

## INTERNATIONAL EXCELLENCE FELLOWSHIPS

### Experience Report 2020/2021

<b>Name and title of fellow</b>	Prof. Dr. Goran Vladislavljovic, Senior Lecturer (Associate Professor)
<b>Duration and time of research stay</b>	2 months, from July 1 until the end of August 2021
<b>Host professor and host institute at KIT</b>	Prof. Dr. Heike P. Karbstein, Lebensmittelverfahrenstechnik

### Testimonial

<b>My research field is</b>
Chemical Engineering, microtechnology and bioengineering
<b>How my research field is going to affect the world of science?</b>
Microfluidic devices can be used for fundamental studies in colloid and interface science, chemistry, medicine, food science, biology, and other fields. They can be used as plug-and-play medical diagnostic devices, analytical devices, and microcapsule generators in the formulation industry for encapsulation of pesticides, drugs, functional food products and biological materials such as stem cells, viruses, and bacteria. They offer many advantages in science including small consumption of analytes, high sensitivity and selectivity in diagnostic and analytical applications, high encapsulation efficiency and superior size and morphology control in microcapsule generation.
<b>My main finding / highlight during my research work at KIT was</b>
New microfluidic method for production of monodispersed multiple emulsion droplets composed of up to several hundred inner droplets was developed and successfully tested. This method allows to generate double emulsion droplets with arbitrary number of monodispersed inner compartments. Such monodispersed double emulsion droplets can be used for screening emulsion formulations, and fabrication of artificial biomimetic cell-like and tissue-like materials with many exciting applications, from fabrication of miniaturised organs for in-vitro drug or vaccine discovery to fabrication of portable networks of interconnected cell membranes.
<b>I have chosen the Karlsruhe Institute of Technology because</b>
of a high expertise in emulsion science in the Food Process Engineering Institute.
<b>If you want to, you can give advice to the next fellows. What should they know about Karlsruhe, KIT and the International Excellence Fellowships program?</b>

International Excellence Fellowship program is a great opportunity to work alongside world-leading scientific experts at KIT and to have opportunities to exchange scientific ideas and knowledge with colleagues at KIT. The program is well managed and offers several networking activities and participation in a research alumni network.