

Europass curriculum vitae



Personal information

Surname(s) / First name(s)

FORTUNATI ELENA

Address(es)

131, Via Tuderte – 05035 Narni (TR)

Telephone(s)

Home: +39 0744/733720

Mobile +39 320/9459241

E-mail(s)

elena.fortunati@unipg.it, elenafortunati@gmail.com

Nationality(-ies)

Italian

Date of birth

15/06/1983

Gender

married

Work experience

01/09/2013-present: Researcher at the University of Perugia, Faculty of Engineering Department of Civil and Environmental Engineering, Terni branch: “Sintesi e caratterizzazione di nanocompositi multifunzionali a matrice polimerica biodegradabile e cellulosa nanocristallina per il progetto HIVOCOMP”.

01/11/2012-31/08/2013: Researcher at the University of Perugia, Faculty of Engineering Department of Civil and Environmental Engineering, Terni branch, with a grant financed by L’Oreal Italia e UNESCO per le Donne e la Scienza with the project “Progettazione, sviluppo e caratterizzazione di biomateriali nanostrutturati capaci di modulare la risposta e il differenziamento delle cellule staminali”.

15/01/2011-14/01/2012 Researcher at the University of Perugia, Faculty of Engineering Department of Civil and Environmental Engineering, Terni branch: “Development and characterization of PEEK based nanocomposites”.

PhD studies 2007-2010. “Nanotechnology of Materials”, University of Perugia (Terni). Thesis Title: Synthesis and characterization of biodegradable polymer matrix composites for nanobiotechnological applications. (Prof. Josè Maria Kenny, supervisor – award on 26/11/2010).

April 2007-September 2007: Researcher at the University of Perugia (Materials Science and Technology research group STM - Terni) financed by a research grant of Umbria Region. **Project Title:** Development and characterization of biodegradable nanocomposites.

Stays abroad- working/studies exchange

Post-Doc (3 months 2011): University of Alicante, Department of Analytical Chemistry, Nutrition & Food Sciences Alicante, Spain. **Prof. Alfonso Jimenez.**

Pre-Doc (3 months 2010): KTH- Royal Institute of Technology. Stockholm, Sweden. **Prof. Lars Berglund.**

Pre-Doc 2009: University of Alicante, Department of Analytical Chemistry, Nutrition & Food Sciences Alicante, Spain. **Prof. Alfonso Jimenez.**

Education and training

2007-2010: PhD student in Nanotechnology of Materials, University of Perugia (Terni).

January 2009: Registration at engineering register (Terni-Italy) (class A, industrial section).

A-A 2006/2007: Master's degree in Materials Engineering (26/10/2007) - Mark: 110/110 e Lode. **Thesis Title:** "Sviluppo e caratterizzazione di nanocompositi a matrice polimerica biodegradabile". Supervisor: Prof. JM Kenny.

April 2007: Winner of the international award "**Leonardo da Vinci**": "*Bioinformatic and Nano-Biotechnology (BIO-NANO)*".

A-A 2004/2005: Degree in Materials Engineering (20/12/2005) Mark: 110/110 e Lode **Thesis Title:** "Caratterizzazione termica e meccanica di compositi a matrice polimerica per lo sviluppo di veicoli super-leggeri". Supervisor: Prof. JM Kenny.

Main Research Areas and Collaborations

Research Areas

1. Biodegradable polymers
2. Processing of polymers and advanced polymeric based composites
3. Bio-nanocomposites developing and characterization.
4. Sustainable additives for polymers.
5. Natural fibre and cellulose nanostructures: synthesis and modifications
6. Nanocomposites and thin films
7. Modification of biodegradable polymer (i.e. PLA, PHB, CH, PVA, etc.) for food packaging.
8. Active packaging. Natural antioxidants and antimicrobials.
9. Tissue engineering: stem-cell behaviour.
10. Surface modification: biomedical and antibacterial application.

Scientific Collaborations

Mexico, Universidad Nacional Autónoma de México, Prof. Higinio Arzate.

Spain, Alicante University, Prof. Alfonso Jimenez-Migallon.

Spain, CSIC, Madrid, Prof. M. Lopez Manchado and Prof. C. Mijangos.

Spain, University of Valencia, Prof. Amparo Chiralt.

Svezia, KTH, Prof. Lars Berglund.

