

## Kratek opis usposabljanja mladega raziskovalca (*Short description of the Young Researcher's training*)

1. Raziskovalna organizacija (*Research organisation*):

Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo

2. Ime, priimek in elektronski naslov mentorja (*Mentor's name, surname and email*):

Matjaž Dolšek

3. Šifra in naziv raziskovalnega področja (*Research field*):

2.01.04 Tehnika / Gradbeništvo / Potresno inženirstvo

4. Kratek opis usposabljanja mladega raziskovalca (*Short description of the Young Researcher's training*):

Navedite tudi morebitne druge zahteve, vezane na usposabljanje mladega raziskovalca (npr. znanje tujih jezikov, izkušnje z laboratorijskim delom, potrebne licence za usposabljanje...).

*slo:*

Mladi raziskovalec(ka) se bo usposabljal(a) na doktorskem študiju Grajeno okolje, Fakulteta za gradbeništvo in geodezijo, Univerza v Ljubljani, z možnostjo izpopolnjevanja na uglednih institucijah po svetu. Tema doktorske disertacije mladega raziskovalca bo usklajena z raziskavami programske skupine Potresno inženirstvo (P2-0185).

Potresna ranljivost Republika Slovenije je visoka, saj je nedavna študija pokazala, da bi potres z magnitudo 6.1, ki je bila ocenjena za Ljubljanski potres iz leta 1895, povzročil mediano neposredne škode na stavbah v višini 15% letnega BDP Republike Slovenije. Poleg tega je Seizmični stresni test stavbnega fonda v Republiki Sloveniji pokazal, da v stavbah, za katere se smatra da tveganje za izgubo življenja dolgoročno ni sprejemljivo, živi med 88 tisoč do 228 tisoč ljudi. Zaradi tako visoke izpostavljenosti Republike Slovenije, so raziskave programske skupine Potresno inženirstvo usmerjene v razvoj trajnostnega upravljanja grajenega okolja s poudarkom na krepitvi prožnosti Slovenije pri reakcijah na potrese.

Mladi raziskovalec(ka) bo lahko izbiral(a) med več različnimi raziskovalnimi temami, ki se uvrščajo v enega izmed treh raziskovalnih stebrov programske skupine: (1) potresno-odporno projektiranje in utrditev obstoječih objektov, (2) metode in orodja za vzpostavitev potresno-odpornega grajenega okolja ter (3) nove tehnologije, materiali in konstrukcije za trajnostni razvoj z upoštevanjem vpliva potresnega tveganja.

Nekatere ključne besede za izbor predvidene raziskave mladega raziskovalca(ke) so: seizmični stresni test grajenega okolja, krepitev prožnosti skupnosti pri reakcijah na močne potrese, potresno-odporno projektiranje objektov vključno z kritično infrastrukturo, potresna utrditev obstoječih stavb, trajnost in potresno tveganje, potresni odziv zemljine in interakcija s konstrukcijo, potresno-odporne lesene in betonsko-lesene konstrukcije, percepcija potresne nevarnosti in tveganja v družbi.

Kandidat(ka) mora izpolnjevati vse kriterije iz razpisa. Zaželena je magistrska izobrazba s področja gradbeništva in izkazan interes za raziskovanje s področja potresnega inženirstva, gradbeništva in drugih ved, ki jih povezuje potresno inženirstvo. Prednost bodo imeli kandidati(ke), ki imajo izkušnje s programiranjem in razumevanjem projektiranja potresnoodpornih konstrukcij, analize potresnega tveganja in izgub. Dodatne informacije: [mdolsek@fgg.uni-lj.si](mailto:mdolsek@fgg.uni-lj.si)

Predviden je vpis na doktorski študij Grajeno okolje.

*eng:*

Young researcher will be trained in the doctoral study program Built Environment, Faculty of Civil Engineering and Geodesy, University of Ljubljana, with the possibility of training at reputable institutions around the world. The topic of the young researcher's doctoral dissertation will be coordinated with the research program Earthquake Engineering (leader: Prof. Matjaž Dolšek) (P2-0185).

Seismic vulnerability of the Republic of Slovenia is high, as showed by a recent study which revealed that an earthquake of magnitude 6.1 that is to estimated magnitude of the 1895 Ljubljana earthquake, would cause median direct losses to buildings of 15% of Slovenia's annual GDP. In addition, the Seismic Stress Test of the building stock in the Republic of Slovenia showed that between 4% and 11% of population of Slovenia live in buildings where the risk of loss of life is not considered acceptable in the long term. Due to such a high exposure of the Republic of Slovenia to seismic risk, the research of the Earthquake Engineering research program is focused on the development of sustainable management of the built environment with an emphasis on enhancing Slovenia's seismic resilience in reactions to earthquakes.

The young researcher will be able to choose from several different research topics that fall into one of the three research pillars of the research program Earthquake Engineering: (1) earthquake-resistant design and strengthening of existing facilities, (2) methods and tools for development of resilient built environment and (3) new technologies, materials and structures for sustainable development, taking into account the impact of seismic risk.

Some keywords for the selection of the research theme of the young researcher are: seismic stress test of the built environment, enhancing seismic community resilience in reactions against strong earthquakes, earthquake-resistant design of facilities including critical infrastructure, seismic strengthening of existing buildings, sustainability and seismic risk, seismic response of soils and soil-structure interaction, earthquake-resistant timber structures and concrete-timber structures, perception of seismic hazards and risks in society.

The candidate has to fulfil all the criteria from the public call. A master degree in civil engineering is desirable, as well as a demonstrated interest in research in the field of earthquake engineering, civil engineering and other branches of science related to earthquake engineering. Preference will be given to candidates who have experience in programming and understand earthquake-resistant design of structures, seismic risk analysis and loss estimation. Additional information: [mdolsek@fgg.uni-lj.si](mailto:mdolsek@fgg.uni-lj.si).

The enrolment in the doctoral program Built Environment is envisaged.