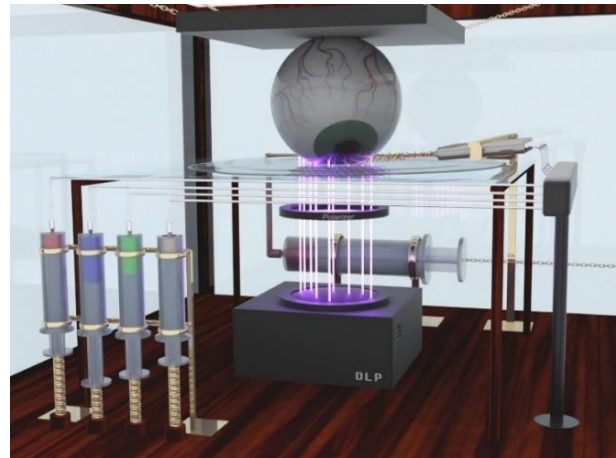




## ***MASTERS THESIS IN MULTIDIMENSIONAL PRINTING (2D-4D) OF ADVANCED MATERIALS***

Are you curious about the engineering and the chemistry behind 2D-4D printing? Are you interested in air quality and its monitoring? Would you like to work on and co-author a multidisciplinary project involving synthesis and engineering of ultraporous Metal-Organic Frameworks (MOFs) (one tea spoon can have the specific surface area of a football field) and how to 3D print them into a luminescent sensor of air pollutants integrated on a phone?

At the Institute of Physical and Theoretical Chemistry we are working on developing an “optical nose” for monitoring air quality by using a novel Digital-Light Processing (DLP) printing-based approach. The goal of the project is to create a multisensing device that incorporates advanced sensing MOF materials and that can be easily integrated in a phone using a novel DLP-based printing approach. You will learn and contribute to the synthesis, characterization and postsynthetic modification of ultraporous Metal-Organic Frameworks, 3D printing, and sensing of air pollutants.



**Contact:** Dr. Ing. Carlos Carbonell ([carlos.carbonell@tugraz.at](mailto:carlos.carbonell@tugraz.at))  
Institut für Physikalische und Theoretische Chemie  
Institute of Physical and Theoretical Chemistry  
Technische Universität Graz - Graz University of Technology

**Start:** Immediately

**Advertised since:** May 2022