University of Roma Torvergata, Prof. Bianco, Prof. Francesca Nanni, Dr. Ilaria Cacciotti.

University of Perugia, Prof. Loredana Latterini, Chemistry Department.

University of Perugia, Prof. Carla Emiliani, Dr. Sabata Martino, Section of Biochemistry and Molecular Biology.

University of Bologna, Prof. Nadia Lotti.

University of Pavia, Tissue Engineering Center, Pavia, Prof. L. Visai.

University of Camerino, Prof. Carlo Santulli.

University of Naples, Prof. Giuseppe Mensitieri, Dr. Giuseppe Scherillo

CNR Naples, Dr. Marino Lavorgna, Dr. Giovanna Buonocore

Tuscia University, Viterbo, DAFNE, Prof. Stefano Grego.

Organisational Skills, Competences and Teaching

Author activity: author of more than 40 articles on revised journals and book chapter.

Reviewer activity for international journals: Journal of Agricultural and Food Chemistry, Journal of Applied Polymer Science, Carbohydrate polymers, Material for Biomedical Applications, International Journal of Biological Macromolecules, Polymer Composites.

Teaching activities

- Supervisor of 1 Post-Doc and 1 PhD student.

- Assistant in Composite and Polymer Material Course, (2012-2013 and 2013-2014), undergraduate course.

-Supervisor of a master's degree thesis in Industrial Engineering (2012- Titled: Design, development and characterization of biodegradable polymer nanocomposites reinforced with cellulose nanocrystals and silver nanoparticles) and a degree thesis in in Industrial Engineering (2014- Titled: Development , optimization and characterization of waterborne polyurethane based nanocomposites with enhanced properties).

-Evaluation committee member of the Doctoral Thesis of Alberto Jimènez Marco at the University of Valencia (2013).

Congress Organization committee

-Organization committee member of XX CONVEGNO ITALIANO DI SCIENZA E TECNOLOGIA DELLE MACROMOLECOLE - AIM, Terni, Settembre 2011.

-Organization committee member of BIOPOL 2013 – Rome (Italy) October 2013.

Congress Participation

Participation to 40 National and International Conferences, with oral and poster presentations, following a note of the main important in the PI subject:

BIOPOLPACK, 29-30 May 2014 – Parma (Italy).

International COST Conference, “Eco-sustainable food packaging based on polymer nanomaterials” – 26-28 February 2014-Rome (Italy). *Title: Combined effect of cellulose nanocrystals extracted from phormium tenax leaves and limonene on the properties of PLA films. (Poster).*

NanotechItaly: 27-29 November 2013 – Venezia Mestre (Italy)

Title: Innovation in PLA based systems for food packaging. (Oral Presentation).

Biopol 2013: 1-3 October 2013 – Rome (Italy). *Title: Nanocomposite and surface coating approach for improved barrier, antibacterial and migration properties of PLA based films. (Poster).*

Frontiers in Polymer Science: 21-23 May 2013 Sitges (Barcelona- Spain)

Title: Barrier properties and overall migration of hydrogenated amorphous carbon layer coating PLA films. (Poster Presentation).

AIMAT 2012: 16-19 Settembre 2012 – Gaeta

Title: Biomateriali nanostrutturati a matrice di acido polilattico: nanoparticelle, nanocompositi e nanotopografia. (Oral Presentation).

MATBIM 2012: 23-26 Aprile 2012 – Dijon, Francia.

Title: Effect of modified cellulose nanocrystals and silver nanoparticles on the barrier, antiBACTERIAL and migration properties of PLA based nanocomposites (Oral Presentation).

EUROMAT 2011- European Congress and Exhibition on Advanced materials and processes. Montpellier 12-15 September 2011.

Title: Synthesis and characterization of multifunctional bionanocomposite films from poly(lactic acid), cellulose nanocrystals and silver nanoparticles (Oral Presentation).

XX Convegno Nazionale AIM. Terni 4-8 Settembre 2011.

Title: Multifunctional PLA bionanocomposite based on cellulose crystals and silver nanoparticles: potential prospective for food packaging application (Oral Presentation).

BIOPOL 2011: 3rd international conference on biodegradable polymers and suitable composites. Strasburg 29-31 August 2011.

Title: Multifunctional properties of PLA composites based on silver nanoparticles and nanocrystalline cellulose. (Oral Presentation).

