Alessandro Nanni

| Date of birth | Nationality Italy

1. RESEARCH ACTIVITIES

Experience

From 01/10/2021 to today From 01/10/2020 to 30/09/2021 [Research grant (assegno di ricerca)] and From 27/03/2020 to 30/09/2020 [INSTM grant -Contratto di collaborazione con INSTM]	**Research fellow at Department of Chemical, Environmental and Material Engineering (DICAM), Bologna, Italy (IT)** Researching topics: ➔ Mechanical recycling, characterization and design of ski boots polymeric components. ➔ Valorization of the spent ground coffee capsules in new sustainable polymeric products ➔ Valorization of leather wastes in new sustainable polymer composites ➔ Valorization of industrial polymer-based systems (helmets, panels) ➔ LCA, cost analysis, development and simulation of processing plants for the selective recovery of recyclable polymers
From 01/02/2019 to 31/01/2020 From 15/01/2018 to 15/01/2019 From 14/07/2016 to 14/01/2018 (Research grant –Assegni di ricerca)	**Research fellow at Engineering Department "Enzo Ferrari", Modena, Italy (IT)** Research Group: "*MatPlast"* (www.matplast.unimore.it). Researching topics: ➔ Processing optimization (extrusion, injection molding, 3D-FDM printing) of bio-based polymers and/or biodegradable polymers. ➔ Formulations of biopolymers with different agro-industrial wastes used as fillers or additives. ➔ Micro-mechanics modelling of polymer viscoelastic properties. ➔ Extraction, characterization and testing of bio-stabilizers derived from wine wastes within different polymer matrices. ➔ Polymer characterization (DSC, TGA, MFI, Tensile test, DMA, Creep Test, SEM, FT-IR). ➔ Investigation of the polymer degradation and biodegradation and their stabilization. ➔ Scaling up of polymer processes (Super Pro Designer).
From 01/06/2018 to 05/10/2018	**Visiting researcher fellow at the Faculdade de Ciencias e Tecnologia (FCT), Universidade Nova de Lisboa (UNL), Lisbona (PT).** Research Group: "BioEng" (https://sites.fct.unl.pt/bioeng/) Researching topics: ➔ Microbial synthesis of Polyhydroxyalkanoates (PHAs) using wine stalks wastes as substrate.
From 01/09/2015 to 01/03/2016	**Visiting student at the University of Chemistry and Technology (UCT), Praga (CZ).** Research Group: "Mass transfer research group" (www.mass-transfer.cz) Researching topics: ➔ Investigation of the volumetric mass transfer coefficient kLa in mechanically stirred vessels with liquid-gas systems.

PUBBLICATIONS

N° ORCID → 0000-0003-4768-7236

- **Published papers: 11**
- **H index: 6**
- **10-index:4**
- **Total citations: 94**

(Updated to 14/01/2022)

