

CURRICULUM VITAE



First and last name: Ilijana Kovrlija

Scientific degree: PhD in Chemical Engineering – Materials Science

Date and place of birth: 03.10.1994.; Prijedor, Bosnia and Herzegovina

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Professional media platforms: | **SCOPUS** <https://www.scopus.com/authid/detail.uri?authorId=57202339872>
| **Research Gate** <https://www.researchgate.net/profile/Ilijana-Kovrlija>
| **LinkedIn** <https://www.linkedin.com/in/ilijana-kovrlija-3a478b154/?originalSubdomain=lv>

Work experience:

09.2025 – present **Postdoctoral researcher**
CÚRAM, SFI Research Centre for Medical Devices, University of Galway, Ireland

09.2024 – 09.2025 **Postdoctoral researcher**
Riga Technical University, Institute of Biomaterials and Bioengineering; Baltic Biomaterials Centre of Excellence (H2020 project)

01.09.2020 – 06.09.2024 **PhD candidate; Research Assistant**
MSCA (Marie Skłodowska Curie Actions) Fellow within H2020 ITN PREMURORA project at Riga Technical University, Institute of Biomaterials and Bioengineering

01.11.2018 - 01.08.2020 **Product Quality Engineer**
Prijedorčanka A.D., Distillery;

Education:

2020 – 2024 **PhD in Materials Science,**
Riga Technical University, Faculty of Natural Sciences and Technology, programme "Chemistry, materials science and technology"; Supervisor: Prof. Dagnija Loca and Prof. Janis Locs;

2017 – 2018 **MSc in Biochemical Engineering and Biotechnology,**
Faculty of Technology and Metallurgy, University of Belgrade, programme "Biochemical engineering and Biotechnology", Supervisor: Prof. Bojana Obradovic;

2013 – 2017 **BSc in Biochemical Engineering and Biotechnology,**
Faculty of Technology and Metallurgy, University of Belgrade, programme "Biochemical engineering and Biotechnology", Supervisor: Prof. Dusan Mijin;

Research visits:

18.02. - 19.03.2023	University of Piemonte Orientale, CAAD, Novara, Italy; Testing the biocompatibility of biomaterials for bone tissue engineering;
15.01. - 15.02.2023	Aalto University, Helsinki, Finland; Testing the electrochemical behaviour of coated and uncoated titanium alloys
01.03. - 01.04.2022	Institut National Polytechnique De Toulouse (INPT-CIRIMAT), Toulouse, France; Characterization of calcium phosphates with spectroscopy methods (RAMAN, FTIR)
19.09. - 19.12.2021	University of Piemonte Orientale, CAAD, Novara, Italy; Testing the biocompatibility of biomaterials for bone tissue engineering

Languages: Serbian – mother tongue; English - C2; Spanish – B1; German – A2; Latvian - A1

Publications in peer reviewed scientific journals (indexed in „SCOPUS” and “Web of Science” databases):

