

Opis delovnega mesta mladega raziskovalca/ke (*Description of the Young Researcher's position*)

1. Članica UL (*UL member*):

Univerza v Ljubljani, Fakulteta za elektrotehniko, Tržaška 25, 1000 Ljubljana

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

Doc. dr. Aleksander Sešek, aleksander.sesek@fe.uni-lj.si

3. Raziskovalno področje (*Research field*):

2.09 Elektronske komponente in tehnologije

4. Opis delovnega mesta mladega raziskovalca/ke (*Description of the Young Researcher's position*):

Vključuje morebitne dodatne pogoje, ki jih mora izpolnjevati kandidat/ka za mladega raziskovalca/ko, ki niso navedeni v razpisu za mlade raziskovalce.

slo:

Usposabljanje bo potekalo v Laboratoriju za načrtovanje integriranih vezij, Fakultete za elektrotehniko v Ljubljani v okviru raziskovalnega programa »Mikrostrukture in nanostrukture« in bo usmerjeno v raziskave 2D materialov, načrtovanje integriranih senzorskih sistemov na čipu in meritev.

Mladi raziskovalec bo spoznal osnovne gradnike integriranih senzorskih sistemov skupaj s principi delovanja nano-elektronsko-mehanskih (NEMS) sistemov ter metode načrtovanja integriranih vezij. Proučil bo metode izdelave, analize delovanja ter testiranja 2D struktur, skupaj z merilnimi metodami. Opravi tudi ustrezno analizo področja ter razvil in zasnoval napredno testno 2D senzorsko strukturo s pripadajočo elektroniko (integrirano ali diskretno).

Pri svojem delu bo uporabljal programska okolja Cadence, Ansys, Altium Designer, Matlab in še mnoga druga. Vsakršno poznavanje naštetih okolij je prednost. Obvezno je tekoče znanje vsaj enega tujega jezika (angleščina), zaradi sodelovanja na projektih s tujimi partnerji, študija tuje literature itd. Prav tako bo MR sodeloval pri pisanju znanstvenih in strokovnih člankov ter prispevkov za domače in tuje konference.

Predvideno je usposabljanje MR v tujini za obdobje najmanj 6 mesecev, po osnovnem izobraževanju o uporabi litografskih postopkov in materialov.

eng:

The training will take place in the Laboratory for the Design of Integrated Circuits, Faculty of Electrical Engineering in Ljubljana as part of the research program "Microstructures and Nanostructures" and will focus on research of 2D materials, the design of integrated sensor systems on a chip and measurements.

The young researcher will get to know the basic building blocks of integrated sensor systems together with the operating principles of nano-electronic-mechanical (NEMS) systems and integrated circuit design methods. It will examine methods of

fabrication, performance analysis and testing of 2D structures, along with measurement methods. He will also perform an appropriate field analysis and develop and design an advanced test 2D sensor structure with associated electronics (integrated or discrete).

At his work, he will use Cadence, Ansys, Altium Designer, Matlab and many other programming environments. Any familiarity with mentioned environments is an advantage. Fluency in at least one foreign language (English) is mandatory due to participation in projects with foreign partners, study of foreign literature, etc. He will also participate in scientific and professional articles writing and at contributions and presentations on domestic and international conferences.

It is planned for MR to go to an international exchange for at least 6 months, after basic lithographic processes and materials training/study.