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## Synopsis of research activities and achievements since 2019

- Authored 40 peer-reviewed publications (out of 85 in total), 73 conference abstracts (out of 180); presented 25 invited lectures in international conferences and workshops (out of 60)
- Awarded International Fellow of Tissue Engineering and Regenerative Medicine (FTERM) in 2023; The honorary status of FTERM recognizes individuals that have made outstanding contributions to the field of tissue engineering and regenerative medicine with outputs of clear professional excellence.
- Elected European Orthopaedic Research Society (EORS) ambassador for Greece in 2023
- Awarded Fellow, Biomaterials Science and Engineering (FBSE) by the International Union of Societies for Biomaterials Science and Engineering (IUS-BSE) in 2020; The honorary status of FBSE recognizes excellence in professional standing and high achievements in the field of biomaterials science and engineering
- Supervised 4 PhD students, 3 Master students, and 5 undergraduate students; Co-advised 2 PhD students and 5 Master students (member of their co-advisory committees and co-author in publications)
- Served as Program Chair of the Tissue Engineering and Regenerative Medicine International Society (TERMIS) EU Conference, 27-31 May 2019 in Rhodes, number of participants: 1360
- Served as
  - Member of the International Advisory Board of the 12<sup>th</sup> World Biomaterials Congress, Daegu, Korea (May 26-31, 2024)
  - Member of the International Advisory Board of the 33<sup>rd</sup> Annual Conference of the European Society of Biomaterials in Davos, Switzerland (September 4 – 8, 2023)
  - Member of the Scientific Advisory Committee of the 6<sup>th</sup> conference of the Hellenic Society for Gene Therapy and Regenerative Medicine, 26-29 May 2023, Athens
  - Member of the International Scientific Advisory Committee of the conference TERMIS Asia-Pacific, Jeju, Korea, 5-8 October 2022
  - Member of the Organizing Committee of the 36<sup>th</sup> Panhellenic conference on Solid-State Physics and Materials Science, Heraklion, 26-28 September 2022
  - Member of the International Advisory Board of the 32<sup>nd</sup> Annual Conference of the European Society of Biomaterials in 2022 in Bordeaux, 4-8 September 2022
  - Member of the Organizing Committee of the Regenerative Medicine Day/Round Table, School of Medicine, University of Crete, July 27, 2022
  - Member of the International Scientific Advisory Committee of the conference TERMIS-EU, Krakow, Poland, 28 June-1 July 2022

- Member of the International Scientific Advisory board of the TERMIS World Congress, 15-19 Nov. 2021, Maastricht (virtual)
- Member of the International Advisory Board of the 31<sup>st</sup> Conference of the European Society for Biomaterials (ESB), 5-9 September 2021 in Porto (virtual)
- Member of the International Advisory Board of the 11<sup>th</sup> World Biomaterials Congress (WBC 2020), 11-15 December 2020 in Glasgow (virtual)
- Member of the International Advisory Board of the 30<sup>th</sup> Conference of the European Society for Biomaterials (ESB) in 2019 in Dresden
- Member of the Scientific Committee of the 5<sup>th</sup> Congress of the Hellenic society of gene therapy and regenerative medicine in 2019 in Athens
- Received competitive funding from the Hellenic Foundation for Research and Innovation (ELIDEK 1<sup>st</sup> call for Faculty members) (2020-2023), the European Commission (2019-2023), Synergy FORTH grant (2023-2025), University of Crete Special Research Account (2023)
- Nomination Committee Member of the Tissue Engineering and Regenerative Medicine International Society (TERMIS)-EU Chapter since January 2022
- Elected European Orthopaedic Research Society (EORS) ambassador for Greece in September 2023
- Vice President of the Executive Board of the Hellenic Society for Biomaterials (2023-2025)
- First 'Senior Robert Frank Award - Basic Science' in the International Association for Dental Research (IADR) conference, Continental European Division (CED), Brussels, September 16-18, 2022  
'Dentin regeneration by DMP-1/BMP-2-plasmid-modified nanoparticle-treated DPSCs on human dentin scaffolds' by Machla F, Sokolova V, Platania V, Prymak O, Kostka K, Kruse B, Pasadaki S, Alpantaki K, Vidaki M, Chatzinikolaïdou M, Epple M, Bakopoulou A

## Areas of research interests

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- Tissue Engineering (bone, cartilage, dental, cardiovascular, skin)
- Investigation of biomaterials structure/properties effect on biological responses: *In vitro* and *in vivo* biocompatibility evaluation of biomaterials, 3D scaffolds and nanoparticles
- Investigation of the osteoinductive potential of implantable biomaterials and drugs
- Development of osteoinductive and osteoconductive biomaterials and scaffolds
- Biomechanical characterization of tissues and scaffolds
- 3D printing, bioprinting, and electrospinning as processing technologies for scaffold fabrication
- Functionalization of biomaterials with growth factors
- Adsorption and desorption studies of proteins and growth factors on biomaterials surfaces