1. **Kovrljija I.**, K. Menshikh, H. Abreu, A. Cochis, L. Rimondini, O. Marsan, C. Rey, C. Combes, J. Locs, D. Loca, Challenging Applicability of ISO 10993-5 for Calcium Phosphate Biomaterials Evaluation: Towards More Accurate In Vitro Cytotoxicity Assessment, *Biomaterials Advances*, 160, 213866, 2024; <https://doi.org/10.1016/j.bioadv.2024.213866>.
2. **Kovrljija I.**, Pańczyszyn E., Demir O., Laizane M., Corazzari M., Locs J., Loca D. Doxorubicin-loaded octacalcium phosphate particles as controlled release drug delivery systems: physico-chemical characterization, *in vitro* drug release and evaluation of cell death pathway, *International Journal of Pharmaceutics*, 653, 2024, 123932; <https://doi.org/10.1016/j.ijpharm.2024.123932>.
3. M. Nascimben, **Kovrljija I.**, Locs, J., Loca D., L. Rimondini. Fusion and classification algorithm of octacalcium phosphate production based on XRD and FTIR data, *Scientific Reports*, 14:1489, 2024, 1-11. <https://doi.org/10.1038/s41598-024-51795-0>.
4. A. Bordbar-Khiabani, **Kovrljija I.**, J. Locs, D. Loca, M. Gasik. Octacalcium Phosphate-Laden Hydrogels on 3D-Printed Titanium Biomaterials Improve Corrosion Resistance in Simulated Biological Media. *Int. J. Mol. Sci.* 2023, 24(17), 13135; <https://doi.org/10.3390/ijms241713135>.
5. K. Aunina, A. Ramata-Stunda, **Kovrljija I.**, E. Tracuma, R. Merijs-Meri, V. Nikolajeva, D. Loca, Exploring the Interplay of Antimicrobial Properties and Cellular Response in Physically Crosslinked Hyaluronic Acid/ ϵ -Polylysine Hydrogels. *Polymers*. 2023 Apr; 15(8): 1915, <https://doi.org/10.3390/polym15081915>.
6. **Kovrljija I.**, K. Menshikh, O. Marsan, C. Rey, C. Combes, J. Locs, D. Loca. Exploring the Formation Kinetics of Octacalcium Phosphate from Alpha-Tricalcium Phosphate: Synthesis Scale-Up, Determination of Transient Phases, Their Morphology and Biocompatibility. *Biomolecules*, 2023, 13(3), 462; <https://doi.org/10.3390/biom13030462>.
7. M. Mosina*, **Kovrljija I.**, L. Stipniece, J. Locs. Gallium containing calcium phosphates: Potential antibacterial agents or fictitious truth. *Acta Biomaterialia*, 150, 48-57, 2022 <https://doi.org/10.1016/j.actbio.2022.07.063>.
8. **Kovrljija I.**, J. Locs, D. Loca*. Incorporation of Barium Ions into Biomaterials: Dangerous Liaison or Potential Revolution? *Materials*, 2021, 14(19), 5772; <https://doi.org/10.3390/ma14195772>.
9. **Kovrljija I.**, J. Locs, D. Loca*. Octacalcium phosphate: Innovative vehicle for the local biologically active substance delivery in bone regeneration. *Acta Biomaterialia*, 135, 27-47, 2021 <https://doi.org/10.1016/j.actbio.2021.08.021>.

Presentations at international conferences:

