

Field Report from Yulia Buranova
Wilhelms – Universität Münster, Institute of Material Physics
Stay at Central South University, Changsha, China
State Key Lab of Powder Metallurgy
19.10. – 30.10.2015

During my research work on an AlSc alloy I needed to perform a high accuracy chemical analysis on precipitates, which I have found in my alloy. To help me with this problem it was suggested to me to make a scientific visit to Central South University (CSU) in Changsha, China. Recently a transmission electron microscope of a new generation (FEI Titan G2 60-300) with an aberration corrector and a special attachment for precise EDX analysis was installed in this University.

I arrived in Changsha in the middle of October and during the next two weeks I had an opportunity to work with this microscope. In summary, from my 6 samples, I got a number of interesting experimental results. With the help of Prof. Yong Du and Dr. Kai Li I could make the first deductions from these investigations and some of these results are going to be published soon. In short, it was established that the size and chemical composition of precipitates can depend on prehistory of the sample. Moreover, it is shown that these precipitates reveal core-shell structures, containing different combinations of Al, Sc, Zr and Ti.

This was my first visit to China and I liked it a lot. The city of Changsha is a large metropole, where one can find nature parks (Yuelu mountain, Tangerine island) side by side with skyscrapers and development areas. The University campus is very green, there are lot of stores and cafes right next to its gates. And I really loved chinese food!

I would like to thank all the people, who made it possible for me to make this trip. First of all, the DPG project (SPP1713) for the financing. Prof. Du and Dr. Li for inviting me in CSU and TEM laboratory staff, who helped me to work on microscope.