- **A. Nanni**, M. Messori, (2018). *A comparative study of different winemaking by-products derived additives on oxidation stability, mechanical and thermal proprieties of polypropylene*, Polymer Degradation and Stability, 149:9-18 .
- **A. Nanni**, D. Battegazzore, A. Frache, M. Messori, (2019). *Thermal and UV aging of polypropylene stabilized by wine seeds wastes and their extracts*, Polymer Degradation and Stability, 165:49-59.
- **A. Nanni**, M.Messori, (2019). *Effect of the wine lees wastes as cost-advantage and natural fillers on the thermal and mechanical properties of poly(3-hydroxybutyrate-co-hydroxyhexanoate) (PHBH) and poly(3-hydroxybutyrate-co-hydroxyvalerate) (PHBV),* Journal of Applied Polymer Science, 48869.
- **A. Nanni**, M.Messori, (2020). *Thermo-mechanical properties and creep modelling of Wine Lees filled Polyamide 11 (PA11) and Polybutylene succinate (PBS) bio-composites,* Composite Science and Technology, 107974.
- **A. Nanni,** M.Messori**,** (2020). *Effect of the wine wastes on the thermal stability, mechanical properties, and biodegradation's rate of poly (3-hydroxybutyrate)*, Journal of Applied Polymer Science, 49713.
- **A. Nanni,** A. Ricci, A. Versari, M.Messori, (2020). *Wine derived additives as poly (butylene succinate)(PBS) natural stabilizers for different degradative environments*. Polymer Degradation and Stability, 182, 109381.
- **A. Nanni,** M. Parisi, M. Colonna, (2021). *Wine by-products as raw materials for the production of biopolymers and of natural reinforcing fillers: A critical review,* Polymers, 13(3), 381.
- M. Parisi, **A. Nanni**, M. Colonna, (2021). *Recycling of Chrome-Tanned Leather and Its Utilization as Polymeric Materials and in Polymer-Based Composites: A Review,* Polymers, 13(3), 429.
- **A. Nanni**, U. Cancelli, G. Montevecchi, F. Masino, M. Messori, A. Antonelli, (2021). *Functionalization and use of grape stalks as poly (butylene succinate)(PBS) reinforcing fillers,* Waste Management, 126, 538-548.
- **A. Nanni,** M. Parisi, M. Colonna, M. Messori (2021). Thermo-mechanical and morphological properties of polymer composites reinforced by natural fibers derived from wet blue leather wastes: a comparative study, Polymers, 13(11), 1837.
- **A. Nanni,** M. Colonna, M. Messori (2022). Fabrication and characterization of new eco-friendly composites obtained by the complete recycling of exhausted coffee capsules, Composites Science and Technology, 109358

CONFERENCES

23-26/06/2021	8th International conference on Sustainable Solid Waste Management, Thessalhoniki (GR)	Poster presentation
26-30/05/2019	35th Internetional conference of the Polymer Procesing Society, Cesme-Izmir (TR)	Oral and poster presentation
23-26/04/2019	Eufrofillers Polymerblends, Palermo (IT)	Oral presentation
10-12/09/2018	XIII Convegno Nazionale AIM, Catania (IT)	Oral presentation
16/04/2018	Seminario SOSTINNOVI "Sostenibilità e innovazione dalla vigna alla cantina", VinItaly, Verona (IT)	Oral presentation
5-7/07/2017	NanoMaterials and BioMaterials for the next Decade, MoDeSt Workshop, Pantelleria (IT)	Oral Presentation
15-16/02/2017	Milan Polymer Days, Milano (IT)	Poster Presentation

2. EDUCATION AND TRAINING

EDUCATION AND TRAINING

From 01/11/2016 to 01/11/2019 (XXXII Ciclo)

PhD school in Industrial and Environmental Engineering "Enzo Ferrari" (ING-IND/22)
Scuola di Dottorato in Ingegneria industrial e del territorio "Enzo Ferrari"
University of Modena and Reggio Emilia, Material Engineering Department "Enzo Ferrari", Modena, Italy.

Scientific Advisor: Prof. Massimo Messori

PhD thesis dissertation in 10-03-2020.

Thesis title: "A route to fully wine derived plastics: wine wastes as source, additives and fillers for different polymers and biopolymers"

From 10/2013 to 03/2016

Master's Degree in Chemical and Processing Engineering (LM-22)
University of Bologna, Italy.
Final marks: 110/110 (IT) → GPA: 4

From 10/2009 to 07/2013

Bachelor's Degree in Environmental and Sustainable Engineering (LT-8)
University of Florence, Italy.
Final marks: 102/110 (IT) → GPA: 4

3. TEACHING ACTIVITIES

TEACHING

From 10/12/2020 to 08/03/2021
From 02/12/2019 to 05/02/2020
From 07/01/2019 to 11/03/2019

Professor at CIS, Unindustria, Reggio Emilia, Italy (IT)
Istruzione e formazione tecnica superiore (IFTS)
Offerta formativa: "Tecnico di prodotto e di processo nel sistema delle lavorazioni delle materie plastiche"
Teaching classes:
- ➔ Polymer chemistry (25 hours)
- ➔ Polymer characterization (25 hours)
- ➔ Polymer processing (18 hours)

From 14/05/2021 to 04/06/2021
From 08/05/2020 to 22/05/2020
From 14/03/2019 to 18/05/2019

Assistant Professor for the II level master in "polymer products and materials for the biomedical sector" of the University of Bologna, Italy (IT)) (ING/IND 22)
Laboratory lessons on twin-screw extruder, injection molding machine and polymer characterization (12 hours). Biopolymers and mechanical recycling classes.

