

**Claudia Crestini**  
**CURRICULUM VITAE ET STUDIORUM**

**1. BIOGRAPHICAL**

**Born** Rome, Italy, January 2<sup>nd</sup>, 1966.

**Address:** Dipartimento di Scienze e Tecnologie Chimiche  
Università di Roma Tor Vergata  
Via della Ricerca Scientifica, 1 - 00133 Rome, Italy  
+39.06.72594734 (office)  
+39.06.72594328 (fax)  
+39.3208394526 (mobile)  
*e-mail:* [crestini@uniroma2.it](mailto:crestini@uniroma2.it)

**Education**

*Laurea Summa cum Laude* in Chemistry, University of Rome La Sapienza, 1990

1986: Ph. D. Engineering, University of Tuscia, Viterbo

**Academic Positions:**

1990 Consultant for the national research council Center for the Study of Natural Substances, University of Rome La Sapienza  
1990-1993 Researcher and team leader at the Francesco Angelini Research Institute, Pomezia, Italy.  
1995 Visiting Scientist, McGill University, Montreal, Que., Canada  
1996 Visiting Scientist, McGill University, Montreal, Que., Canada  
1997 Postdoctoral Fellow, McGill University, Montreal, Que., Canada  
1998-present Assistant Professor of Chemistry, University of Rome Tor Vergata  
2000 visiting scientist at the Wroclaw University (Polland)

**Services**

2010 Chairwoman of the Scientific Council of the EU Centre of Excellence for Polymer Materials and Technologies (CoE PoliMaT)  
2009 Nominated and elected fellow of the International Academy of wood Science  
2008 Member of the Industrial Advisory Board of the EU project Forbioplast  
2000-present Member of the Scientific Committee of the European Workshop on Lignocellulosic and Pulps EWLP Consultant activities  
2001-present Member of the executive board and Scientific committee of the Italian meeting on Lignin Chemistry, ITALIC  
2005-2008 Member of the COST ACTION E 41 Analytical tools with applications for wood and pulping chemistry  
2008-2011 Member of the management committee of the COST ACTION E54 Characterisation of the fine structure and properties of papermaking fibres using new technologies.  
2008-2011 Member of the management committee and leader of WG3 of the cost action and FP 0602 Biotechnology in Biorefinery  
2011-present Member of the management committee and leader of WG2 of the cost action FP 0901  
2012-present Member of the management committee and responsible for short term scientific missions of the COST ACTION FP1105  
2013- Member of the scientific committee of the International Symposium on Wood and Fiber Pulping Chemistry, 2013 Vancouver, Canada.  
2013- Member of the scientific committee of the 4th Workshop Green Chemistry and Nanotechnologies in Polymer Chemistry 4-6 September 2013 Pisa, Italy

**Awards:**

1990 Prize Reiss Romoli for the best graduation thesis  
2011 The paper: **Milled Wood Lignin: A Linear Oligomer.** by C Crestini, F Melone, M Sette and R Saladino. *Biomacromolecules* **2011** **12** **11** PMID: 21928799 DOI: 10.1021/bm200948r has been selected for evaluation by Faculty of 1000 (F1000). Faculty of 1000 (F1000) identifies and evaluates the most important articles in biology and medical research publications. Articles are

selected by a peer-nominated global 'Faculty' of the world's leading scientists and clinicians who then rate them and explain their importance. On average, 1500 new evaluations are published each month; this corresponds to approximately 2% of all published articles in the biological and medical sciences.

