

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

1. Raziskovalna organizacija (*Research organisation*):

Univerza v Ljubljani, Fakulteta za elektrotehniko
(*University of Ljubljana, Faculty of Electrical Engineering*)

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

Janez Krč (janez.krc@fe.uni-lj.si)

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

2.03.03 Obnovljivi viri in tehnologije (Fotovoltaika)

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:

Raziskovalno delo mladega raziskovalca bo umeščeno v širše področje fotovoltaike in optoelektronike, ki tako v Evropi kot tudi v Sloveniji v preteklih letih beleži strm razvoj. Osredotočeno bo na načrtovanje, optimizacijo in realizacijo naprednih fotonapetostnih gradnikov ter tudi fotonaponskih in optoelektronskih gradnikov.

Mladi raziskovalec bo svoje delo opravljal v okviru Laboratorija za fotovoltaike in optoelektroniko (LPVO) na Fakulteti za elektrotehniko Univerze v Ljubljani (UL FE). Njegovo raziskovalno delo bo tesno vpeto tako v raziskovalni program »Fotovoltaika in elektronika« (P2-0197) kot tudi v ostale tekoče mednarodne raziskovalne projekte, v sklopu katerih bo sodeloval z drugimi priznanimi raziskovalnimi organizacijami doma in v tujini.

V prvi fazi usposabljanja bo mladi raziskovalec poglobljeno teoretično razumevanje obravnavanih elementov povezal z naprednimi karakterizacijskimi metodami, kar bo omogočilo učinkovito uporabo obstoječih in tudi razvoj novih numeričnih modelov in simulacijskih pristopov za njihovo obravnavo. Ti pristopi bodo nato v drugi fazi raziskav služili za optimizacijo obravnavanih elementov, hkrati pa bodo vodili tudi v razvoj novih konceptov elementov, ki jih bo mladi raziskovalec realiziral in karakteriziral.

Mladi raziskovalec bo vpisal doktorski študij Elektrotehnika na UL FE. Od kandidata se pričakuje visoka stopnja motiviranosti za delo, suverenost v programiranju in numeričnem modeliranju, da ima izkušnje z eksperimentalnim delom v elektrotehniko oz. fotovoltaike/optoelektroniki ter da obvlada angleški jezik.

eng:

The research activities of the young researcher will be focused on the area of photovoltaics and optoelectronics, which have grown rapidly in the recent years both in Europe as well as in Slovenia. The specific tasks will involve design, optimization, and realization of advanced photovoltaic, photonic and optoelectronic devices.

The young researcher will carry out his research in the Laboratory of Photovoltaics and Optoelectronics (LPVO) at the Faculty of Electrical Engineering, University of Ljubljana (UL FE). His research activities will be tightly connected to the research programme »Photovoltaics and Electronics« (P2-0197) and other on-going international research projects, which will lead to cooperation with other renowned domestic and foreign research institutions.

In the first part of PhD training, the young researcher will tie profound theoretical understanding of the studied devices with advanced characterization techniques, which will enable efficient use of the existing as well as development of novel numerical models and modelling approaches. In the second part, these modelling approaches will be employed for the purpose of further optimization of state-of-the-art devices, and also for design of novel device concepts, which will be fabricated and experimentally characterized.

The candidate will enroll to the doctoral programme Electrical Engineering at UL FE. He is expected to exhibit a high level of motivation, be well skilled in computer programming and numerical modelling, has experience in experimental work in electrical engineering, electronics optoelectronics, and is fluent in speaking and writing in English language.