

Hosting offer for Marie Skłodowska-Curie Postdoctoral Fellowships (PF) 2022 at University of Rijeka

[MSCA Postdoctoral Fellowships](#) are individual research grants offering excellent postdoctoral researchers the chance to develop their skills by means of international mobility. Through the implementation of an original and personalised research project, MSCA Postdoctoral Fellowships aim to foster excellence through training and mobility and to equip researchers with new skills and competences in order to identify solutions to current and future challenges.

University of Rijeka/Faculty of Civil Engineering/Applied Mechanics Research Group invites motivated postdoctoral researchers to jointly prepare an application for the [MSCA-PF-2022 call Marie Skłodowska-Curie Postdoctoral Fellowships](#) call ([MSCA-PF-2022](#)) with them as host organisation.

Description of Hosting organisation/group

Short description (preferably max. 0.5 page) of the host research group/host centre - strengths and scientific achievements and (if applicable) important infrastructure

Link to the webpage of the host group/host center

Research within the Faculty is conducted in all major fields of Civil Engineering involving Construction Management, Transportation Engineering, Hydraulics, Geotechnical Engineering, Applied Mechanics and Structural Engineering. The Faculty provides necessary administrative support to the research group in terms of book-keeping, accountancy and procurement. All the existing research equipment within the institution, shared facilities and expertise are available to the research group.

The research group involves seven members of the academic staff (Gordan Jelenić, Dragan Ribarić, Edita Papa Dukić, Leo Škec, Nina Čeh, Teo Mudrić, Sara Grbčić Erdelj), and eight research-contract staff. Research is being conducted in structural analysis in engineering including slender structures (<https://thread-etn.eu/>), plates and shells (<https://www.researchgate.net/project/Assumed-strain-method-in-finite-elements-for-layered-plates-and-shells-with-application-on-layer-delamination-problem>), Cosserats' continuum mechanics (<https://fimcos.gradri.uniri.hr/>), spatial and temporal discretisation on non-linear manifolds (<https://canfas.gradri.uniri.hr/>), reinforced-concrete frames, modelling fracture, damage and delamination in layered beams and plates (<https://www.brunel.ac.uk/research/Projects/MolayStrudel>), and structural and experimental dynamics, especially in the areas of multiple support excitation and non-smooth contact dynamics (<http://mbsdynamics-ukf.gradri.uniri.hr/>). This research has been supported in the past fifteen years from a number of competitive international and national funding sources as well as national and university research grants in the total value of cca €1M. The group has collaborated with academic institutions in Slovenia, Great Britain, Italy, Spain, Finland, Germany, France, Ireland, Belgium, Austria and China.

Particular emphasis is given to the interconnection between theory, numerical analysis and experimental research, for which the following equipment is provided:

Laboratory facilities

- *Zwick Z 600E 600 kN universal compression/tension/bending testing machine*

- GOM Aramis/Pontos optical system involving two high-speed cameras and software for contactless measurement
- HBM strain gauges, Omega LVDTs, Multiyo micrometers and National Instruments acquisition system including LabVIEW software
- PhotoStress Plus System VPG LF/Z-2 polariscope and a set of test frames for static and dynamic experiments
- High-performance 3D printer Connex 500 StratasyS with 20x30x50 cm print chamber size
- Quanser I-40 and two Quanser III bi-axial shake tables with LabVIEW and Matlab software support

Simulation tools:

- Modern work-stations for all members of the research group
- FEAP source code
- Intel Fortran, Wolfram Mathematica and Mathworks Matlab programming environments

Your profile including Topics/expertise

Describe here in which research domains/topics you welcome postdoctoral candidates for an MSCA-PF application (preferably max. 0.5 page)

Preferably you can list one or more potential supervisors and (a short) reference to their expertise

Potential supervisors for MSCA-PF candidates:

1. Gordan Jelenić (<https://orcid.org/0000-0001-5130-1223>)
 - Ph.D. (1993, University of Ljubljana, Slovenia); post-doctoral researcher (1993-1998) and independent research fellow (1999-2004), Imperial College London, Great Britain; university teacher and researcher (University of Rijeka, Croatia)
 - has supervised twelve Ph.D. students and four post-doctoral researchers (past and present) and run several competitive national and European projects
 - Research areas in which post-doctoral fellows are sought: general theory and parameter identification in Cosserats' and couple-stress continuum, geometrically exact beam theory, invariant-preserving finite-element interpolation and time integration on Lie groups
2. Dragan Ribarić (<https://orcid.org/0000-0003-4810-5621>)
 - 35 years' experience in work for industry (structural design, supervising and consulting),
 - Ph.D in 2012 (University of Rijeka, Croatia),
 - university teacher and researcher (University of Rijeka, Croatia)
 - one project leadership (Croatian Science Foundation, 2018-2022)
 - supervisor to two Ph.D students (present) and one post-doctoral researcher
 - Research areas in which post-doctoral fellows are sought: plate and shell modelling, finite element analysis, layered structure and delamination modelling, finite deformation analysis
3. Leo Škec (<https://orcid.org/0000-0002-0074-7169>)
 - Ph.D. (2014), post-doctoral researcher (2014-2015), assistant professor (2015-2022), associate professor (2022-) at the University of Rijeka, Faculty of Civil Engineering
 - research fellow at Brunel University London, UK (2016-2018)
 - former MSCA Individual Fellow
 - has supervised two Ph.D. students (1 past and 1 present)

- *Research areas in which post-doctoral fellows are sought: geometrically or/and materially nonlinear modelling of layered structures, composites, delamination, fracture mechanics, experimental mechanics*

- **Expected qualifications/expertise of the candidate:**

The prospective candidate should possess strong interest and broad knowledge of mechanics firmly grounded in fundamental physical principles with more specific expertise in one of the areas of interest of the potential supervisors, possibly acquired during Ph.D. studies. Additional expertise in programming (Wolfram Mathematica, MathWorks Matlab, Python, Fortran, LabVIEW particularly welcome) and laboratory work is highly desired.

- **Please specify the required PhD degrees if applicable :**

Engineering (Civil, Mechanical, Aerospace, Naval, ...), Physical Sciences or Mathematics

- You must have a completed PhD at the time of the call deadline (14 September 2022).
- Candidates must have a maximum of 8 years full-time research experience from the PhD award date until September 14, 2022. Periods of inactivity in research (e.g. unemployment, periods of employment outside research, parental or sick leave) do not count towards the time of research experience.
- For European fellowships, candidates can be of any nationality and must not have resided or carried out their main activity (work, studies, etc.) in Croatia for more than 12 months in the 36 months immediately before September 14, 2022.
- Highly motivated candidate with an excellent research track record appropriate to career stage, as evidenced by academic publications and other scientific output.

What we offer

- **Support and guidance for the preparation of your MSCA PF proposal**
- **A stimulating, interdisciplinary environment for high-level research.**

How to apply?

Indicate your interest by contacting the host institution as follows:

Please contact the prospective supervisor (gordan.jelenic@uniri.hr, dragan.ribaric@uniri.hr, leo.skec@uniri.hr) (cc tea.dimnjasevic@uniri.hr) by email with a short CV and motivation to indicate your interest to prepare a MSCA-PF application with a supervisor.

After the supervisor agrees to support you as a MSCA-PF candidate, you can start preparation of MSCA PF project proposal and will be supported further by the Research Support Office of the host university.

For more information please contact the MSCA coordinator of the host institution: Tea Dimnjasevic, tea.dimnjasevic@uniri.hr