1. **Kovrljija I.**, Menshikh K., Rimondini L., Combes C., Locs J., Loca D., “Rethinking ISO 10993-5: Enhancing *In Vitro* Cytotoxicity Assessment for Octacalcium Phosphate, Amorphous Calcium Phosphate, Tricalcium Phosphate and Hydroxyapatite”. 34th Annual Conference of the European Society of Biomaterials ESB 2025, 07.09.2025-11.09.2025, Turin, Italy; oral.
2. **Kovrljija I.**, O. Demir, A. Pylostomou, E. Pańczyszyn, M. Corazzari, J.Locs, D.Loca, “Calcium phosphates as drug delivery vehicles for cancer treatment”. 12th World Biomaterials Congress, 26.-31. May 2024, Daegu, South Korea; oral.
3. **Kovrljija I.**, M. Nascimben, A. Bordbar-Khiabani, K.Menshikh, M. Gasik, C.Combes, L. Rimondini, J.Locs, D.Loca, “Tailoring the production technology and utilization of octacalcium phosphate for precise patient-centred applications in musculoskeletal field”. 12th World Biomaterials Congress, 26.-31. May 2024, Daegu, South Korea; poster.
4. **Kovrljija I.**, L.Rimondini, MSCA Contribution in bridging R&I and standardisation – PREMURROSA project. 2024 annual conference of the Marie Curie Alumni Association, Milan, Italy, 15.03.2024; invited talk.
5. J.Locs, **Kovrljija I.**, R.Choudhary, D.Loca “Roadmap from upscaling and rapid synthesis towards first-ever consolidation of OCP”. 33rd conference and annual meeting of the International Society for Ceramics in Medicine (Bioceramics 33), Solothurn, Switzerland, 17-20 October 2023; invited talk – presented by J.Locs.
6. **Kovrljija I.**, O.Demir, D.Loca " Octacalcium phosphate and doxorubicin hydrochloride: novel drug delivery system for cancer treatment". International Scientific Conference “Materials Science and Applied Chemistry”, October 06, 2023, Riga, Latvia; oral.
7. **Kovrljija I.**, O.Demir, M. Laizane, J.Locs, D.Loca "Novel drug delivery vehicle: doxorubicin-loaded octacalcium phosphate". 33rd Annual Conference of the European Society of Biomaterials ESB 2023, 04.09.2023-08.09.2023, Davos, Switzerland; poster.
8. **Kovrljija I.**, J.Locs, D.Loca “Octacalcium phosphate: journey of creating a unique drug delivery vehicle”. The XVIIIth Conference of the European Ceramic Society, Lyon, France; 2-6 July 2023; oral.
9. D.Loca, **Kovrljija I.**, A.Pylostomou, J.Locs, “Can Octacalcium Phosphate Be Used As a Doxorubicin Delivery Platform?”, Tissue Engineering and Regenerative Medicine International Society – Americas Chapter Annual Meeting TERMIS AM 2023, 11-14 April.2023, Boston, USA.; poster presented by D. Loca.
10. **Kovrljija I.**, K.Menshikh, O.Marsan, C.Rey, C.Combes, J.Locs, D.Loca “Scale-Up of Octacalcium Phosphate via Hydrolysis Route: Effect on Physico-Chemical Characteristics and In-Vitro Cytocompatibility with Bone Marrow-Derived Mesenchymal Stem Cells”. TERMIS 2023 EU " Tissue Engineering and Regenerative Medicine International Society (TERMIS) European Chapter Meeting 2023 ", 28-31 March 2023, Manchester, UK; oral.
11. **Kovrljija I.**, K.Menshikh, O.Marsan, C.Rey, C.Combes, J.Locs, D.Loca “Phase transformation from α -tricalcium phosphate to octacalcium phosphate via hydrolysis route”. Scandinavian Society for Biomaterials 16th annual meeting ScSB 2023, 21-24 March 2023, Roros, Norway; poster.
12. **Kovrljija I.**, C.Barbut, J.Locs, D.Loca "Incorporation and effect of lidocaine hydrochloride on octacalcium phosphate". 32nd Annual Conference of the European Society of Biomaterials ESB 2022, 04.09.2022-08.09.2022, Bordeaux, France; poster.
13. K.Menshikh, **Kovrljija I.**, M.Miola, A.Cochis, L.Rimondini “Synthetic pre-vascularized porous scaffold as an engineered environment for the in vitro osteosarcoma model”. TERMIS 2022 EU " Tissue Engineering and Regenerative Medicine International Society (TERMIS) European Chapter Meeting 2022 ", 28.06. - 01.07.2022, Krakow, Poland; poster presented by K. Menshikh.
14. **Kovrljija I.**, J.Locs, D.Loca “Unravelling the Behaviour of Octacalcium Phosphate in Various Model Solutions”. Scandinavian Society for Biomaterials 15th annual meeting ScSB 2022, 13-15 June 2022, Jurmala, Latvia; poster.
15. K.Menshikh, **Kovrljija I.**, M.Miola, A.Cochis, L.Rimondini “Freeze-dried Composition of Alginate and

- Bioglass as an Engineered Environment for the Osteosarcoma Model”. Scandinavian Society for Biomaterials 15th annual meeting ScSB 2022, 13-15 June 2022, Jurmala, Latvia; poster presented by K. Menshikh.
16. **Kovrljija I.**, C.Barbut, J.Locs, D.Loca “Effects of the synthesis conditions on the hydrolysis of α -tricalcium phosphate to octacalcium phosphate”. 31st Annual Conference of the European Society for Biomaterials, ESB 2021 (online); poster.
 17. **Kovrljija I.**, J.Locs, D.Loca “Octacalcium phosphate: a contemporary drug delivery system for local biologically active substances – a review”. Scandinavian Society for Biomaterials ScSB, 2021 (online); poster.
 18. **Kovrljija I.**, J. Zvicer, A. Medic, S. Novak, B. Obradovic “Development and Biomimetic Characterization of Bilayer Scaffolds Based on Gellan Gum and Bioactive Glass for Osteochondral Tissue Engineering”. 61st International Scientific Conference “Materials Science and Applied Chemistry”, October 23, 2020, Riga, Latvia; oral.
 19. **Kovrljija I.**, J.Zvicer, B.Obradovic “Functional characterization of biphasic implants based on gellan gum and bioactive glass for osteochondral tissue engineering”. 17th Young Researchers conference Material Science and Engineering, 5-7 December, 2018, Belgrade Serbia; oral presented by J. Zvicer.
 20. **Kovrljija I.**, J.Zvicer, B.Obradovic “Development and Biomimetic Characterization of Bilayer Scaffolds Based on Gellan Gum and Bioactive Glass for Osteochondral Tissue Engineering”. Regional Congress of Technology Students of Serbia (Tehnologijada 2018), May, 2018, Lepenski Vir, Serbia; oral.