VIII Convegno Nazionale INSTM. Catania 26-29 Giugno 2011.

Title: Multifunctional properties of PLA composites based on silver nanoparticles and crystalline cellulose: role of crystal micro- and nano-dimension (Oral Presentation).

ICAR 2010. Valladolid 3-5 November 2010

Title: "Effect of silver nanoparticles on the bacteria adhesion, antibacterial activity and silver ion release of biodegradable polymer nanocomposite" (Oral Presentation).

Title: "Combined role of Ag nanoparticles and surface plasma treatment on PLGA nanocomposite antibacterial activity" (Oral Presentation).

IX National Conference INBB. Rome, 21-22 October 2010.

Title: "Nanocompositi multifunzionali a matrice biodegradabile rinforzati con nanotubi di carbonio e nanoparticelle di argento" (Poster).

Title: "Nanocompositi a matrice polimerica biodegradabile per l'ingegneria tissutale" (Oral Presentation, Prof. J.M. Kenny).

SIB 2010. 24-26 Maggio 2010, Camogli. *Title: "Carbon nanotubes and silver nanoparticles for multifunctional conductive polymer composites" (Oral Presentation).*

Title: "Surface and antibacterial properties of plasma treated PLGA/Ag nanocomposites" (Poster).

BIOPOLPACK 2010. Parma, 15-16 Aprile 2010. *Title: "Sviluppo, caratterizzazione e degradazione di compositi multifunzionali a base di PLA" (Poster).*

6th International ECNP Conference on NANOSTRUCTURED POLYMERS & NANOCOMPOSITES. Madrid 28-30 Aprile 2010. *Title: "Development of multifunctional PLA composites: characterization and degradation in compost" (Poster).*

MATBIM 2010. 3-5 Marzo 2010- Parigi.

Title: "Development of multifunctional PLA composites: characterization and biodegradabilità" (Oral Presentation).

6th International Discussion Meeting on Relaxations in Complex Systems New Results, Directions and Opportunities. Sapienza, University of Rome, 30 August-4 September, 2009.

BIOPOL 2009: 2nd international conference on biodegradable polymers and suitable composites. 30 September-2October 2009.

Title: "Combining microcrystalline cellulose (MCC) and silver nanoparticles for multifunctional PLA based composites" (Poster).

EUROFILLER 2009: From macro to nanofillers for structural and functional polymer materials. 21-25 June 2009 Alessandria.

Title: "Effect of silver nanoparticles on the processing, antibacterial activity and in-vitro degradation of biodegradable polymer nanocomposite" (Poster).

Short course on Nanocomposites Chemistry and Processing. Alessandria, 25-26 Giugno 2009.

5th International ECNP Conference on NANOSTRUCTURED POLYMERS & NANOCOMPOSITES. Paris 15-17 April 2009.

Title: "Biodegradable polymer nanocomposite containing silver nanoparticle: material properties and antibacterial activity" (Poster).

Title: "Combining carbon nanotubes and silver nanoparticles for multifunctional conductive and antibacterial polymer based nanocomposites" (Poster).

VIII National Conference INBB, 23-24 October 2008, Rome.

Title: "Nanoparticelle di argento e nanocompositi biodegradabili: sistemi per applicazioni antibatteriche", (Poster).

X National Biotechnology Congress, 17 – 19 September 2008 Perugia 2008.

Title: "Silver nanoparticles as a vehicle for antibacterial applications", (Oral presentation and poster).

II Forum Nazionale dei Giovani Ricercatori su Materiali Polimerici e Biomateriali, 4-5 luglio 2008, Genova.

Title: "Development and bone cell interaction of a new poly(l-lactide)(PLLA)SWNTs substrate", (Oral Presentation).

4th international conference nanofun-poly , Roma, 16-18 April 2008.

Title: "New nanocomposites based on poly ε-caprolactone and carbon nanostructures", A. Bianco, I Armentano, M. Dottori, E. Fortunati, F. Nanni, C. Del Gaudio and J. Kenny (Oral Presentation Bianco).

Second young polymer scientists conference and sixth course on nanostructured

polymer materials: from chemistry to applications, 13-15 April 2008, Terni

Title: "Nanocomposite biomaterials based on poly ϵ -caprolactone and carbon nanostructures" (Poster).

