CURRICULUM VITAE

EUROPEAN FORMAT

PERSONAL INFORMATION

Name, Surname	**BUONOCORE GIOVANNA GIULIANA**
Institute	**INSTITUTE OF POLYMER COMPOSITES AND BIOMATERIALS OF NATIONAL RESEARCH COUNCIL OF ITALY**
Position	**SENIOR RESEARCHER**
Address	**P.LE E. FERMI, 1 – 80055 PORTICI (NAPLES), ITALY**
E-mail	**GBUONOCO@UNINA.IT**

WORK EXPERIENCE

Dates (from – to)	**January 2008 - todate**
Name and address of employer	National Research Council – Institute for Composite and Biomedical Materials
Type of business or sector	Research Unit
Occupation or position held	**Researcher (2008-2021), Senior Researcher (2021-to date)**
Main activities and responsibilities	Research activity in the field of development and study of innovative advanced polymeric materials and functional coatings

Dates (from – to)	**December 2007 – February 2003**
Name and address of employer	National Research Council – Institute for Composite and Biomedical Materials
Type of business or sector	Research Unit
Occupation or position held	**Researcher (temporary position)**
Main activities and responsibilities	Research activity in the field of development and study of new polymeric materials: Study of durability of multifunctional film and coatings

EDUCATION AND TRAINING

Dates (from – to)	**March 2005 – July 2005**
Name and type of organisation providing education and training	Univerity of Texas, Austin – Dpt. of Chemical and Biomedical Engineering, Prof. Nicholas A. Peppas
Principal subjects occupational skills	"Incorporation and Release of Essential Oil from Highly Crosslinked P(MAA-g-EG) Films prepared by UV Polymerization"
Title	**Visiting Researcher**

Dates (from – to)	**November 2000 – February 2003**
Name and type of organisation providing education and training	University of Naples Federico II – Department of Materials and Production Engineering
Principal subjects occupational skills	Study and modelling of controlled release systems used in the field of food packaging
Title of qualification awarded	**Ph.D. Material Science**

Dates (from – to)	**March 2001 – July 2001**
Name and type of organisation providing education and training	Unversity of Santiago de Compostela – Department of Nutrition and Analytical Chemistry
Principal subjects occupational skills	Research activity : methods for determining active substances released from food packaging materials into food simulants.
Title of qualification awarded	**Visiting PhD**

Dates (from – to)	**February 1998**
Name and type of organisation providing education and training	University of Naples Federico II – Department of Chemical Engineering
Principal subjects occupational skills	Study of the rheological behaviour of immiscible polymer blends under shear flow.
Title of qualification awarded	**Degree in Chemical Engineering**

RESEARCH ACTIVITIES

Research interests

Research activities have been focused on the study, development, characterization and modelling of advanced and innovative polymeric multifunctional film and coatings used in various application fields such as food packaging, cultural heritage, energy and transport. In particular:

- New active polymeric films and coatings exhibiting antimicrobial, antibacterial and anticorrosion properties for packaging and cultural heritage.
- Innovative polymeric materials obtained by embedding functionalized micro and nanoparticles (i.e. graphenes, clay, silica) in order to impart tailored (multi)functionalities such as high barrier properties, control of water sorption, control and triggering of the active compound release
- The study of mass transport properties in polymers and nanocomposites has been focused on the determination of sorption kinetics and isotherm of low molecular weight compounds such as water and oxygen. The acquired knowledge has been used to design and optimize the multiscale structure of multifunctional materials and to study the durability of plastic materials in terms of plasticization of the polymeric structure induced by water molecules.

Scientific Research Responsability

She is and has been scientific responsible of the following research projects:

- August 2020 – May 2022:
Multifunctional coating on paper substrates for packaging",CRdC Nuove Tecnologie, PON 2014-2020 FESR;

- 15 June 2020 – 28 February 2021:
Innovative Polymeric, Biodegradable and Multifunctional coating for packaging – Biopolpack - PON 2014-2020 FESR – MISE

- May 2020 – March 2021:
RECOVER-COVID19 RicErCa e sviluppOVERsus COVID19 in Campania" - POR FESR CAMPANIA 2014-2020- Asse III Obiettivo Specifico 1.3 - Azione 1.3.1."

15 June 2020 – 14 June 2022
NANOstructured materials for the prevention of BIOlogical risk: from design to verification of applicability and effectiveness in the Healthcare field (NANOBIOSAN) Project funded by Bando Ricerca Discrezionale – Bando Ricerche in Collaborazione (BRiC) 2019 – Piano Attività di Ricerca 2019-2021 INAIL.

