

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

1. Članica UL (*UL member*):

Univerza v Ljubljani, Fakulteta za strojništvo

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

Joško Valentinčič, jv@fs.uni-lj.si

3. Raziskovalno področje (*Research field*):

Strojništvo

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:

Prilagodljiva in tiskana elektronika predstavlja velik potencial za razvoj izdelkov z visoko dodano vrednostjo na več specifičnih področjih uporabe, kot so zdravstvo in medicinski pripomočki, pametna embalaža in logistika, senzorji za internet stvari, spremljanje (monitoring) okolja in v industriji ter avtomobilska industrija. Čeprav že obstaja več tehnologij za izdelavo takšnih naprav, omejitve glede zanesljivosti, možnosti recikliranja ter težav pri izdelavi prosto oblikovanih in kompleksnih oblik predstavljajo izziv za nadaljnji prodor na trg. V tem kontekstu je cilj kandidata razviti novo procesno verigo za proizvodnjo fleksibilnih substratov s prevodnimi sledmi na podlagi tehnologije polimernega 3D-tiska. Prednost predlagane tehnike je, da se med postopkom tiskanja prevodnih sledi ne uporabljajo dodatne kemikalije, kar povečuje potencialno možnost recikliranja proizvedenih komponent ter možnost uporabe v biomedicinskih napravah. Takojšnja uporaba je mogoča na področjih proizvodnje pametnih izdelkov, fleksibilnih senzorjev in shranjevanja energije.

eng:

Flexible and printed electronics present a huge potential for the development of high-value-added products in several specific application areas such as healthcare and medical devices, smart packaging and logistics, sensors for IoT, industry and environmental monitoring, and automotive. Although several technologies already exist to produce such devices, limitations in terms of reliability, recyclability as well as the difficulty to produce freeform and complex shapes prevent the further expansion of their market penetration. In this context, the objective of the candidate is to develop a new process chain for the production of flexible substrates with conductive tracks based on polymer 3D printing technology. The advantage of the proposed technique is that no additional chemicals are used during the process for the printing of conductive tracks which enhances the potential recyclability of the components produced as well as the potential to be used in biomedical devices. Immediate applications can be found in the fields of smart product manufacturing, flexible sensors and energy storage.