



Two Ph.D positions open in 2018

The Department for Nanostructured Materials will select two candidates for Ph.D. studies based on the [Public Call for Candidates for Early Stage Researchers with Selected mentors in 2018](#).

Fields of Ph.D Education in 2018 are:

Advanced thermoelectric materials for energy harvesting and sensor applications

Thermoelectric (TE) modules allow unique way for direct conversion of heat into electricity, without moving parts and hazardous side products. However the key to extensive use of TE technologies is their economic justification, which requires ability to produce cheap, nontoxic, stable and highly efficient TE materials and modules. Hence, in comparison to the nowadays mostly used state-of-the-art materials of heavy, toxic and expensive elements, this gives advantage and challenge to advance thermoelectric Skutterudites, chalcogenides, silicides and oxides. The main objective of the PhD project is the development of the advanced thermoelectric materials by studying the influence of chemical composition, dopants, processing and heat treatment on structure, microstructure and consequently their physical properties. The final ambitious goal is to enhance their figure of merit zT beyond current values, and to develop thermoelectric micro-generators (micro TEGs) for sensor applications.

Additive manufacturing of functionalized materials

The state-of-the-art additive manufacturing (AM) processes already allow the production of completely novel components with arbitrarily complex geometries. However, additional efforts and further development of both AM technologies as well as their respective feedstock's are essential in order to materialize the possibility of multi-material approach, where two or more materials with different properties can be combined into one component and thus pave the way for a significant higher degree of functionalization and miniaturization of AM components. The main objective of the PhD project is to develop innovative ceramic/metallic slurries designed for the use in additive manufacturing (LCM) technology that will simultaneously transform the green body into the fully compact sintered complexed-shaped material with the improved functional properties.

Minimum requirements for application:

- Candidates have to be graduates from a university of an appropriate field, either holding a graduate or master degree from a study programme before 11 June 2014 with grade point average of all courses (exams and lab classes) of at least 8,00; or a master (Bologna level 2) degree from a study programme after 11 June 2004; with a grade point average of all courses including master thesis of at least 8,00 or have the appropriate education level, achieved at a university abroad
- Are not older than 28 years (born in 1990 or later). The age criterion will be raised by one or two years in case the candidate has already completed one or two years of postgraduate courses without financial support (grade point average criteria does not apply this case) or if the candidate has been on a maternity or paternity or health reasons leave for at least six months.

Candidates from abroad will have to obtain:

- documents required for employment in the Republic of Slovenia not later than on 13 September 2018.
- recognition of education level (given by the Slovenian faculty where the candidate will be enrolled)
- conversion of the point grade average (given by the proposed mentor in Slovenia)

Selected candidates will receive an employment contract for the period of their doctoral education with the gross salary of 1.370 € (net cca 1.000 €).

Applications are open until Wednesday **4 July 2018**. Another call will be published at the end of July 2018. Please send your applications following the guidelines in the [Call](#).

Ljubljana, 15 June 2018