



Charles University Faculty of Mathematics and Physics Departmend of Condensed Matter Physics

Erasmus + Summer traineeship



Tímea Kašeľáková 2020

The institution

I chose Charles university because:

- it is one of the oldest universities in the world
- it is the largest and most renowned Czech university, and is also the best-rated Czech university according to international rankings
- the main direction of the research performed at the department of condensed matter lies in studies of the structure and electronic properties of materials
- the prepared compounds can be investigated by so many methods





- to obtain practical skills on field Condensed matter physics in preparation of compounds based on rare earth metals (Melting, Annealing)
- to acquire new practical skills with structural characterization techniques (X-ray power diffraction, Laue diffraction, Electron microscope)
- to visit and see the monuments of the beautiful multicultural town - Prague

My work

- I worked in physical, chemical and technical laboratories;
- I prepared metal compounds based on rare earth metals by monoarc furnace and then single crystals by chzochralski pulling method;















My work

- I annealed the samples in furnace.
- I cut the prepared samples on wire saw.
- I did structural analysis by x-ray powder diffraction on powder diffractometer and chemical analysis by Scanning Electron Microscope MIRA.
- I evaluated of the measured data in OriginLab and FullProf program







SEM HV: 11.96 kV WD: 16.59 mm View field: 1.39 mm Det: BSE Detector 200 µm



More experienced

- I learned how to grow single crystals by many methods such as Czochralski pulling method, floating zone methods in mirror and laser furnace and flux.
- I participated to measurements of heat capacity, resistivity, magnetization etc.









F r e

t i m e

















2020 was the year which everybody will remember. The coronavirus COVID-19 pandemic is the defining global health crisis of our time and the greatest challenge we have faced since World War Two. Thats exactly the reason why my traineeship was so special and different from others.





Thank you for your attention

