

## CV of Elisa Passaglia

### Affiliation and Official Address

CNR-ICCOM UOS Pisa  
Area della Ricerca Via Moruzzi , 1  
56124 Pisa (italy)  
tel +39-050-3152294 fax +39-050-3152555

### Personal Data

Birth date: January 26<sup>th</sup>, 1966  
Place of Birth: Pisa (Italy)  
Nationality: Italian  
Marital Status: Married (1 son, Gianluca (01/06/1995))

### Education

*Ph.D. in Chemistry* Department of Chemistry and Industrial Chemistry-DCCI, University of Pisa, 1997;

Thesis Title: "Post-modification of polyolefins and their reactive blending with polyamide"  
Academic advisors: Prof. Francesco Ciardelli (DCCI), Prof. Mauro Aglietto (DCCI);  
External Advisor: Prof. Giorgio Montaudo (University of Palermo).

*Master in Industrial Chemistry* Department of Chemistry and Industrial Chemistry, University of Pisa, 1993;

Thesis Title: "Synthesis of fluorinated acrylic polymers";  
Academic Advisors: Prof. Francesco Ciardelli, Prof. Mauro Aglietto;  
Final Examination: 110/110 summa cum laude.

*High School certificate* (Liceo Classico "Galileo Galilei, Pisa, 1985)

### Professional Activity:

#### Positions held, Scientific Coordination of Research Activities & Experience

The research activities developed and carried out by Elisa Passaglia since 1993 are concerning the materials preparation through the macromolecular chemistry with reference, in particular, to the synthesis, modification and blending of organic polymers (mainly polyolefins, polyesters, polyamides). The most important matters are focused to 5 main topics:

- Synthesis and characterization of functional polymers by post-reactor reactions: fine-tuning selection of radical reactions and reagents as tools to introduce specific functionalities and/or chromophors by controlling macromolecular structure/architecture
- Nanostructured materials (polymer nanocomposites): preparation and study of confinement effects and their influence on barrier and flame resistant properties
- Reactive blending and processing of polymers: the reactions at the interface and their effects on interphase morphology stabilization
- Preparation of micro- and nano-composites through catalytic and radical polymerization approaches (reactor blending)
- Properties/structure relationships at the nanoscale of polymer based materials

All these researches have been carried out on the basis of specific learning on the macromolecular science to develop new knowledge about relationship between structure and sovramolecular

properties of complex polymer materials (blends, nanocomposites, hybrids systems) by taking into account the possible final applications.

*Permanent Researcher @ CNR-ICCOM UOS Pisa (since 2001)*

Since 2001 these research activities have been carried out and accounted in the CNR projects, actually the PM.P03.015.005 // "Sviluppo e applicazioni di metodologie preparative di materiali polimerici funzionali nanostrutturati in processi di reactive blending" which Elisa Passaglia is responsible and have been also developed in the frame of national and international projects and research agreements with industrial companies. Elisa Passaglia is/was the scientific responsible of the different contract agreements and national projects and she coordinates/d the technical planned activities of the following research programmes. In particular she is/was:

- Scientific responsible of the research agreement between ICCOM-CNR and BASF Construction about "Surface modification of PP fibers by UV grafting of polar functionalities for concrete applications". Budget 44000 euro. (duration 12 months starting date 3-12-2013)
- Scientific responsible of CNR research unit of European Project 7° framework. "DIBBIOPACK" "DEVELOPMENT OF INJECTION AND BLOW EXTRUSION MOLDED BIODEGRADABLE AND MULTIFUNCTIONAL PACKAGES BY NANOTECHNOLOGY: IMPROVEMENT OF STRUCTURAL AND BARRIER PROPERTIES, SMART FEATURES AND SUSTAINABILITY". Grant agreement n°280676 Budget 102,911.00 euro (duration 48 months starting date March 2012)
- Scientific responsible of the research agreement between ICCOM-CNR and BASF Construction about "Grafting of polar functionalities onto polypropylene based macromolecules suitable as fibers for concrete (HPC)" Budget 44,000 euro (duration 12 months 2011-2012)
- Scientific responsible of CNR research unit of the project "New polymeric systems with electrical and optical functionality via adhesive nano and micro dispersion for the production of materials and devices for intelligent applications POLOPTEL" founded by Fondazione Cassa di Risparmio conv. 167/09. (duration 48 months starting date 1/04/2011, currently in progress). Budget 70000
- Scientific responsible of CNR research unit of the National Project financed by MIUR: "Inorganic nanohybrids based on bio-polyesters from renewable resources". Year 2008 - prot. 200898KCKY\_004; funds: 53,000 euro (duration 24 months starting in 2010 )
- Scientific responsible of the research agreement between ICCOM-CNR and ECOPOLIMERI s.r.l. Casalgrande (RE) about the characterization and the modification of polycarbamide resins; Budget 30,000 euro (duration 12 months starting in 2010)
- Scientific responsible of the research agreement between ICCOM-CNR and FARAPLAN s.r.l Fara Vicentino (VI) about the study of new micro and nanofiller for PVC-based blends Budget 50,000 euro; (duration 18 months 2008-2010).
- Scientific responsible of the research agreement between the University of Pisa (department of Chemistry and Industrial Chemistry) and Dow Company "Functionalisation of Polyolefins by utilizing nitroxyl chemistry or other novel routes"; budget 200,000 euro (duration 36 months 2006 -2009).
- Scientific responsible of the research agreement between ICCOM-CNR and SpecialChem SA (Paris) about the research project "Co-agents used to control free radical crosslinking of elastomers: State of art and market requirements"; Budget 10,000 euro (duration 6 months in 2009).

- Scientific responsible of two research agreements between CNR-ICCOM and ATOFINA-ARKEMA Company "Post-modification of polypropylene: The control of maleic anhydride grafting onto polypropylene"; budget about 70,000 euro( duration 48 months 2002-2006).
- Scientific responsible of the research agreement between CNR-ICCOM and Crosspolimeri for a study related to "Flame retardant polyolefin"; budget: 30,000 euro (duration 12 months 2003-2004)
- Participant of the national project RBFR10DCS7 FIRB -PROGRAMMA "FUTURO IN RICERCA" Anno 2010 "GREENER "Towards multifunctional, efficient, safe and stable "green" bio-plastics based nanocomposites of technological interest via the immobilization of functionalized nanoparticles and stabilizing molecules"; (duration 36 months starting date 8-03-2012; budget 270000 euro).
- She worked ,collaborated and took part in the national project FIRB Nanopack MIUR-NANOPACK FIRB 2003 D.D.2186 Prot.N.RBNE03R78E focused to the synthesis and characterization of responsible materials for food packaging (duration 36 months 2005-2009)
- She worked ,collaborated and took part in the European project STREP Nanohybrid (NMP3-CT-2005-516972) focused to the synthesis and characterization of nanohybrid materials (duration 48 months 2004-2008)
- She collaborated to the research activities related to the modification of recycled materials derived from tires (vulcanized/filled rubber particles) in the frame of a collaboration with Pirelli. The results have been patented in three PTC applications (2004-2009)
- She collaborated to the European project Polycat (RTN) (from 2001 to 2004) focused to the homogeneous catalysis for producing polyolefins (from 2001 to 2004)

#### *Post-Doc fellow in Material Science (1997-2001)*

Research Advisor: Prof. Francesco Ciardelli

Main important topics: 1) preparation, modification and characterization of blends between polyolefins and polyamide or polyester; 2) modification of polyethylene and its blends by controlled and modulated crosslinking processes for the obtainment of shape memory materials for packaging applications; 3) modification of rubber by controlled degradation processes for the obtainment of viscosity improvers for engine oil; 4) synthesis and characterization of acrylic water suspensions (also fluorinated) for possible application in the fields of adhesive and additives for stone (monuments) protection. In collaboration and in the frame of research agreements with companies Replast, So.f.ter, Syrom, Enichem, Agip and LAIM