Congresso Internazionale sulle Nanotecnologie, Nanotec2008, Venezia, 13-14 March 2008.

Title: "PLLA/SWNTs as New Nanocomposite for Biomedical Applications: Material Characterization and Biocompatibility Evaluation" (Poster).

WomenInNano Winter School Kranjska Gora, Slovenia, 7-9 February 2008.

Title: "Nanohybrid films based on poly ϵ -caprolactone" (Poster).

BIOPOL 2007 First International Conference on Degradable Polymers and Composites (Alicante, Spain), 3-5 October 2007.

Title: "Nanocomposite based on biodegradable polymers for biomedical applications" (Oral Presentation, Prof. J.M. Kenny).

Schools and Workshops:

WORKSHOP L.O.T. Oriel Italia. "L'ellissometria spettroscopica" , "La tecnologia QCM-D ex-situ ed in-situ". Terni, 27 March 2009.

WORKSHOP Italia-Serbia. Terni, 5-6 February 2009.

WORKSHOP: La tecnologia QCM-D, Microbilancia a cristalli di quarzo con monitoraggio della dissipazione Q- sense; L.O.T. Oriel Italia, Rome 31 October 2008.

4th international conference nanofun-poly, Rome, 16-18 April 2008.

Second young polymer scientists conference and sixth course on nanostructured polymer materials: from chemistry to applications, Terni, 13-15 April 2008.

Project Participation

- **Industrial Project with ALCANTARA S.p.a (Supervisor of the project).**
- **SEAMATTER – LIFE** Environment proposal n° LIFE11 ENV/E/000600- Revalorization of coastal algae wastes in textile nonwoven industry with applications in building noise isolation (**Researcher**).
- **POCO** - Carbon Nanotube Confinement Strategies to Develop Novel POLYMER MATRIX COMPOSITES THEME NMP-2007-2.1-1 - Nanostructured polymer-matrix composites.
- **FIRB** Idea progettuale N° RBIP06FH7J_002: "Impiego di cellule staminali, biomateriali e biotecnologie innovative per la produzione di tessuti" (**Researcher**).
- **PRIN-COFIN N° 20084XRSBS_001"Cellule staminali** - biomateriali per lo sviluppo di un modello di medicina rigenerativa per il sistema nervoso" (**Researcher**).
- **SAMSUNG GRO 2012:** "Multifunctional Composites based on Biopolymers and Biobased Additives for Food Packaging Applications" nella sezione "New Materials" finanziato da SAMSUNG Global Research Outreach (GRO) program (**Researcher**).

Personal skills and competences

National or international prizes

2013: Awarded (**Honour 5th Class/Knight**) by **President of The Italian Republic**, Giorgio Napolitano, for **scientific merit** acquired by the nation on a possible development of biodegradable scaffolds for biomedical applications and food packaging.

2012: Winner of the National Price L'Oréal Italia and UNESCO for Women and Science.

2007: Winner of the international award "**Leonardo da Vinci**": "Bioinformatic and Nano-Biotechnology (BIO-NANO)".

Other Technical skills and competences

Use of specific Equipment for material characterization:

TGA (Thermogravimetric Analysis), DSC (Differential Scanning Calorimeter), TMA (Thermo-mechanical Analysis).

FT-IR, Infrared spectroscopy. UV-Vis spectroscopy.

FESEM, Field Emission Scanning Electron Microscopy.

Contact Angle, FTA 1000 Analyser.

HP 4282A LCR meter for Dielectric measurements (20 Hz – 1 MHz).

HP 4291 meter (1 MHz – 1.8 GHz).

Dynamometer (Instron, Lloyd): tensile test, flexure test, compression test, creep test, ect.. Rheometer.

Extrusion and filmature process, Compression moulding, injection moulding.

Resin Transfer Moulding and Vacuum Infusion.

Mother tongue(s)

Italian

Other language(s)

English (**Business English LCCI certified**)
Spanish (**University of Alicante, Spain, Level B2 certified**).

***Computer skills and
competences***

Microsoft Office, Internet explorer, Windows, KaleidaGraph, Origin, Matlab, Java

Type B

Driving licence(s)

I authorize to handle my personal data according to the ex D. LGS. 196/03.

Aut No Min 13/I/0007145/03.04 of April 1 2008.DPR 196/2003

Terni, 07/07/2014

PhD Elena Fortunati