From Sept.2021 to dec.2021 (variable numbers of hours for year)	**Assistant (Laboratory and class lessons) at the University of Bologna, of the following university courses taught by Prof. Martino Colonna:** ➔ "Biopolymers Chemistry", 6 CFU, Environmental Engineering, Master classes (CHIM/07)
From 2016/2017 to 2019/2020 (variable numbers of hours for year)	**Assistant (Laboratory and class lessons) at the University of Modena and Reggio Emilia, of the following university courses taught by Prof. Massimo Messori:** ➔ "Science and Technology of plastic materials", 9 CFU, Material Engineering, Master classes (ING/IND 22) ➔ "Plastics Materials", 6 CFU, Mechanical Engineering, Bachelor classes (ING/IND 22)
From 2016/2017 to 2020/2021	**Correlator of around 20 universitary thesis (both master and bachelor classes)**

4. "THIRD MISSION"

"THIRD MISSION"

From 30/10/2020 to today	**Founder and Chief Executive Officer of the innovative Start Up AgroMateriae s.r.l.s.** www.linkedin.com/company/agromateriae/
Patent Granted	Patent n. 102019000022884 filed on 03/12/2019 and granted on 15/11/2021 *"Materiale composito formato da un biofiller e da una matrice termoplastica e procedimento per realizzare un articolo con un tale materiale composito"* Owner(s): University of Modena and Reggio Emilia (100%) Inventors: **A. Nanni** (50%) and M. Messori (50%)
Patent pending 1	Patent n. 102021000010880 filed on 29/04/2021 *"Metodo per la preparazione di un materiale polimerico riciclato da capsule esauste di caffè"* Owner(s): Caffè Toscano Srl (100%) Inventors: **A. Nanni** (50%) and M. Colonna (50%)
Patent pending 2	Patent n. 1020211000013448 filed on 24/05/2021 *"Metodo e impianto per il riciclo di oggetti realizzati con materiali polimerici"* Owner(s): University of Bologna (100%) Inventors: M. Colonna (50%), **A. Nanni** (25%), F. Biagi (12.5%) and M. Martini (12.5%)

5. GRANTS

GRANTS

➔ PhD Grant at the conference "Eurofillers Polymerblends", Palermo (IT) in 23-26/04/2019, for the oral presentation titled "Effect of wine wastes derived additives on short and long-term polypropylene stabilization".

➔ AgroMateriae wins the 2020 edition of the PNI (Premio Nazionale Innovazione), the most ambitious business plan competition for start-ups in Italy. *https://www.millionaire.it/la-startup-agromateriae-vince-il-premio-nazionale-per-linnovazione-2020/*

6. SKILLS

PERSONAL SKILLS

Languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1/C2	C1/C2	C1/C2	C1/C2	C1/C2
French	A1/A2	B1/B2	A1/A2	A1/A2	A1/A2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user

Job-related skills

- Excellent job-related skills in the field of the polymer characterization and processing. In particular, great theoretical and empirical knowledge of twin-extrusion and injection molding processes, 3D FDM printer, Internal Mixer, Melt Flow Index, Different Scansion Calorimetry, Thermogravimetric Analysis, Dynamic Mechanical Analysis, Tensile test, creep and recovery tests, stress relaxation tests, FT-IR, SEM, XRD, Lab procedures, aging, biodegradation and stabilization tests,

Digital skills

- Excellent command of office suite (word processor, excel, presentation software)
- Knowledge of the following engineering software:

| SuperPro Design (G/E) | Matlab (G) | AutoCad (G) | Phast (S) | Aloha (E)| Q-Gis (G/E) | Arc-Gis (G)| trnsys (S/G)| Hec-Ras (S/G)| C++ (S)| Java (S)|

Other skills

Guitar Player

Driving licence

B

Bologna, 23/02/2022