## Education

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| 2004 | PhD (Dr. rer. nat.) in Institute of Physiological Chemistry, Faculty of Medicine, University of Duisburg-Essen, Germany, Dissertation title: 'Immobilization and release kinetics of recombinant human bone morphogenetic protein 2 (rhBMP-2) from metal implant surfaces in biologically active form' under the supervision of Prof. Dr. Herbert P. Jennissen |
| 1997 | Degree in Chemistry (Dipl.-Chem.), University of Essen, Germany<br>Diploma thesis title: 'Synthesis and modification of the mesoporous phase MCM-41' under the supervision of Prof. Dr. Günter Schön                                                                                                                                                           |

## Employment

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|-----------------|----------------------------------------------------------------------------------------------------|
| Since Feb. 2019 | Associate Professor<br>Department of Materials Science and Technology, University of Crete, Greece |
| 2010 - 2018     | Assistant Professor (tenured in 2014)                                                              |

2007 - 2010	Department of Materials Science and Technology, University of Crete, Greece Visiting Professor
2006 - 2008	Department of Materials Science and Technology, University of Crete, Greece Research Fellow of the European Commission competitiveness program 'ENTER' in the field of biomolecule-interface interaction for long term drug delivery of biocompatible bone implants by means of biosensors Institute of Molecular Biology and Biotechnology (IMBB), Foundation for Research and Technology Hellas (FORTH), Greece
2004 - 2006	Postdoctoral Research Associate in the field of bioactive bone implants and interface biochemistry Institute of Physiological Chemistry, Faculty of Medicine, University of Essen, Germany
2003 - 2004	Research Associate in collaborative projects between the University of Essen and industrial partners in the field of development of bioactive dental and bone implants Institute of Physiological Chemistry, Faculty of Medicine, University of Essen, Germany

### Selected recent publications in peer-review journals (out of 85)

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1. Konstantinos Loukelis, Danai Papadogianni, Maria Chatzinikolaidou (2023) Crosslinker-free gellan gum/poly(vinyl alcohol) electrospun scaffolds support bone regeneration, *Carbohydrate Polymer Technologies and Applications*, *accepted*
2. Georgia-Ioanna Kontogianni, Catarina Coelho, Paulo Quadros, Chiara Vitale Brovarone, Maria Chatzinikolaidou (2023) Osteogenic potential of strontium-substituted nano-hydroxyapatite for bone regeneration, *Nanomaterials*, 13, 1881. <https://doi.org/10.3390/nano13121881>
3. Georgia-Ioanna Kontogianni, Konstantinos Loukelis, Amedeo Franco Bonatti, Elisa Batoni, Carmelo De Maria, Raasti Naseem, Giovanni Vozzi, Kenneth Dalgarno, Nicholas Dunne, Chiara Vitale-Brovarone, Maria Chatzinikolaidou (2023) Effect of Uniaxial Compression Frequency on Osteogenic Cell Responses in Dynamic 3D Cultures, *Bioengineering*, 10, 532. <https://doi.org/10.3390/bioengineering10050532>
4. Konstantinos Loukelis, Foteini Machla, Athina Bakopoulou, Maria Chatzinikolaidou (2023) Kappa-carrageenan/chitosan/gelatin scaffolds provide a biomimetic microenvironment for dentin-pulp regeneration, *Int. J. Mol. Sci.* 24, 6465, <https://doi.org/10.3390/ijms24076465>
5. Subrata Mondal, David B. MacManus, Amedeo F. Bonatti, Carmelo De Maria, Kenny Dalgarno, Maria Chatzinikolaidou, Aurora De Acutis, Giovanni Vozzi, Chiara Vitale-Brovarone, Sonia L. Fiorilli, Nicholas Dunne (2023) A computational analysis of a novel therapeutic approach combining tissue engineering scaffolds and fracture fixation devices for the treatment of osteoporotic fractures: Effects of physiological loading, interface conditions, and fracture fixation materials, *Medical Engineering & Physics*, 103967
6. Georgia-Ioanna Kontogianni, Amedeo Franco Bonatti, Carmelo De Maria, Raasti Naseem, Catarina Coelho, Giovanni Vozzi, Kenneth Dalgarno, Paulo Quadros, Chiara Vitale-Brovarone, Maria Chatzinikolaidou (2023) Promotion of in vitro osteogenic activity by melt extrusion-based PLLA/PCL/PHBV scaffolds enriched with nano-hydroxyapatite and strontium substituted nano-hydroxyapatite, *Polymers*, 15, 1052, <https://doi.org/10.3390/polym15041052>
7. Priyanka Sahariah, Georgia-Ioanna Kontogianni, Effie Scoulica, Olafur E. Sigurjonsson, Maria Chatzinikolaidou (2023) Structure-Activity relationship for Antibacterial Chitosan carrying Cationic and Hydrophobic moieties, *Carbohydrate Polymers* 312, 120796, <https://doi.org/10.1016/j.carbpol.2023.120796>
8. Elena Pulidori, Simone Micalizzi, Nikos Koutsomarkos, Emilia Bramanti, Maria Rosaria Tinè, Giovanni Vozzi, Carmelo De Maria, Maria Chatzinikolaidou, Celia Duce (2023) Analysis of gelatin secondary structure in gelatin/keratin-based biomaterials, *Journal of Molecular Structure* 1279, 134984, <https://doi.org/10.1016/j.molstruc.2023.134984>
9. Machla F, Sokolova V, Platania V, Prymak O, Kostka K, Kruse B, Pasadaki S, Agrymakis M, Alpantaki K, Vidaki M, Chatzinikolaidou M, Epple M, Bakopoulou A (2023) Dentin-pulp complex tissue engineering by pDMP1/pBMP2-conjugated calcium phosphate nanoparticles on human treated dentin scaffolds, *Acta Biomaterialia*, 159, 156-172, <https://doi.org/10.1016/j.actbio.2023.01.044>

