Project 4.13. Structural and elastic properties of multicomponent lanthanide based borates

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Institute: IFPAN

Unit: SL1.1

Webpage of group: http://www.ifpan.edu.pl/SL-1/html/l-sl11.html
https://scholar.google.pl/citations?user=cXWZHsMAAAAJ
https://scholar.google.co.uk/citations?user=LXzCpWwAAAAJ

Background:
Multicomponent borates containing the lanthanide atoms are considered as valuable potential materials for optoelectronic devices, e.g. for lasers. Their structural and elastic properties influence the opportunity of application. Therefore the thesis subject is proposed to determine crystal structure of subfamilies of borates as a function of composition and doping level. Moreover the structural properties as a function of temperature and/or pressure will be studied in order to determine the thermal expansion and/or the compressibility.

Aim:
Determination of structural and elastic properties of borates as a function of composition, temperature and pressure.

Requirements:
- Basic knowledge on X-ray diffraction methods
- sufficient proficiency in English