

# Functional inorganic materials



Vilnius  
University

*Keywords: Inorganic chemistry, functional materials, sol-gel synthesis, nanomaterials.*



## Research group activities

Our inorganic chemistry work group is interested in materials, which are important in biomedicine, optoelectronics, conservation, restoration of cultural heritage and related industrial areas. The main field of the research of our group is soft chemistry

approaches in the synthesis of various advanced multifunctional materials, magnetic materials, thin films, biocompatible, optical materials and materials applied for the conservation and restoration of cultural heritage.



## Proposal

We can synthesize any inorganic material. We have new laboratories and we use modern material analysis techniques. Currently, we fabricate different double layered hydroxides (LDH) for optical and catalytic applications, ferroelectric materials (ferrites

and manganates), optical materials (lanthanide aluminium garnets, phosphates, silicates) for optoelectronic application and calcium hydroxyapatite and related phosphates for biomedical applications.



## Meet our team

### Prof. Habil. Dr. A. Kareiva

Group Leader - sol-gel chemistry, materials chemistry, inorganic chemistry.

### Prof. Dr. A. Beganskienė

nanomaterials, paper restoration, quantum dots.

### Assoc. Prof. Dr. E. Garškaitė

biomaterials, bioceramics, thin/thick films

### Assist. Prof. Dr. I. Grigoravičiūtė

biomaterials, LDH, wet chemical synthesis

### Assist. Prof. Dr. M. Misevičius

optical materials, aluminates, solid state NMR.

### Dr. A. Prichodko

biomaterials, calcium hydroxyapatite, calcium phosphates

### Assoc. Prof. Dr. R. Skaudžius

luminescent materials, garnets, X-ray diffraction analysis

### Prof. Dr. J. Senvaitienė

restoration chemistry, cultural heritage, conservation chemistry

### Assist. Prof. Dr. Ž. Stankevičiūtė

biomaterials, thin films, phosphates

### Assist. Prof. Dr. A. Žarkov

ferrites, phosphates, analytical chemistry

10 PhD students and Assoc. Prof. Dr. Emeritus Darius Juozas Jasaitis



## Research outcomes

Every year new ambitious members join our group. The group has 10 PhD students and a number of master and bachelor students. The group has more than 230 articles published in peer-reviewed journals, more than 400 abstracts published in the conferences, several patents, books and manuals. Our group

has implemented 14 international and national research projects. The members of our group supervise 26 PhD students, 4 postdoctoral researchers and 20 foreign trainees.



## Resources

- For phase identification at ambient temperature, the XRD data can be collected using Rigaku MiniFlex II diffractometer or Bruker D8 Advance diffractometer.
- Scanning electron microscopy (SEM) images can be taken for the morphology characterization with Hitachi SU-70.
- Thermogravimetry/Differential Thermal analysis (TG/DTG) of the material can be carried out in the air at a heating rate using Simultaneous Thermal analyzer STA6000 from PerkinElmer.

Functional inorganic materials group has a lot of colleagues and partners in Faculty of Physics, Faculty of Medicine and Institute of Chemistry, led by prof. Artūras Žukauskas, prof. Jūras Banys, prof. Gintautas Tamulaitis, prof. Antanas Feliksas Orliukas, prof. Gintautas Brimas, prof. Rimantas Ramanauskas and other.



## Contacts

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