10. Konstantinos Loukelis, Zina A. Helal, Antonios G. Mikos, Maria Chatzinikolaidou (2023) Nanocomposite bioprinting for tissue engineering applications, *Gels*, 9(2), 103, DOI: 10.3390/gels9020103
11. Katerina Petropoulou, Varvara Platania, Maria Chatzinikolaidou, Anna Mitraki (2022) A doubly Fmoc-protected aspartic acid self-assembles into hydrogels suitable for bone tissue engineering, *Materials*, 15(24), 8928, <https://doi.org/10.3390/ma15248928>
12. Felix J. Geissel, Varvara Platania, Niccoló de Berardinis, Vitalii Shtender, Charlotte Skjöldebrand, Georgios N. Belibasakis, Cecilia Persson, Gry Hulsart-Billström, Maria Chatzinikolaidou, Georgios A. Sotiriou (2022) Nanostructured Ag-Bioglass Implant Coatings with Antibacterial and Osteogenic Activity, *Advanced Materials Interfaces* 2201980, DOI: 10.1002/admi.202201980
13. Oscar Francesconi, Francisco Corzana, Georgia-Ioanna Kontogianni, Giorgio Pesciullesi, Roberta Gualdani, Claudiu T. Supuran, Andrea Angeli, Rafaela-Maria Kavasi, Maria Chatzinikolaidou, Cristina Nativi (2022) Lipoyl-Based Antagonists of Transient Receptor Potential Cation A (TRPA1) Downregulate Osteosarcoma Cell Migration and Expression of Pro-Inflammatory Cytokines, *ACS Pharmacology and Translational Science*, 5(11), 1119-1127, DOI: 10.1021/acspsci.2c00114
14. Konstantinos Loukelis, Danai Papadogianni, Maria Chatzinikolaidou (2022) Kappa-carrageenan/chitosan/gelatin scaffolds enriched with potassium chloride for bone tissue engineering, *International Journal of Biological Macromolecules*, 209, 1720-1730, DOI: <https://doi.org/10.1016/j.ijbiomac.2022.04.129>
15. Foteini Machla, Ioannis Angelopoulos, Matthias Epple, Maria Chatzinikolaidou, Athina Bakopoulou (2022) Biomolecule-Mediated Therapeutics of the Dentin-Pulp Complex: A systematic review, *Biomolecules*, 12, 285, <https://doi.org/10.3390/biom12020285>
16. Felix J. Geissel, Varvara Platania, Alexander Gogos, Inge K. Herrmann, Georgios N. Belibasakis, Maria Chatzinikolaidou, Georgios A. Sotiriou (2022) Antibiofilm activity of nanosilver coatings against *Staphylococcus aureus*, *Journal of Colloid and Interface Science* 608, 3141-3150, <https://doi.org/10.1016/j.jcis.2021.11.038>
17. Varvara Platania, Alexandra Kaldeli Kerou, Theodora Karamanidou, Maria Kouki, Alexandros Tsouknidas, Maria Chatzinikolaidou (2022) Antibacterial effect of colloidal suspensions varying in silver nanoparticles and ions concentrations, *Nanomaterials* 12(1), 31, <https://doi.org/10.3390/nano12010031>
18. Maria Fermani, Varvara Platania, Rafaela-Maria Kavasi, Christina Karavasili, Paola Zgouro, Dimitrios Fatouros, Maria Chatzinikolaidou, Nikolaos Bouropoulos (2021) 3D printed scaffolds from alginate/methyl cellulose/trimethyl chitosan/silicate glasses for bone tissue engineering, *Applied Sciences* 11, 8677, <https://doi.org/10.3390/app11188677>
19. Varvara Platania, Timothy E.L. Douglas, Mikhajlo Zubko, Danny Ward, Krzysztof Pietryga, Maria Chatzinikolaidou (2021) Phloroglucinol-enhanced whey protein isolate hydrogels with antimicrobial activity for tissue engineering, *Materials Science & Engineering C* 129, 112412, <https://doi.org/10.1016/j.msec.2021.112412>
20. Theodore Manouras, Varvara Platania, Anthie Georgopoulou, Maria Chatzinikolaidou, Maria Vamvakaki (2021), Responsive Quaternized PDMAEMA Copolymers with Antimicrobial Action, *Polymers*, 13, 3051, <https://doi.org/10.3390/polym13183051>
21. Stella Mountaki, Maria Kaliva, Konstantinos Loukelis, Maria Chatzinikolaidou, Maria Vamvakaki (2021), Responsive polyesters with alkene and carboxylic acid side-groups for tissue engineering applications, *Polymers*, <https://doi.org/10.3390/polym13101636>
22. Kavasi R-M, Coelho C, Platania V, Quadros P, Chatzinikolaidou M (2021) *In vitro* biocompatibility assessment of nano-hydroxyapatite, *Nanomaterials* 11, 1152, <https://doi.org/10.3390/nano11051152>
23. Hadjicharalambous C, Alpantaki K, Chatzinikolaidou M. (2021) Effects of NSAIDs on pre-osteoblasts viability and osteogenic differentiation, *Experimental and Therapeutic Medicine* 22, 740, DOI: 10.3892/etm.2021.10172
24. Lavikainen J, Dauletbekova M, Toleutay G, Kaliva M, Chatzinikolaidou M, Kudaibergenov SE, Tenkovtsev A, Khutoryanskiy VV, Vamvakaki M, Aseyev V. (2021) Poly(2-ethyl-2-oxazoline) grafted gellan gum for potential application in transmucosal drug delivery, *Polym Adv Technol.* 32, 2770–2780, DOI: 10.1002/pat.5298
25. Hadjichristou C, Papachristou E, Vereroudakis E, Chatzinikolaidou M, About I, Koidis P, Bakopoulou A (2021) Biocompatibility assessment of resin-based cements on vascularized dentin/pulp tissue-engineered analogues, *Dental Materials* 37, 5, 914-927, DOI: 10.1016/j.dental.2021.02.019

