

PhD. Study Program: Inorganic Technology and Non-metallic Materials – general information

Graduates of PhD study program in the area of Inorganic Technology and Non-metallic Materials gain deep knowledge on scientific methods of research related to preparation of new types of non-metallic inorganic materials, with special focus on glass, ceramics, and surface modification of a broad range of various materials, including biomaterials. Graduates are able to solve problems related to inorganic technologies, development and characterization of new materials. They have special knowledge in the area of glass, inorganic binders, ceramic and refractory materials and inorganic additives. They have deep theoretical knowledge in the field of thermodynamics and kinetics and are capable of solving challenging engineering problems in technical practice. Graduates understand methods of studying structures as well as materials characteristics. They speak foreign languages, actively use computer and information systems, are able to work actively in teams, plan their own development within their research field and execute project management. Gained knowledge represents an excellent basis for obtaining a job either in academic or industrial research and development.

What we offer:

- Unique opportunity to participate in the European project integrating significant **international knowhow and experience**
- Access to up to **1 year internships** with FunGlass international partners at their home sites in Germany, Italy, or Spain under supervision of world leading scientists
- Shorter (up to 3 months) **training internships** at various research institutions in EU
- **Individual training plans** including not only scientific but also complementary competencies
- **Scholarships** to cover living cost during study
- **Monetary allowance** to cover the cost of internships, including accommodation, per diems, and travel
- Access to **high-end laboratories and equipment**; for full list see <http://www.funglass.eu/equipment/>
- to earn **double PhD degrees** with international partner institutions:



PhD. Topics for 2019/2020:

<https://www.funlass.eu/study-programs/doctoral-study-phd/> - link with topics and abstracts.

1. CORROSION AND WEATHERING OF TABLEWARE GLASS / eng

2. MULTIFUNCTIONAL GLASS COATINGS BY SOL-GEL FOR DIFFERENT APPLICATIONS / eng

3. MULTIFUNCTIONAL POLYMER-DERIVED GLASS-CERAMIC COATINGS / eng

4. TRANSPARENT NANO-GLASS CERAMICS FOR UP AND DOWN CONVERSION / eng

5. SECOND LIFE OF WASTE GLASSES. APPLICATION OF GLASS MICROSPHERES IN ADVANCED 3D GLASS STRUCTURES / eng

6. GEOPOLYMER-LIKE MATERIALS FROM ENGINEERED MIXTURES OF INORGANIC WASTE / eng

7. POROUS GEOPOLYMERS FROM WASTE GLASS POWDERS WITH ENGINEERED ADDITIVES / eng

8. CHARACTERIZATION, FUNCTIONALIZATION AND IMPROVEMENT OF GLASSES FOR PHARMA / eng

9. TAILORING THE DISSOLUTION KINETICS OF MESOPOROUS ION-DOPED BIOACTIVE GLASSES UNDER DIFFERENT CONDITIONS FOR DRUG DELIVERY APPLICATIONS / eng

10. ADVANCED MANUFACTURING OF 3D SCAFFOLDS USING SOLID, HOLLOW AND MESOPOROUS BIOACTIVE GLASS MICROSPHERES / eng

11. NOVEL OXYSULFIDES FOR NIR MECHANOLUMINESCENCE AND BIOMECHANICAL IMAGING / eng

12. INTERLAYER ADHESION IN FUNCTIONAL MULTILAYER COATINGS ON GLASS / eng

13. OXIDE PHOSPHORS FOR SOLID STATE ILLUMINATION AND SPECTRAL CONVERSION / eng

Admission requirements:

- M.Sc./graduate degree in inorganic materials and technology, and material science and engineering; graduates from related field, such as physical chemistry, chemical physics, inorganic chemistry, organic and organometallic chemistry, analytical chemistry, chemical engineering, biochemistry, physics, and theoretical chemistry,
- with the desire for independent laboratory work are also eligible,
- high English language proficiency skills,
- strive for excellence and be able to focus on solving scientific problems,
- be a team player of high cultural awareness,
- for more information, refer to Daniela Vavrová, PhD Study Advisor, daniela.vavrova@tnuni.sk

**Admission exam terms:
terms:**

26.-28.3.2019

28.-30.5.2019

26.-28.8.2019

Application submission

23.3.2019

14.5.2019

12.8.2019

Your application package needs to include the following:

- application form- Application form,
- CV,
- cover letter,
- scan copy of passport (applicants from abroad),
- copy of your diploma,
- list of publications.