Biography

Laura is currently a PhD student in the Mechanics of Biological and Bioinspired Materials Laboratory, Department of Aerospace and Mechanical Engineering, University of Liege (Belgium).She holds a Master Degree in Biomedical Engineering from Politecnico di Milano obtained in October 2014 (grade 110 summa cum laude/110). Laura's Master Thesis focused on the development of an implantable and biodegradable device for pain treatment in abdominal surgery.

In her PhD, Laura has been working on developing novel bioinspired architectured materials by additive manufacturing, with the aim of applying smart strategies present in biological materials for reinforcement and resistance enhancement to man-made structures. For that, she has been collaborating with companies and academic partners including Ansys Benelux, the Department of Chemistry, Material and Chemical Engineering "Giulio Natta" at Politecnico di Milano (Italy) and the Department of Biomaterials at the Max Planck Institute of Colloids and Interfaces (Potsdam, Germany).

Skills

Computational skills: CAD systems (SolidWorks, Catia, IronCad) and solvers (Ansys Workbench, Ansys mechanical APDL);

Experimental skills: competence in the following laboratory instruments: rheometer, UV spectrophotometer, dynamic mechanic analyzer, multimaterial polymer printer, electromechanical uniaxial load frame.

Scientific Interests

Bio-inspired materials, auxetic materials, composite materials, additive manufacturing, natural polymers.

Peer-reviwer Publications

Zorzetto L., Brambilla P., Marcello E., Bloise N., Cobianchi L., Peloso A., Allegri M., Visai L., Petrini P. (2016). From micro- to nanostructured implantable device for local anesthetic delivery. International Journal of Nanomedicine, 11, 1–15. https://doi.org/10.2147/IJN.S99028

Zorzetto L., & Ruffoni D. (2017). Re-entrant Inclusions in Cellular Solids: From Defects to Reinforcements. Composite Structures, 176, 195–204. https://doi.org/10.1016/j.compstruct.2017.05.039

Pacheco D. P., Zorzetto L., & Petrini P. (2017). 4 - Soft tissue application of biocomposites A2 - Ambrosio, Luigi BT - Biomedical Composites (Second Edition). In Woodhead Publishing Series in Biomaterials (pp. 59–82). https://doi.org/https://doi.org/10.1016/B978-0-08-100752-5.00004-4

Conferences

Zorzetto L., Ruffoni D. (20-24 Septembre 2015). *Remarkable stiffness enhancement in multilayered honeycombs obtained through periodic variations in Poisson's ratio*. Oral presentation at 14th European Congress and Exhibition on Advanced Materials and Processes - EUROMAT 2015, Warsaw (Poland)

Zorzetto L., Thomassin J.M., Jérôme C., Ruffoni D. (31 January 2016 – 5 February 2016). *Bioinspired helicoidal composites with tunable mechanical behavior by 3-dimensional multi-material printing.* Poster presented at Multifunctional Materials & Structures 2016 Gordon Research Conference, Ventura, CA (USA)

Zorzetto L., Ruffoni D. (7-9 Septembre 2016). *Auxetic inclusions in cellular solids allow tailoring Poisson's ratio and enhancing stiffness*. Oral presentation at 15th European Mechanics of Materials Conference. –

EMMC15, Brussels (Belgium)

Zorzetto L., Ruffoni D. (17-22 Septembre 2017). *Mimicking helicoidal biological materials to improve strength of synthetic composites*. Oral presentation at 15th European Congress and Exhibition on Advanced Materials and Processes. – EUROMAT 2017, Thessaloniki (Greece)

Zorzetto L., Pacheco D. P., Andena L., Petrini P. (17-22 Septembre 2017). *A frugal synthesis method to develop tough and stretchable hydrogels.* Oral presentation at 15th European Congress and Exhibition on Advanced Materials and Processes. – EUROMAT 2017, Thessaloniki (Greece)

Zorzetto L., Ruffoni D. (19-22 March 2018). *Investigating the multilayer fiber-reinforced structure of the wood cell using computer simulations and additive manufacturing*. The poster will be presented at 4th International School and conference on Biological Material Science. – Euro Bio-Inspired Materials 2018 –, Potsdam (Germany)