26. Prymak O, Vagiaki L, Buyakov A, Kulkov S, Epple M, Chatzinikolaidou M (2021) Porous zirconia/magnesia ceramics support osteogenic activity in vitro, *Materials* 14, 4, 1049, 1-18, doi.org/10.3390/ma14041049
27. Vagropoulou G, Trentsiou M, Georgopoulou A, Papachristou E, Prymak O, Kritis A, Epple M, Chatzinikolaidou M, Bakopoulou A, Koidis P (2021) Hybrid chitosan/gelatin/nanohydroxyapatite scaffolds promote odontogenic differentiation of dental pulp stem cells and *in vitro* biomineralization, *Dental Materials* 37, 1, 23-36, <https://doi.org/10.1016/j.dental.2020.09.021>
28. Papadogiannis F, Batsali A, Klontzas M, Karabela M, Georgopoulou A, Mantalaris A, Zafeiropoulos N, Chatzinikolaidou M, Pontikoglou C (2020) Osteogenic differentiation of bone marrow mesenchymal stem cells on chitosan/gelatin scaffolds: Gene expression profile and mechanical analysis, *Biomedical Materials* 15, 6, 064101, <https://doi.org/10.1088/1748-605X/aba325>

### Book chapters

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1. Kaliva M, Kavasi R-M, Chatzinikolaidou M, Vamvakaki M. (2021) 'Polysaccharides and Applications in Regenerative Medicine' in *Comprehensive Glycoscience* 2nd edition, Elsevier, volume 4, pages 1-33, <https://doi.org/10.1016/B978-0-12-819475-1.00037-7>
2. Chatzinikolaidou M. (2017) Scientific advisor of the Greek Edition (chapters 8, 9 and 10) of the book 'Biomaterials: The Intersection of Biology and Materials Science' by J. S. Temenoff and A. G. Mikos, Utopia Publishing
3. Kaliva M., Chatzinikolaidou M., Vamvakaki M. (2017) Applications of Multifunctional Smart Materials for Tissue Engineering, Royal Society of Chemistry, DOI:10.1039/9781788010542-00001
4. Buescher, R., Jennissen, H.P., Chatzinikolaidou, M., Fischer, A. (2001) Characterization of Wet-Chemically Nanostructured Stainless Steel Surfaces. *Mat. Res. Soc. Symp. Proc.* Vol. 676, pp.Y3.14.1-Y3.14.6. In: *Synthesis, Functional Properties and Application of Nanostructures.* (H.W Hahn, R. Tannenbaum, D.L Feldheim, C.P Kubiak, R.W Siegel, eds). MRS (Materials Research Society), Publications Warrendale, Pennsylvania, USA