- Peer Review for several international Journals, among them: Science, Biomacromolecules, Journal of Agricultural and Food Chemistry, Canadian Journal of Chemistry, Bioorganic and Medicinal Chemistry, Biotechnology and Bioengineering, Journal of Bioelectrochemistry, Tetrahedron, tetrahedron Letters, Annali, Wood Chemistry and Technology, Bioresources, ACS Sustainable Chemistry & Engineering, Chem SusCHEM. She is Editor of the Journal of Applied Chemistry and Guest editor of Bioresources. She has been reviewing several chapters of ACS symposium series books.
- Editor of the Journal of Applied Chemistry and Guest editor of Bioresources
- Recently she is or has been:
  - Chair of the First Italian meeting on Lignin Chemistry, ITALIC 1, Rome
  - Co-Chair of the Second Italian meeting on lignin Chemistry, ITALIC 2 Como, February 20,21-2003
  - Co-Chair of the Third Italian meeting on lignin Chemistry, ITALIC 3, L'Aquila, June 2005
  - Chair of the Fourth Italian meeting on lignin Chemistry, ITALIC 4, Rome, May 2007
  - Local organizer of the COST Action E41 workshop Rome May 2007
  - Member of the Scientific Committee of the Workshop: Biotecnologie bianche e biorisorse vegetali rinnovabili: prospettive di ricerca e applicazioni CNR Roma 5 Marzo 2007
  - Member of the Scientific Committee of the Workshop: Biotechnology for a sustainable Pulp and Paper Industry, Viterbo 2003.
  - Member of the Scientific Committee of the Workshop: : prospettive di ricerca ed applicazioni. CNR Roma, Marzo 2007
  - Scientific organizer of the Second Annual Workshop of COST FP0602. Biotechnology for lignocellulose biorefineries. Enzymatic fiber modification and hydrolysis. December 4-5, 2008, Biel, Switzerland
  - Scientific organizer of the Third Annual Workshop of COST FP0602. Biotechnology for lignocellulose biorefineries. September 2-4 2009, Varenna, Italy.
  - Scientific organizer of the Final Workshop of COST FP0602. Biotechnology for lignocellulose biorefineries. Enzymatic fiber modification and hydrolysis. September 4-5, 2011, Viterbo, Italy.
  - Member of the Scientific Committee for the GEI-ERA 2012 Italian Electrochemistry Conference
  - Member of the Scientific Committee for AICInG National Conferences (2006, 2008, 2010)
  - Member of the National Advisory Board for the X International Conference on Nanostructured Materials NANO 2010, Roma, 2010.
  - Member of the International Scientific Committee for the Symposium *Materials for Polymer Electrolyte Membrane Fuel Cells*, E-MRS 2009 Spring Meeting, Strasburg, 2009
  - Chairperson of the Scientific Committee for the 1st National Workshop AICInG, Rome, 2006.
  - Co-organizer of *Electroceramics VIII-2002*, European Ceramic Society Conference, August 2002

### **Professional Memberships**

International Academy of Wood Science

Interuniversity Consortium for Materials Science and Technology

## **2. RESEARCH**

Author of 1 patents, 2 books and over 120 publications on international refereed journals, and over 50 scientific oral contributions at international conferences, meetings and schools.

Her papers have been cited over 1700 times and her h-index is 26 (ISI & Scopus).

The scientific activity of Dr. Claudia Crestini is focused on different aspects of Bioinorganic Chemistry. **She is author of about 120 publications on international journals.** She is involved as a wood chemistry expert as reviewer and referee of EU research projects since 1997(FP5, FP6, FP7).

To date she is referee of the following periodicals: Science, Biomacromolecules, Journal of Agricultural and Food Chemistry, Canadian Journal of Chemistry, Bioorganic and Medicinal Chemistry, Biotechnology and Bioengineering, Journal of Bioelectrochemistry, Tetrahedron, tetrahedron Letters, Annali, Wood Chemistry and Technology,

Bioresources, ACS Sustainable Chemistry & Engineering, Chem SusCHEM. She is Editor of the Journal of Applied Chemistry and Guest editor of Bioresources. She has been reviewing several chapters of ACS symposium series books.

**In 2001 she activated the Italian Meeting on Lignin Chemistry**

***Professor Crestini is solely responsible for the establishment of Bioinorganic chemistry laboratory at the Tor Vergata university in Rome, one of the few Italian Laboratories with significant R&D activities in the field of bleaching, lignin structural characterization, catalysis, biomimetic catalysis and biotechnology in lignin and lignans oxidative modifications.***

Her research activity is now mainly directed towards the following topics:

- Structural characterization of polyphenolic biomolecules by advanced heteronuclear NMR techniques and quantitative 2D heterocorrelated NMR spectroscopy.
- Study of supramolecular association-dissociation behavior in lignin. Structural characterization of archaeological wood materials. Evaluation of ageing processes.
- Structural characterization of Tannins
- Development of supported catalysts and biomimetic catalysts for the activation of oxygen and hydrogen peroxide to the selective oxidation and functionalization of natural substances: lignans, terpenes, cardanols, nucleosides, lignins and lignin model compounds.
- Development of immobilized catalysts from metalloporphyrins, methylrhenium trioxide
- Biocatalysis in processes of lignin degradation, with a special focus on the study of manganese peroxidase, laccases and laccase-mediator systems.
- Detection of radical species by 31P- based spin trap systems in oxidative systems: Lipoxigenase, laccase, bleaching solutions.
- Development of new materials from lignins: nanoporous lignin, lignin nanocapsules
- Role of catalytic systems in prebiotic synthesis
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Director of a Research Group consisting of 3 Post-doctoral Fellows, 1 Ph D Students, 1 Graduate Student.