1 January 2019 – 31 December 2021
Application of NANOtechnology and RADiation processing in the development of advanced materials for food PACKaging sector (NANORADxPACK)
Programme Of Coordinated Research Activities F22070 funded by International Atomic Energy Agency (IAEA)

15 June 2017 – 14 June 2019
Development of nanostructured materials for the obtainment of Individual and Collective Protection tools to Prevent Organic Hazards in the Hospital (NANO-DISP)
Project funded by Bando Ricerca Discrezionale – Bando Ricerche in Collaborazione (BRiC) 2016 – Piano Attività di Ricerca 2016-2018 INAIL.

- 1 June 2017 – 31 May 2020
Valorization of Industrial fruits by-products and algae biomass waste: Development of Active Coatings to extend Food shelf life and reduce food losses – VIPACFood
Project funded by ERA-NET ARIMNET2 CALL 2016 (coordination of agricultural research in the mediterranean) of the European Union through the 7th framework programme for research, technological development and demonstration.

- 1 May 2015 – 30 April 2017
Research Project funded by CNR within the Bilateral Cooperation Agreement with Fundacao para Ciencia e a Tecnologia of Portugal in cooperation with the National Institute of Health

Ricardo Jorge, Dr. Ana Teresa Sanches Silva Title : Labelling and tracking of Nanoclay from food Packaging nanocomposites: a Food safety issue – NanoPack4Food

- *May 2015*
Research Project funded by CNR within the Short Term Mobility Program in cooperation with Universidade Federal do Rio Grande do Sul, Porto Alegre, Brasil (Dr. Donato) Development of advanced polymeric materials based on the use of biopolymers, ionic liquids and graphene for high-barrier packaging applications

- *1 Luglio 2011 – 30 Giugno 2014*
Research Project funded by italian Ministery of Economic Development (MISE) in the frame of Industria 2015 - Bando Nuove Tecnologie per il Made in Italy: Approcci TEcnologici Nuovi per l'Aumento della shelf-life e del contenuto di servizio nei prodotti qualificanti il modello alimentare mediterraneo (ATENA).

- *February 2009 – February 2011*
International Cooperation Project financed by National Research Council in cooperation with National Health Institute Dr. Ricardo Jorge, Lisboa (Portugal) focused on "Development of active antioxidant materials for food packaging applications".

Books and Articles

She is authors and co-authors of 96 scientific contributions (full papers, communication, review) in international peer-reviewed journals, 3 book chapter and 4 patents.

Her works received more than 3.400 citations and her activity is ranked with an H index of 34 (Scopus Database source). She has presented her scientific results in more than 90 national and international congresses and she has been Invited speaker in more than 20 events. In the following are reported selected papers in the last five years related to topic of the proposal:

1. Santillo C.,Godoy A.P., Donato R.K., Espanhol Andrade R.J., **Buonocore** G.G., Xia H., Lavorgna M., Sorrentino A. Tuning the structural and functional properties of HAVOH-based composites via ionic liquid tailoring of MWCNTs distribution Composites Science and Technology Volume 2073 (2021)
2. F. Vilarinho, M. Stanzione, G.G. **Buonocore**, L. Barbosa-Pereira, R. Sendon, M. F. Vaz, A. Sanches Silva. Green tea extract and nanocellulose embedded into polylactic acid film: Properties and efficiency on retarding the lipid oxidation of a model fatty food. Food Packaging and Shelf Life 27 (2021) 100609
3. Wang, Y.-L., Stanzione, M., Xia, H., **Buonocore**, G.G., Fortunati, E., Kaciulis, S., Lavorgna, M. Effect of mercapto-silanes on the functional properties of highly amorphous vinyl alcohol composites with reduced graphene oxide and cellulose nanocrystals, Composites Science and Technology, Volume 200, 10 November 2020, Article number 108458
4. Galzerano, B., Cabello, C.I., Muñoz, M., **Buonocore**, G.G., Aprea, P., Liguori, B., Verdolotti, L. Fabrication of green diatomite/chitosan-based hybrid foams with dye sorption capacity, Materials, Volume 13, Issue 17, September 2020, Article number 3760
5. Zhan, Y., Lago, E., Santillo, C., Del Río Castillo, A.E., Hao, S., **Buonocore**, G.G., Chen, Z., Xia, H., Lavorgna, M., Bonaccorso, F. An anisotropic layer-by-layer carbon nanotube/boron nitride/rubber composite and its application in electromagnetic shielding, Nanoscale, Volume 12, Issue 14, 14 April 2020, Pages 7782-7791
6. Stanzione, M., Oliviero, M., Cocca, M., Errico, M.E., Gentile, G., Avella, M., Lavorgna, M., **Buonocore**, G.G., Verdolotti, L. Tuning of polyurethane foam mechanical and thermal properties using ball-milled cellulose, Carbohydrate Polymers, Volume 231, 1 March 2020, 115772
7. Zhai, T., Verdolotti, L., Kacilius, S., Cerruti, P., Gentile, G., Xia, H., Stanzione, M., **Buonocore**, G.G., Lavorgna, M. High piezo-resistive performances of anisotropic composites realized by embedding rGO-based chitosan aerogels into open cell polyurethane foams, Nanoscale, Volume 11, Issue 18, 2019, Pages 8835-8844
8. Salzano de Luna, M., Ascione, C., Santillo, C., Verdolotti, L., Lavorgna, M., **Buonocore**, G.G., Castaldo, R., Filippone, G., Xia, H., Ambrosio, L. Optimization of dye adsorption capacity and mechanical strength of chitosan aerogels through crosslinking strategy and graphene oxide addition, Carbohydrate Polymers, Volume 211, 2019, Pages 195-203
9. Salzano de Luna, M., Wang, Y., Zhai, T., Verdolotti, L., **Buonocore**, G.G., Lavorgna, M., Xia, H. Nanocomposite polymeric materials with 3D graphene-based architectures: from design strategies to tailored properties and potential applications, Progress in Polymer Science Volume 89, 2019, Pages 213-249
10. Zhan, Y., Oliviero, M., Wang, J., Sorrentino, A., **Buonocore**, G.G., Sorrentino, L.,