Participation in Projects and COST actions:

1. PostDoc Fellowship in the framework of Marie Skłodowska-Curie Actions COFUND Fellowship Program “MedTrain+” (Ref. No. 101081457), CÚRAM Centre, University of Galway, Ireland
2. PhD student and PostDoc fellow within Horizon 2020 project “Baltic Biomaterials Center of Excellence – BBCE” , integrated in the group “ Drug, ion, cell delivery”, (2023-2024)
3. TEndon Regeneration NETwork (TENET, CA22170), COST action, management committee member, (2023-2027).
4. PhD student within Marie Skłodowska-Curie Innovative Training Networks Horizon (MSCA ITN) 2020 project – “PREMUROSA - Precision medicine for musculo-skeletal regeneration, prosthetics, and active aging”, (2020-2023)

Honours and Awards

1. In **2025** – Julia Polak European Doctorate Award 2025 by the European Society for Biomaterials (ESB)
2. In **2024** - Second place winner in the first Bioceramics student speech contest, online; 17th April 2024.
3. In **2023** - Second place winner in the student speech contest during “The XVIIIth Conference of the European Ceramic Society”, Lyon, France; 2-6 July 2023, as the Representative of Latvia.
4. In **2023** - Travel award from TERMIS EU chapter for attending TERMIS 2023 EU "Tissue Engineering and Regenerative Medicine International Society (TERMIS) European Chapter Meeting 2023 ", 28-31 March 2023, Manchester, UK.
5. In **2021** - First place in the young scientist rapid fire speech contest during the “The Scandinavian Society for Biomaterials 13th annual meeting in 2021(ScSB 2021)” with poster presentation “Octacalcium phosphate: a contemporary drug delivery system for local biologically active substances – a review”.
6. In **2018** - Honorary Student Stipend from the Republic of Serbia.
7. In **2017** - Honorary Student Stipend from the Republic of Serbia.
8. **2014 - 2018** – Honorary scholarship from the city of Prijedor, Republic of Srpska, Bosnia and Herzegovina.

Memberships:

1. Since **2024** – YCN representative of Latvia
2. **2022-2024** - Member of Tissue Engineering and Regenerative Medicine international society.

3. **2021-2024** - Member of Scandinavian Society for Biomaterials
4. Since **2021** - Member of European Biomaterial Society.

Supervision:

Supervision of Bachelor Thesis

1. Marta Laizāne “Doxorubicin loaded octacalcium phosphate as a novel drug delivery system”, defended in **June 2024**.

Supervision of Master Thesis

1. Sarah Vansteene “Drug loaded octacalcium phosphate for bone regeneration” defended in **2022** (international student, France).
2. Clara Barbut “Octacalcium Phosphate as a Drug Delivery System” defended in **2021** (international student, France).

Management of the commission for the organization of the international conferences or participation in their activities/ Editorial board in Journals:

1. **2025** – Member of Early Career Researcher Editorial Board of European Cells & Materials (eCM)
2. **2023** – Member of the organizational committee “4th PREMURSA/RISEus2 summer school” ,15.-19.05.2023 Riga, Latvia (>40 participants).
3. **2022** – Member of the conference organizational committee “Scandinavian Society for Biomaterials conference (ScSB)”, 13.-15.06.2022, Jūrmala, Latvia, (>100 participants).
4. **2021** – Member of the conference organizational committee “Scandinavian Society for Biomaterials conference (ScSB)” 14.06.2021, Riga, online.