***Research projects (2005-present)***

2012-2015	BIOMIMETIC-new bioinspired processes and products from renewable feedstocks. GAn282945 EU collaborative project. 550210 euro responsabile di unità
2010-2013	EFFEBIOETA2-bioetanolo di II generazione da biomasse italiane: qualità del feedstock, efficienza di conversione, e ottimizzazione d'uso dei residui. Ministero delle Politiche Agricole alimentari e Forestali. DM 28382/7815/2009 02/12/2009. 76.725 EURO responsabile di unità
2011-2013	Ministero dello sviluppo economico Industria 2015. Bando PII Efficienza Energetica. Programma n. EE01_00023 Decreto di concessione D.M. n. 00003EE01 del 23.07.2009. Industria 2015 progetto PRIT SVILUPPO DI UNA TECNOLOGIA DI PRETRATTAMENTO ITALIANA PER LA PRODUZIONE DI BIOETANOLO DI SECONDA GENERAZIONE. Contratto di ricerca con il CNR. subcontractor 30000 euro
2011-2013	progetti di ricerca congiunti per lo scambio di ricercatori nell'ambito del Programma Esecutivo Italia Slovenia per gli anni 2011 2013 responsabile italiano
2009-2010	Testing samples using techniques such as nuclear magnetic resonance (NMR) in particular with relation to bleach containing products Procter & Gamble 26/06/2009-26/06/2010
2010-2011	Samples of lignin-based capsules containing perfume for proof-of-concept experiments of their suitability in P&G consumer products. Procter & Gamble 07/2010 -01/2011
2010	Supported laccase and peroxidase in textile bleaching Huntsman 2009 09-03/2010 – 09-06/2010

### 3. INVITED CONFERENCES (selected)

1. Recent advances in lignin oxidative upgrade. Wallenberg Wood Science Centre (WWSC) annual workshop. 19/06/2012 Workshop at Häringe Slott, June 18-19, 2012
2. Lignin oxidative upgrade. Claudia Crestini International Conference on Biobased Polymers and Composites. May 27-31/2012 Siofok, Hungary Invited Plenary lecture <http://www.bipoco2012.hu/>
3. Biotrans 2011 Giardini Naxos (ME), Italy. 10th International Symposium on Biocatalysis, October 2 - 6, 2011. Oxidative enzymes in lignin biorefinery Invited plenary lecture <http://www.biotrans2011.org/>
4. September 18-24, 2011: EuroBioRef Utilization of Biomass for the Production of Chemicals or Fuels. "The concept of Biorefinery comes into operation" September 18th-24th, 2011 Castro Marina, Lecce, Italy CONVERSION OF LIGNIN: CHEMICAL TECHNOLOGIES AND BIOTECHNOLOGIES <http://www.eurobioref.org>
5. Prebiotic chemistry of formamide in terrestrial conditions. Departamento de Ciencia Químicas, Facultad de Ecología y Recursos Naturales, Universidad Andres Bello, Santiago, Chile, 13/07/2010
6. Advances in laccase immobilisation: design and applications. Laccase Academy Porto, March 8-10 2010
7. New products and materials by chemical and biochemical treatments from forestry and agroindustry wastes, Lubiana, Slovenia, 21-07-2008
8. Meeting of the Eu project Forbioplast 16-18/07/2009, Riga Oxidative strategies in lignin chemistry
9. Pulping and Bleaching Chemistry. Tutorial at Procter & Gamble, Bruxelles, May 15, 2006.
10. Advances in the activation of oxygen and hydrogen peroxide: catalysis, biocatalysis and development of biomimetic systems. Meeting at Procter & Gamble, Bruxelles, May 15, 2006.
11. Toward the forest biorefinery: new chemistry and tools. April 13, 2006, Centre Technique du papier (CTP) Grenoble.
12. Studies on the Mechanism of the Laccase Mediator System; Where do we go from Here? Biotechnology in the Pulp and Paper Industry Cost action E23 meeting, Viterbo, 10.12 November 2003, pp.62-73.
13. On the Mechanism of the Laccase-Mediator System in the Oxidation of Lignin. North Carolina State University, Wood Chemistry Day. June 6, 2003 North Carolina State University, Raleigh, USA.
14. Methyltrioxorhenium: a new catalyst for the activation of hydrogen peroxide to the oxidation of lignin and lignin model compounds. North Carolina State University Wood Chemistry Day. June 6, 2003 North Carolina State University, Raleigh, USA.
15. Chemistry of Straw Biopulping. Pulp and Paper Research Institute of Canada. June, 27, 1995 Pointe Claire, Quebec, Canada.