### Patents

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1. Jennissen, H. P., M., Chatzinikolaidou, M., (2008) "Method for producing a product having a polymer matrix, implants made thereof and use thereof" Patent WO2008074845 A2 (2008), European Patent EP2104520 (2010), United States Patent and Trademark Office Granted Patent US8900633 (2014)
2. Jennissen, H. P.; Chatzinikolaidou, M.; Rumpf, H. (MorphoPlant GmbH) (2008) "Bioactive implant and method of use" United States Patent and Trademark Office Pre-Granted Publication US20080260799, United States Patent and Trademark Office Granted Patent (2015) US9095640
3. Jennissen, H. P., Laub, M., Chatzinikolaidou, M., Zurlinden, K. (2008) "Process for the immobilization of proteins on an implant" European Patent Application EP1880739
4. Jennissen, H. P., Chatzinikolaidou, M., Rumpf, H. M. (2002) 'Method for Producing Bioactive Implant Surfaces' Patent Cooperation Treaty Application WO0209788, European Patent Application (2003) EP1305058, United States Patent and Trademark Office Pre-Granted Publication US20040109937

### Recent invited talks in international conferences and workshops (selected recent out of 60)

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1. M. Chatzinikolaidou (2024) 5<sup>th</sup> International Conference on Biomedical Polymers & Polymeric Biomaterials (ICBPPB), 7-9 July 2021 in Donghua University, Shanghai, China
2. M. Chatzinikolaidou (2023), 3D bioprinted hydrogels for tissue engineering and regenerative medicine, 14<sup>th</sup> Hellenic Polymer Society International Conference, 22-25 November 2023, Thessaloniki, Greece
3. M. Chatzinikolaidou (2023), Regeneration of bone using advanced biomaterials and 3D printing technologies, 27<sup>th</sup> Annual Conference on Biomedical Science and Technology Biomed2023-TR, 20-22 October 2023, Izmir, Turkey

4. M. Chatzinikolaidou (2023), Biofunctionalized 3D bioprinted vascular-like structures: an advanced approach to promote endothelial tissue regeneration, 31<sup>st</sup> Annual Conference of the European Orthopedic Research Society (EORS), 27-29 September 2023, Porto, Portugal
5. M. Chatzinikolaidou (2023), Biomaterials in Regenerative Medicine, 1<sup>st</sup> Panhellenic conference of physical sciences in health, 22-23 September 2023, Athens, Greece
6. M. Chatzinikolaidou (2023) 3D dynamic cultures in bone tissue engineering: mimicking the in vivo situation, 20<sup>th</sup> International Conference on Nanoscience & Nanotechnologies NN21, 4-7 July 2023, Thessaloniki, Greece
7. M. Chatzinikolaidou (2023), Functional composite scaffolds with inorganic osteoinductive compounds for bone tissue regeneration, 16<sup>th</sup> International Symposium on Applied Bioinorganic Chemistry (16-ISABC), 11-14 June 2023, Ioannina, Greece
8. M. Chatzinikolaidou (2023), Advances in bone tissue engineering: dynamic co-culture systems, BIOMAT Sheffield symposium, 27 March 2023, Sheffield, UK
9. M. Chatzinikolaidou (2022), Advances in biomaterials, cells and technologies in bone tissue engineering, 12<sup>th</sup> Conference of the Hellenic Society for Biomaterials, 15-17 December 2022, Athens, Greece
10. M. Chatzinikolaidou (2022) Biomaterials for bone regeneration, Venizelion Hospital Seminars in the Clinic for Orthopedics and Trauma, 5 October 2022, Heraklion
11. M. Chatzinikolaidou (2022) Biomaterial matrices in bone tissue engineering, Plenary lecture at the Annual Meeting of the German Society for Biomaterials (DGBM), 15–17 September 2022, Essen, Germany
12. M. Chatzinikolaidou (2022), Fellows in Biomaterials Science and Engineering (FBSE) Debate: "The house believes that in the next decade it will be possible to print fully functional tissues and organs - An opposition", 32<sup>nd</sup> Conference of the European Society for Biomaterials ESB 2022, 4-8 September 2022, Bordeaux, France
13. M. Chatzinikolaidou (2022) Polymeric scaffolds under dynamic conditions promote osteogenic differentiation of pre-osteoblasts, 7<sup>th</sup> International Conference on Tissue Engineering in conjunction with the 5<sup>th</sup> Int'l Conference on Regenerative Biomedical Materials, 26-31 May 2022, Ioannina, Greece
14. M. Chatzinikolaidou (2021) Advances in biomaterials for bone tissue engineering, 35<sup>th</sup> Panhellenic Conference on Solid State Physics and Materials Science (26-29 September 2021, Athens, Greece)
15. M. Chatzinikolaidou (2021) Multifunctional biomaterials for bone regeneration: new trends in manufacturing and validation, 29<sup>th</sup> Annual Meeting of the European Orthopaedic Research Society (EORS) (15-17 September 2021, Rome, Italy)
16. M. Chatzinikolaidou (2019) Advances in tissue engineered spine regeneration (International joint Congress of the 13<sup>th</sup> Annual conference of the Hellenic Spine Society and the Serbian Spine Society, 31 Oct-3 Nov. 2019, Ioannina, Greece)
17. M. Chatzinikolaidou (2019) Designing multifunctional scaffolds with osteoinductive properties for spine repair (BIOSPINE 7<sup>th</sup> International Congress on Biotechnologies for Spinal Surgery, 3-5 April 2019, Rome, Italy)

