

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*):

Benjamin Lipovšek (benjamin.lipovsek@fe.uni-lj.si)

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

2.09.04 Optoelektronika (*Optoelectronics*)

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 optoelektronike, ki tako v Evropi kot tudi v Sloveniji v preteklih letih beleži strm razvoj. Osredotočeno bo na načrtovanje, optimizacijo in realizacijo naprednih fotonaponskih, optoelektronskih in fotonapetostnih gradnikov.

Potek raziskovalnega dela se bo izvajal v dveh fazah. V prvi fazi bo mladi raziskovalec poglobljeno teoretično razumevanje obravnavanih optoelektronskih 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 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 »Fotovoltaike 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.

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 elektroniki oz. optoelektroniki/fotoniki ter da obvlada angleški jezik.

eng:

The research activities of the young researcher will be focused on the area of optoelectronics, which has 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 photonic, optoelectronic, and photovoltaic devices.

The research will be conducted in two phases. In the first phase, 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 phase, 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 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.

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 versed in computer programming and numerical modelling, has experience in experimental work in electronics and optoelectronics, and is an advanced user of the English language.