Extracurricular activities/Workshops/Hands-on trainings/Soft skills trainings:

1. “Introductory Biostatistics session”; Dr. Kishor Das and Dr. Davood Roshan, University of Galway, Galway, Ireland; 30.09.2025.
2. "Controlled release technology: delivery systems for pharmaceuticals and other agents", hands on training, FAU, Friedrich Alexander University Erlangen-Nuremberg, Riga, Latvia; 11.12.2024-13.12.2024.
3. “Leadership training, project management, conflict management, negotiation (workshop)”, FAU, Friedrich Alexander University Erlangen-Nuremberg, Riga, Latvia; 14.11.2024-15.11.2024.
4. “Summer School – Scientific writing and presenting”, FAU, Friedrich Alexander University Erlangen-Nuremberg, The Institute of Biomaterials, Germany; 14.10.2024-18.10.2024.
5. "Soft Biomaterials synthesis, characterization and properties", hands on training, AO Research Institute Davos, Riga, Latvia; 08-12 April 2024.
6. "How to establish in vivo experiments", Summer School, GUF, Frankfurt Orofacial Regenerative Medicine Laboratory, Goethe University Frankfurt, Germany, RISEus2 H2020 project, 25.06.-01.07 2023.
7. Project design and management within the European framework, EU CORE Consulting s.r.l., Dr. Irene Liverani, Turin, Italy, 12.06.-25.06. 2023.
8. "Fundamentals of Technology Transfer, ASTP course", Business Development & Knowledge Transfer, University of Rotterdam, Art Bos, Riga, Latvia, 07.06.2023.
9. “EUt+ Universal Design for Learning”, Staff development course, Facilitator: Deirdre McQuillan, Technological University Dublin, March-June 2023.
10. Translational research and exploitation of the research results for early-stage researchers (ESRs), AO Research Institute Davos, Riga, Latvia; 17-19 April 2023.
11. “How to write successful MSCA Postdoctoral fellowships proposals”, EU CORE Consulting s.r.l., Dr. Irene Liverani, online training; H2020 ITN PREMURSA project, 09-11 November 2022.
12. Hands-on workshop on “Biofabrication”, AO Research Institute Davos, Davos, Switzerland, 28-29 July 2022.

13. Hands-on training “2 day X-Ray Diffraction Course”, Malvern Panalytical, Application Competence Center, Riga, Latvia; 19-20 May 2022.
14. “IP rights” (lect. Katerina Hartvichova, Jiri Slavik), Latvian Institute of Organic Synthesis, Riga, Latvia; 05-06 May 2022.
15. PREMURSA training on “Additive Manufacturing and Lattice Structure Applications”, Dr. Ece Tutsak, BTech Innovation A.Ş., Ankara, Turkey, online; 20.12.2021.
16. Technologies for biomaterials surface characterization and for solid state biomaterials characterization”, Prof. Janis Locs, Prof. Jonathan Massera, Prof. Enrica Vernè and Prof. Silvia Spriano, online 4 days; H2020 ITN PREMURSA project.
17. Online hands-on training “Rietveld refinement of Powder XRD Data Using FullProf, GSAS and JANA”, Spark Institute of Advanced Science, 24-31 July 2021.
18. “Leadership training, project management, conflict management, negotiation (workshop)”, FAU, Friedrich Alexander University Erlangen-Nuremberg, The Institute of Biomaterials, Germany; 26./27.11.2020.

Technical skills:

XRD, FTIR, Raman, SEM, TEM, UV-Vis, Laser granulometry, DSC-TGA, pressing (e.g. cold sintering), basic *in-vitro* assays etc.

Soft skills:

Critical Thinking

analysis of complex problems and innovative approaches for problem solving.

Attention to Detail

High accuracy in experiments, troubleshooting, and data interpretation.

Organizational Skills

Excellent time management (tasks, and lab work to meet deadlines) as well as supervision of students and their tasks.

Communication Skills

Proficient in technical writing and oral presentations. Fluent in more languages.

Problem-Solving

Strong troubleshooting abilities in lab and office settings.

Adaptability

Quick adjustment to changing conditions and new information in the lab and new cultures. Comfortable with ad hoc situations.