#### **Selected recent presentations in international conferences (180 in total)**

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1. Nikoleta Natalia Tavernaraki, Varvara Platania, Maria Chatzinikolaidou (2023) Uniaxial compression of piezoelectric scaffolds promotes osteogenic differentiation of pre-osteoblastic cells, 31<sup>st</sup> Annual Conference of the European Orthopedic Research Society (EORS) 27-29 September 2023, Porto, Portugal
2. Varvara Platania, Nikoleta Natalia Tavernaraki, Ioanna Gontika, Eirini Fragiadaki, Nikoletta Triantopoulou, Helen A Papadaki, Kalliopi Alpantaki, Marina Vidaki, Maria Chatzinikolaidou (2023) Biofunctionalized 3D Bioprinted Vascular-Like Structures: An Advanced Approach to Promote Endothelial Tissue Regeneration, 31<sup>st</sup> Annual Conference of the European Orthopedic Research Society (EORS) 27-29 September 2023, Porto, Portugal

3. Nikoleta Natalia Tavernaraki, Varvara Platania, Maria Chatzinikolaidou (2023) Piezoelectric scaffolds enhance osteogenesis, 20<sup>th</sup> International Conference on Nanosciences and Nanotechnologies, 4-7 July 2023, Thessaloniki, Greece
4. Varvara Platania, Nikoleta Natalia Tavernaraki, Maria Chatzinikolaidou (2023) Bioprinted composite tubes for vascular tissue engineering, 16<sup>th</sup> International Symposium on Applied Bioinorganic Chemistry (16-ISABC), 11-14 June 2023, Ioannina, Greece
5. Varvara Platania, Nikoleta Natalia Tavernaraki, Ioanna Gontika, Eirini Fragiadaki, Nikoletta Triantopoulou, Helen A Papadaki, Kalliopi Alpantaki, Marina Vidaki, Maria Chatzinikolaidou (2023) Biofabrication of 3D bioprinted vascular-like structures functionalized with platelet-rich plasma for endothelial tissue regeneration, 6<sup>th</sup> conference of the Hellenic Society for Gene Therapy and Regenerative Medicine, 26-29 May 2023, Athens
6. Nikoleta Natalia Tavernaraki, Varvara Platania, Maria Chatzinikolaidou (2023), Piezoelectric scaffolds enhance the osteogenic differentiation of pre-osteoblastic cells by applying uniaxial compression, 33<sup>rd</sup> Conference of the European Society for Biomaterials ESB 2023, 4-8 September 2023, Davos, Switzerland
7. Konstantinos Loukelis, Georgia-Ioanna Kontogianni, Maria Chatzinikolaidou (2023) 3D bioprinted constructs comprising gellan gum/PVA enriched with nanohydroxyapatite promote bone tissue regeneration, 33<sup>rd</sup> Conference of the European Society for Biomaterials ESB 2023, 4-8 September 2023, Davos, Switzerland
8. Konstantinos Loukelis, Varvara Platania, Nikos Koutsomarkos, Maria Chatzinikolaidou (2023), 3D bioprinted gellan gum/kappa-carrageenan scaffolds for enhanced angiogenesis, 33<sup>rd</sup> Conference of the European Society for Biomaterials ESB 2023, 4-8 September 2023, Davos, Switzerland
9. Varvara Platania, Nikoleta Natalia Tavernaraki, Ioanna Gontika, Eirini Fragiadaki, Helen A Papadaki, Kalliopi Alpantaki, Marina Vidaki, Maria Chatzinikolaidou (2023), 3D bioprinted tubular constructs functionalized with platelet-rich plasma promote endothelial tissue regeneration, 33<sup>rd</sup> Conference of the European Society for Biomaterials ESB 2023, 4-8 September 2023, Davos, Switzerland
10. Georgia-Ioanna Kontogianni, Konstantinos Loukelis, Amedeo Franco Bonatti, Elisa Batoni, Carmelo De Maria, Raasti Naseem, Giovanni Vozzi, Kenneth Dalgarno, Nicholas Dunne, Chiara Vitale-Brovarone, Maria Chatzinikolaidou (2023) Uniaxial compression promotes osteogenic response of hBM-MSCs and suppresses osteoclastogenic response of hPBMCs in co-culture within composite scaffolds (TERMIS-EU, 28-31 March 2023, Manchester, UK)
11. Konstantinos Loukelis, Georgia-Ioanna Kontogianni, Maria Chatzinikolaidou (2023) 3D bioprinted composite constructs for bone tissue regeneration (TERMIS-EU, 28-31 March 2023, Manchester, UK)
12. Varvara Platania, Maria Chatzinikolaidou (2023) 3D bioprinted gellan gum/laponite vessel-like structures for endothelial tissue engineering (TERMIS-EU, 28-31 March 2023, Manchester, UK)
13. Konstantinos Loukelis, Danai Papadogianni, Maria Chatzinikolaidou (2022) Electrospun thermally crosslinked PVA/gellan gum scaffolds for bone tissue engineering (12<sup>th</sup> conference of the Hellenic Society for Biomaterials, 15-17 December 2022, Athens)
14. Varvara Platania, Maria Chatzinikolaidou (2022) Bioengineered vascular structures via 3D bioprinting (12<sup>th</sup> conference of the Hellenic Society for Biomaterials, 15-17 December 2022, Athens)
15. Konstantinos Loukelis, Georgia-Ioanna Kontogianni, Maria Chatzinikolaidou (2022) 3D bioprinted constructs comprising gellan gum/PVA bioinks enriched with nanohydroxyapatite for bone tissue regeneration (12<sup>th</sup> conference of the Hellenic Society for Biomaterials, 15-17 December 2022, Athens)
16. Varvara Platania, Maria Chatzinikolaidou (2022) 3D bioprinted vessels for endothelial tissue engineering (UK-Poland-Ukraine Bioinspired Materials conference online, 29-30 November 2022)
17. Konstantinos Loukelis, Georgia-Ioanna Kontogianni, Dimitris Vlassopoulos, Maria Chatzinikolaidou (2022) 3D bioprinted constructs for bone tissue engineering (36<sup>th</sup> Panhellenic Conference on Solid State Physics & Materials Science, 26-28 September 2022, Heraklion, Greece)
18. Georgia-Ioanna Kontogianni, Maria Chatzinikolaidou (2022) Konstantinos Loukelis, Amedeo Franco Bonatti, Carmelo De Maria, Raasti Naseem, Giovanni Vozzi, Kenneth Dalgarno, Nicholas Dunne, Chiara Vitale-Brovarone, Maria Chatzinikolaidou (2022) Uniaxial compression promotes the osteogenic response of pre-osteoblasts in polymeric scaffolds (International Conference on Biofabrication, 25-28 September 2022, Pisa, Italy)

