

## 1 PhD Fellowship in Marie Skłodowska-Curie Innovative Training Network on “Synthesis of biocompatible Polymers for Tissue Engineering”

**PRESENTATION:** We invite highly motivated and creative applicants for a PhD position at the Institute of Applied Synthetic Chemistry (TU Vienna, Austria). The PhD candidates will be part of the innovative training network (ITN) “Towards Next generation Eco-efficient PHOTO and EMULSION Polymerizations” funded through the Horizon 2020 Marie Skłodowska-Curie Actions Programme. PHOTO-EMULSION focuses on new eco-friendly chemical processes for the manufacturing of plastic products. The project aims at training a group of 8 PhD students through a high-quality research network including 8 internationally reputed academic institutions, 4 leading companies and 2 non-profit organisations. Balanced and European-wide, the project’s diversity expresses through the participation of 8 different countries: Austria, France, Germany, Ireland, Poland, Slovenia, Sweden & Spain.

**PhD PROJECT:** The research project focus on an efficient method for producing highly porous polymers with cellular interconnected macroporous structure. At TU Vienna new bifunctional and polyfunctional monomers (in particular based on renewable resources) will be synthesized to open the door for novel eco-friendly biomaterials and coatings. 3D printing of porous scaffolds for tissue engineering applications is directly performed in Vienna. Feedback from cell biology labs will be used to optimize the morphology and mechanical properties and to design the hierarchical structure specifically for the desired type of cells and tissue generation. Furthermore, these novel materials could find application as 3D-printed chromatography columns. At the partner Institute at the University of Maribor (PolyOrgLab), a templating method is adapted, where droplets of an emulsion are used to induce macro pores in the polymer bulk while the monomers are included in the continuous phase. State of the art thiol/ene click reaction will be used within the continuous phase in order to tune both the morphology and mechanical properties of the formed polymer networks since these are important characteristics of the material which are governing the biological cell growth and proliferation. The PhD project includes 26 months in the main host institution (TU Vienna), a 6-month secondment at the academic partner premises (UNI Maribor), and a 4-month secondment at an industrial partner (Glantreo, Ireland).

**ELIGIBILITY:** At the time of recruitment, the candidate must not have resided or carried out their main activity (work, studies, etc.) in the country of their recruiting organisation for more than 12 months in the 3 years immediately prior to start of the project. Short stays such as holidays are not taken into account.

### **Specific Requirements for Employment:**

**TU Wien:** Master in Chemistry with focus on synthetic organic and macromolecular chemistry. Your field of study is Synthetic Chemistry, and you have experience with polymerization (preferably radical and cationic) and the synthesis of monomers and initiators.

**GENERAL CANDIDATE REQUIREMENTS:** Candidates can be of any nationality, but are required to undertake transnational mobility. Candidates should ideally possess a Master's degree in chemistry. Candidates must be within the first four years of his/her research career. Applications from candidates who already possess a doctoral degree will not be considered. Potential candidates should be able to demonstrate motivation and a strong eagerness to learn. Individuals must possess excellent written, oral communication in English and organizational skills. In addition, they should demonstrate the ability both to work independently and as part of a team. Previous related research experience will be a distinct advantage. Scientific curiosity with an open attitude to work interdisciplinary in the framework of international collaborations is also essential. All students must be willing to travel. Envisaged starting date is **February 1<sup>st</sup>, 2019**.

**FUNDING:** PhD position is funded at the level stipulated by Marie Skłodowska-Curie Actions funding rules with stipends starting at €45,000 per year (pre-tax, full time 40 hours / week, for 36 months). Final salary calculations take into account living costs of the recruiting country. Additionally to salary, living allowance and mobility allowance will be granted. Additional family allowances are available when applicable.

**APPLICATION PROCESS:** (\*Required document for first application)

- Cover-letter stating your motivation\*
- Statement of adherence to the mobility rule
- CV including a list of publications, conference contributions, and other scientific activities (if applicable)\*
- Copies of education certificates and transcripts
- Proof of English proficiency
- 1 letters of reference and 2 names (with contact information) of recommenders.

The TU Vienna is aiming to increase the proportion of women within scientific and artistic staff and thus strongly encourage qualified women to apply. Persons with disabilities are especially encouraged to apply.

**SUBMISSION:** Applicants should submit the documents to Prof. Robert Liska (TU Vienna) robert.liska@tuwien.ac.at as soon as possible. Applications will be reviewed until the positions are filled. Applications failing to include the requested documentation, where the candidates do not meet the eligibility criteria or which do not indicate the preferred projects WILL NOT be considered.

**SELECTION PROCESS:** Shortlisted candidates will be invited for in-person interviews (on site or by telephone / Skype). We will endeavour to provide feedback to unsuccessful applicants where possible.

**BENEFITS:**

- A highly valuable double expertise in the two predominant zero-VOC polymerisation: photopolymer science and polymerisation in dispersed systems
- Interdisciplinary supervision. The PhD student will be supervised by two academics from different disciplines: PolyHIPEs and Photopolymerization and an industrial mentor.
- 4-month industrial secondments
- Meaningful and innovative training methods: tandem PhD, distance language learning, ESR as itinerant science educator, online courses, PhD-led subproject, highly interactive meetings and tutorials, etc.

**Contact info**

Univ. Prof. Dr. Robert Liska

Head of the Christian Doppler Laboratory for Photopolymers in Dentistry

TU Wien

Institute of Applied Synthetic Chemistry

Division of Macromolecular Chemistry

Getreidemarkt 9 / 163 / MC Lehartrakt 3rd floor

1060 Vienna, Austria

Tel: +43 1 58801 16273

Cell phone: +43 664 88457837

FAX: +43 1 58801 16299

Email: [robert.liska@tuwien.ac.at](mailto:robert.liska@tuwien.ac.at)

Web: [www.ias.tuwien.ac.at](http://www.ias.tuwien.ac.at); <http://amt.tuwien.ac.at>