#### Teaching Experience in Italy and abroad

- Contract Professor at the University of Pisa of the course "Tecnologie dei materiali polimerici" (Master in Chemistry, years 2010-2011, 2011-2012 and present)
- Invited professor at XXXIII Convegno Scuola AIM "Mario Farina" "Sintesi di materiali polimerici" Maggio 2012
- Invited professor at the Scuola Normale Superiore of the course "Fondamenti di Chimica per le nanoscienze" (Master in Chemistry, Physics and PhD in Chemistry year 2010)
- Contract Professor at the University of Pisa of the course "Tecnologie dei materiali" (Master in Chemistry, years 2009-2010; 2008-2009; 2007-2008)
- Invited Professor at the University of Concepcion in Chile of the PhD course entitled "Post-modification of polyolefins and their use in blends with polar polymer or inorganic micro-/nano-filler" (November 2007)

- Contract Professor at the University of Pisa of course "Nanocompositi da argille lamellari" (Master in Chemistry, 2006-2007)
- Contract Professor at the University of Pisa of course "Laboratorio di Chimica dei Materiali (Master in Material Science, 2005-2006)
- Contract Professor at the Training School "Imballaggi flessibili e legislazione del packaging" at Parco Scientifico e Tecnologico di Tortona, (AL).
- Invited Professor at XXVII Convegno-Scuola AIM "Leghe e formulati polimerici: miscelazione fisica e reattiva" (2006)

Invited Professor at XXVI Convegno-Scuola AIM "Caratterizzazione termica di materiali polimerici" (2005)

#### Research Advisor of post-Doc, PhD and Master Students

Advisor of 16 Master Students (Degree in Chemistry, Industrial Chemistry and Materials Science, at Department of Chemistry and Industrial Chemistry, University of Pisa from 2001 to present) and 1 PhD Student in Chemistry (Department of Chemistry and Industrial Chemistry, University of Pisa 2005-2008); invited Co-Advisor for a a Ph.D student of the Petroleum and Petrochemical College (Chulalongkorn University, Bangkok 2010); examiner member of three committees for PhD students at Scuola Normale Superiore (2005, 2007 and 2010)

Scientific responsible and supervisor of 17 Post-Doc and grant-holder students.

Member of the scientific board of Regional Innovation pole on the Nanotechnology, [www.nanoxm.it](http://www.nanoxm.it)

#### Editor and Reviewer

Associate Editor of Polymer International

[http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1097-0126/homepage/EditorialBoard.html](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1097-0126/homepage/EditorialBoard.html)

Reviewer of the following international journals: Polymer, European Polymer Journal, Journal of Material Science, Journal Applied of Polymer Science, Journal of Composite Materials, Journal of Polymer Research, Colloid and Polymer Science, Polymer Engineering and Science, Express in Polymer Letter. Elisa Passaglia acted as reviewer for more than 30 papers in the last 12 months and handled more than 160 manuscripts as associate editor.

#### Invited lectures and Publications:

- Invited at Fourth International Conference on Polymer Modification, Degradation and Stabilization, S. Sebastian, Spain 10th -14th September 2006 Key note lecture
- Invited at Polymer Blends 9th European Symposium, 9-12 September 2007, Palermo key-note lecture
- Invited speaker at Ciclo de Conferencias Universidad de Concepcion 14th November 2007
- Invited at The 6<sup>th</sup>International Discussion meeting on relaxations in Complex Systems (6 IDMRCS) August 30<sup>th</sup>-Septemebr 5<sup>th</sup>, 2009 Rome, Italy
- Invited at "Giornata Tecnologica AIM, Innovazione nei materiali polimerici. Dalla sintesi ai prodotti" Milano November 2010 Organized by AIM.

Author of 94 publications in international journals, 9 patents, 7 articles in books and of more than 100 communications to international congress.

H-index: 21 as reported by ISI web of Knowledge (v.4.6)- Web of Science ([www.isiknowledge.com/](http://www.isiknowledge.com/)) Thomson Reuters at the present