19. Konstantinos Loukelis, Varvara Platania, Nikos Koutsomarkos, Maria Chatzinikolaidou (2022) A bioink containing VEGF-loaded microspheres for endothelial tissue engineering (International Conference on Biofabrication, 25-28 September 2022, Pisa, Italy)
20. Konstantinos Loukelis, Georgia-Ioanna Kontogianni, Maria Chatzinikolaidou (2022) Bioprinted constructs comprising gellan gum/PVA enriched with nanohydroxyapatite for bone tissue regeneration (International Conference on Biofabrication, 25-28 September 2022, Pisa, Italy)
21. Nikos Koutsomarkos, Maria Chatzinikolaidou, Dimitris Vlassopoulos (2022) Controlling the bioprinting efficiency of alginate-gelatin-hydroxyapatite bioinks for bone tissue engineering (International Conference on Biofabrication, 25-28 September 2022, Pisa, Italy)
22. Oleg Prymak, Lida E. Vagiaki, Ales Buyakov, Sergei Kulkov, Matthias Epple, Maria Chatzinikolaidou (2022) Porous zirconia/magnesia ceramics with variable mechanical properties and improved osteogenic response in vitro (Annual Meeting of the German Society for Biomaterials (DGBM), 15-17 September 2022, Essen, Germany)
23. Machla Foteini, Sokolova Viktoriya, Platania Varvara, Prymak Oleg, Kostka Kathrin, Kruse Benedict, Pasadaki Sofia, Alpantaki Kalliopi, Vidaki Marina, Chatzinikolaidou Maria, Epple Matthias, Bakopoulou Athina (2022) Dentin-pulp complex regeneration: towards a paradigm shift for dental practice (Pan European Region (PER), International Association of Dental Research (IADR), Oral Health Research Congress, 15-17 September 2022, Marseille, France)
24. Konstantinos Loukelis, Danai Papadogianni, Maria Chatzinikolaidou (2022) Electrospun thermally treated PVA/gellan gum membranes for bone tissue engineering (32<sup>nd</sup> Conference of the European Society for Biomaterials ESB 2022, 4-8 September 2022, Bordeaux, France)
25. Georgia-Ioanna Kontogianni, Amedeo Franco Bonatti, Carmelo De Maria, Raasti Naseem, Catarina Coelho, Giovanni Vozzi, Kenneth Dalgarno, Paulo Quadros, Chiara Vitale-Brovarone, Maria Chatzinikolaidou (2022) Composite scaffolds enriched with nano-hydroxyapatite and strontium-nano-hydroxyapatite promote osteogenic differentiation (32<sup>nd</sup> Conference of the European Society for Biomaterials ESB 2022, 4-8 September 2022, Bordeaux, France)
26. Konstantinos Loukelis, Varvara Platania, Nikos Koutsomarkos, Maria Chatzinikolaidou (2022) Bioprinted gellan gum/kappa-carrageenan scaffolds for soft tissue engineering (32<sup>nd</sup> Conference of the European Society for Biomaterials ESB 2022, 4-8 September 2022, Bordeaux, France)
27. Georgia-Ioanna Kontogianni, Konstantinos Loukelis, Amedeo Franco Bonatti, Carmelo De Maria, Raasti Naseem, Giovanni Vozzi, Kenneth Dalgarno, Nicholas Dunne, Chiara Vitale-Brovarone, Maria Chatzinikolaidou (2022) Mechanical stimulation promotes the osteogenic response of pre-osteoblasts in polymeric scaffolds (TERMIS-EU, June 28-July 1, 2022, Krakow, Poland)
28. Varvara Platania, Konstantinos Loukelis, Maria Chatzinikolaidou (2022) Gelatin-PVA microspheres for dual growth factor delivery to guide vascularized bone formation (TERMIS-EU, June 28-July 1, 2022, Krakow, Poland)