Lavorgna, M., Xia, H., Iannace, S. Enhancing the EMI shielding of natural rubber-based supercritical CO 2 foams by exploiting their porous morphology and CNT segregated networks, Nanoscale, Volume 11, Issue 3, 21 January 2019, Pages 1011-1020

11. Sánchez, A.G., Prokhorov, E., Luna-Barcenas, G., Kovalenko, Y., Rivera-Muñoz, E.M., Raucci, M.G., **Buonocore**, G. Effect of chemical oxidation routes on the properties of chitosan-mwcnt nanocomposites, Current Nanoscience, Volume 15, Issue 6, 2019, Pages 618-625

12. Ronca, A., Rollo, G., Cerruti, P., Fei, G., Gan, X., **Buonocore**, G.G., Lavorgna, M., Xia, H., Silvestre, C., Ambrosio, L. Selective laser sintering fabricated thermoplastic polyurethane/graphene cellular structures with tailorable properties and high strain sensitivity. Applied Sciences, Volume 9, Issue 5, 2019.

13. Gomez Sanchez, A., Prokhorov, E., Luna-Barcenas, G., Mora-García, A.G., Kovalenko, Y., Rivera-Muñoz, E.M., Raucci, M., **Buonocore**, G. Chitosan-hydroxyapatite nanocomposites: Effect of interfacial layer on mechanical and dielectric properties, Materials Chemistry and Physics, Volume 217, 15 September 2018, Pages 151-159

14. Salzano de Luna, M., **Buonocore**, G.G., Giuliani, C., Messina, E. Di Carlo, G., Lavorgna, M., Ambrosio, L., Ingo, G.M. Long-Lasting Efficacy of Coatings for Bronze Artwork Conservation: The Key Role of Layered Double Hydroxide Nanocarriers in Protecting Corrosion Inhibitors from Photodegradation, Angewandte Chemie - International Edition, Volume 57, Issue 25, 18 June 2018, Pages 7380-7384

15. Vilarinho, F., Andrade, M., **Buonocore**, G.G., Stanzione, M., Vaz, M.F., Sanches Silva, A. Monitoring lipid oxidation in a processed meat product packaged with nanocomposite poly(lactic acid) film, European Polymer Journal, Volume 98, January 2018, Pages 362-367

16. Simon, D.A., Bischoff, E., **Buonocore**, G.G., Cerruti, P., Raucci, M.G., Xia, H., Schrekker, H.S., Lavorgna, M., Ambrosio, L., Mauler, R.S. Graphene-based masterbatch obtained via modified polyvinyl alcohol liquid-shear exfoliation and its application in enhanced polymer composites, Materials and Design Volume 134, 15 November 2017, Pages 103-110

17. Stanzione M., Gargiulo N., Caputo D., Liguori B., Cerruti P., Amendola E., Lavorgna M. and **Buonocore** G.G Peculiarities Of Vanillin Release From Amino-Functionalized Mesoporous Silica Embedded Into Biodegradable Composites European Polymer Journal 89C, pp88-100 (2017)

18. Zawada Donato, K.; Lavorgna, M.; Donato, R.; Raucci, M.G.; **Buonocore**, G.; Ambrosio, L.; Schrekker, H.; Mauler, R. High Amorphous Vinyl Alcohol-Silica Bionanocomposites: Tuning Interface Interactions with Ionic Liquids ACS Sustainable Chemistry & Engineering Volume 5, Issue 1, 3 January 2017, Pages 1094-1105 (2017)

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

Portici, 14/06/2022