed Ethylene-Carbon Monoxide-(Propene). Co(Ter)polymerization Inside an Unmodified Layered Silicate", H. A. Miller, S. Moneti, F. Vizza, E. Passaglia, C. Bianchini, S. Bronco, S. Ceriegi, R. Sulcis, M. Frediani, F. Ciardelli, G. Costa, *e-polymer*, **2006**, n.003. ISSN: 1618-7229; IF: 0.926
- 29) "Conferring Dichroic Properties And Optical Responsiveness To Polyolefins Through Organic Chromophores And Metal Nanoparticles", A. Pucci, G. Ruggeri, S. Bronco, M. Bertoldo, C. Cappelli, Francesco Ciardelli, *Prog. Org. Coat.*, **2007**, 58, 105. ISSN: 0300-9440; IF: 1.535
- 30) "Modification of Gelatine by Reaction with 1,6-Diisocyanatehexane", M. Bertoldo, S. Bronco, T. Gragnoli, F. Ciardelli, *Macromolecular Bioscience*, **2007**, 7, 328. ISSN: 1616-5187; IF: 1.891

#### Scientific publications on italian journal

- 31) "Nuovi materiali polimerici derivanti dalle poliolefine" Ciardelli, F.; Altomare, A.; Aglietto, M.; Bronco, S.; Castelvetro, V.; Passaglia, E.; Ruggeri, G.; Taburoni, E. *La Chimica e L'industria* **2003**, 85(3), 57-61. ISSN: 0009-4315
- 32) "Lo sviluppo del settore conciario in Toscana: esempi di collaborazione con il mondo accademico" Ciardelli, F.; Bronco, S.; Costantini, N.; Lazzaroni, R.; Taburoni, E.; Ghimenti, G.; Lombardi, G. *CPMC* **1999**, 75(3), 109-128. ISSN: 011-3034
- 33) "Un approccio modellistico allo studio delle proprietà di legame e della struttura supramolecolare del collagene" F. Ciardelli, S. Bronco, C. Cappelli, S. Monti, *CPMC*, **2005**, 81(2), 95. ISSN: 011-3034

#### Proceedings

- 34) "Olefin-Carbon Monoxide Alternating Optically Active Copolymers and Terpolymers" Bronco S.; Consiglio, G.; Gindro, E. P. L. *PMSE* 1997, 76, 106; *Spring meeting of the American Chemical Society, Division of Polymeric Materials: Science and Engineering*, San Francisco (California, Stati Uniti) 13-17, **1997**, 76, 106-107. ISSN: 0743-0515.
- 35) "Zeolite Supported Metallocene Catalysts: Effect of Support Structure and Surface Groups on the Polymerization Process" Ciardelli, F.; Altomare, A.; Michelotti, M.; Arribas, G. Bronco, S. *Metalorganic Catalysts for Synthesis and Polymerization*, Edited by W. Kaminsky, Springer-Verlag Berlin Heidelberg **1999**, 358.
- 36) "Supported metallocenes: monosite and multisite catalysts for olefin polymerization" Ciardelli, F.; Altomare, A.; Bronco, S. *Studies in Surface Science and Catalysis 130A(International Congress on Catalysis)*, Edited by A. Corma, F.V. Melo, S. Mendioroz and J.L.G. Fierro, Elsevier **2000**, 187-196. ISSN: 0167-2991.
- 37) "Influence of catalyst controlled molecular structure on the postmodification of polyolefins" Ciardelli, F.; Altomare, A.; Bronco, S. *Future Technology for Polyolefin and Olefin Polymerization Catalysis*, Edited by M. Terano, T. Shiono, Technology and Education Publishers, Tokyo, **2002**.
- 38) "A molecular dynamics approach to the supramolecular structure of collagen and related binding properties", Ciardelli, F.; Bronco, S.; Cappelli, C.; Monti, S. *Polymer Preprints*, **2006**, 47(2), 84-85. ISSN: 0032-3934.

#### Books

- 39) Ciardelli, F.; Passaglia, P.; Bronco, S., **2004**, "Polymers and their Synthesis", in *Chemical Sciences, Engineering and Technology Resources*, edited by Sergio Carra, Maurizio Masi, in *Encyclopedia of Life Support Systems (EOLSS)*, Developed under the Auspices of the UNESCO, Eolss Publishers, Oxford ,UK, [<http://www.eolss.net>].
- 40) "Modulation of the Superstructure and Response of Macromolecules Through Molecular Interactions and Nanodispersion", F. Ciardelli, O. Pieroni, S. Bronco, C. Cappelli, G. Ruggeri, A. Pucci, *Functional Nanomaterials*, American Scientific Publisher, Los Angeles, California, USA, Ed. Kurt E. Geckeler and E. Rosenberg, 2006, *Charter 27*, 435-442. ISBN: 1-58883-067-5

#### Patents

- 41) Bronco, S.; Consiglio, G.; Di Benedetto, S.; Drent, E.; Heeres, H. J. *Eur. Pat. Appl.* 9410884.2 "Preparation of Copolymers of Carbon Monoxide and  $\alpha$ -Olefins".
- 42) Andreotti, L.; Sterner, M.; Trani, G.; Schiavon, G.; Zaggia, C. A.; Raseti, M.; Bertoldo, M.; Bronco, S.; Cappelli, C.; Liuzzo, V. PCT Int. Appl. (2005), *WO2005118666 A1 20051215* "N-Acylurea Compounds for Preparing Polyurethanes"