#### Recent awards

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2023	Elected European Orthopaedic Research Society (EORS) ambassador for Greece
2023	Awarded International Fellow of Tissue Engineering and Regenerative Medicine (FTERM). The honorary status of FTERM recognizes individuals that have made outstanding contributions to the field of tissue engineering and regenerative medicine with outputs of clear professional excellence
2022	Best oral presentation for PhD students, 12 <sup>th</sup> conference of the Hellenic Society for Biomaterials, 15-17 December 2022, Athens
2022	'Bioengineered vascular structures via 3D bioprinting', Varvara Platania, Maria Chatzinikolaidou
	First 'Senior Robert Frank Award – Basic Science' in International Association for Dental Research (IADR) conference, Continental European Division (CED), Brussels, September 16-18, 2022
	'Dentin Regeneration by DMP-1/BMP-2-Plasmid-Modified Nanoparticle-Treated DPSCs on Freeze-Dried Dentin Scaffolds'



Machla F, Sokolova V, Platania V, Prymak O, Kostka K, Kruse B, Pasadaki S, Alpantaki K, Vidaki M, Chatzinikolaïdou M, Epple M, Bakopoulou A  
2020 Awarded Fellow in Biomaterials Science and Engineering (FBSE), International Union of Societies for Biomaterials Science and Engineering (IUS-BSE); The honorary status of FBSE recognizes excellence in professional standing and high achievements in the field of biomaterials science and engineering

## Teaching

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2022-2023 Lectures on “Biochemistry and Molecular Biology”, undergraduate program, Department of Materials Science and Technology, University of Crete, Greece  
May 2023 Lectures on “Biomaterials and three-dimensional models for tissues and organs”, Undergraduate Program, School of Medicine, University of Athens, Greece  
Since Sept. 2020 Lectures on “Tissue engineering and Regenerative Medicine”, International Joint Postgraduate Program “Biomedical bioengineering”, University of Crete, Technical University of Crete, FORTH, Heraklion, Greece  
Since Febr. 2020 Lectures on “Introduction in tissue engineering”, Postgraduate Program “Biomedical bioengineering”, University of Western Macedonia, Greece  
Since May 2019 Lectures on “Tissue engineering and regenerative medicine/dentistry”, Postgraduate Program “Dental and craniofacial bioengineering & applied biomaterials”, Aristotle University of Thessaloniki, Greece  
2016-2017 & 2022-2023 Lectures on “Biochemistry and Molecular Biology”, undergraduate program, Department of Materials Science and Technology, University of Crete, Greece  
Since 2014 Lectures on “Molecular Cell Biochemistry”, undergraduate program, Department of Materials Science and Technology, University of Crete, Greece  
2013-2014 Lectures on “General Chemistry”, undergraduate program, Department of Materials Science and Technology, University of Crete, Greece  
2012-2014 Lectures on “Introduction in Biomedical Engineering”, undergraduate program, Department of Materials Science and Technology, University of Crete, Greece  
Since 2011 Lectures on “Biomaterials-scaffolds and stem cell applications”, Master’s Program “Molecular Basis of Human Disease”, School of Medicine, University of Crete, Greece  
Since 2011 Lectures on “Bone and cartilage tissue engineering” and “Cell adhesion”, Master’s Program Department of Materials Science and Technology, University of Crete, Greece  
2008-2012 Lectures on “Tissue engineering and applications”, undergraduate program, Department of Materials Science and Technology, University of Crete, Greece  
Since 2007 Lectures on “Biological materials and composite biomaterials”, undergraduate program, Department of Materials Science and Technology, University of Crete, Greece  
2004 - 2006 Seminar lectures on “Bioenergetics” in Institute of Physiological Chemistry, Division of Biochemical Endocrinology, Faculty of Medicine, University of Essen, Germany

## Member of scientific societies

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- European Society for Biomaterials, ESB
- Tissue Engineering & Regenerative Medicine International Society, TERMIS
- European Orthopaedic Research Society, EORS
- International Society for Biofabrication (ISBF)
- Materials Research Society (MRS)
- Hellenic Society for Biomaterials (vice president of the Council 2015-2018), HSB
- Hellenic Society of Gene Therapy and Regenerative Medicine
- Hellenic Polymer Society