

1. Raziskovalna organizacija (*Research organisation*):

Univerza v Ljubljani Naravoslovnotehniška fakulteta

2. Ime in priimek mentorja (*Name and surname of a mentor*):

Prof.dr. Jožef Medved

3. Področje znanosti iz šifranta ARRS (*Primary research field*):

2.04 Tehniške vede / Materiali

4. Kontaktni e-naslov mentorja (*Contact of a mentor*):

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5. Kratek opis programa usposabljanja (*Short description of the program*):

SLO

Program usposabljanja mladega raziskovalca bo usmerjen k poglobljenemu študiju načrtovanja in izdelave novih lahkih kovinskih materialov z izboljšanimi lastnostmi. Poseben poudarek bo namenjen: termodinamičnemu modeliranju faznih ravnotežij med strjevanjem in ohlajanjem, proučevanju razvoja mikrostrukture pri kontroliranem ohlajanju in termomehanskih obremenitvah ter izdelavi in aplikaciji teh materialov. Usposabljanje bo usmerjeno v poglobitev znanj na eni strani o termodinamiki in kinetiki elementarnih procesov, ki med razvojem mikrostrukture potekajo na različnih prostorskih in časovnih skalah v kovinskih materialih, po drugi strani pa v študij tehnologij njihove izdelave, karakterizacije in testiranja. Raziskovalna metodologija bo temeljila na modeliranju, numeričnih simulacijah, inverznih pristopih ter eksperimentalnem delu, kar vodi do celostne obravnave problemov na posameznih področjih. Mladi raziskovalec bo vključen v raziskovalni program Materiali s funkcionalno porazdeljenimi lastnostmi, ki jo sestavlja interdisciplinarna skupina partnerjev, kar zagotavlja na tem področju dela znanstveni in tehnološki napredek. Predvideno je, da bo del usposabljanja potekal v tujini.

ANG

Young researcher training program will be focused on in-depth study of the design and manufacture of new light metallic materials with improved properties. Particular emphasis will be placed on: thermodynamic modelling of phase equilibria during solidification and cooling, studying the microstructure evolution with controlled cooling and thermomechanical loads and the manufacture and application of these materials. Training will focus on deepening knowledge on one side of the thermodynamics and kinetics of elementary processes during the development of the microstructure held at different spatial and temporal scales of metallic materials and on the other side, the study of technologies of their production, characterization and testing. Research methodology will base on the modelling, numerical simulations, inverse approaches and experimental work, leading to a comprehensive treatment of problems in specific areas.

The young researcher will be included in the research program Materials with functional distributed properties, which consists of an interdisciplinary team of partners, which ensures scientific and technological progress in this field of work. It is predicted that the part of the training will took place abroad.

*J. Medved*