

Master Project: New methods for purifying polymers

The **Giovannitti group** is actively looking for motivated **Master students for projects for 6 or 12 months** to develop purification methods for state-of-the-art redox-active polymers for electrochemical applications. Interested? Reach out and join our team!



The Project: Redox-active polymers contain side products from synthesis that act as roadblocks for employing the polymers for real-life applications. This project develops purification methods to remove these impurities, enabling to use these materials for various applications, including bioelectronics or energy conversion technologies. Once polymers have been purified, their physical and electrochemical properties are compared to the polymers containing impurities to learn how side products left over from synthesis are affecting the polymer properties.

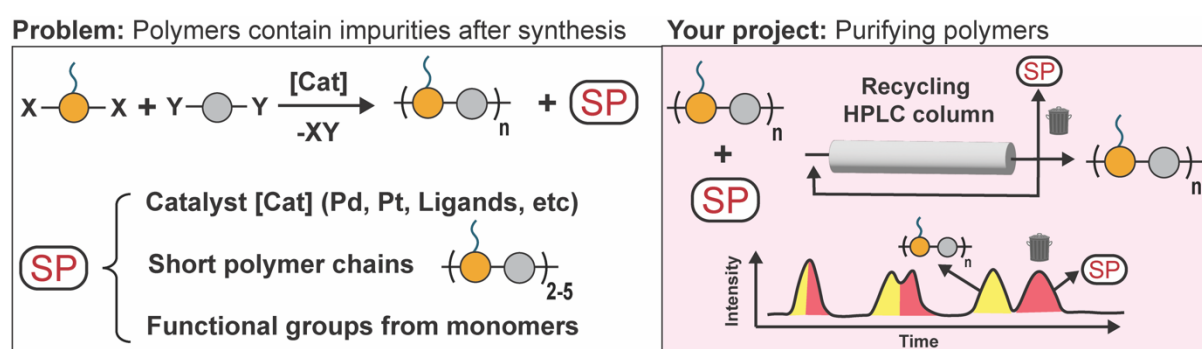


Fig. 1: Purification of polymers using high-performance liquid chromatography (HPLC)

What you will do: You will learn how to use the performance liquid chromatography (HPLC) from our group to purify polymers. You will focus on removing small molecules and metal traces. Furthermore, you use the size exclusion chromatography column to sort polymers by chain length (molecular weight) to study the role of molecular weight on the physical properties. Once the polymers are purified, you will study the structure-property relationships of the purified polymers. You will collaborate with researchers at international universities (in Europe, UK, and USA)

What you will learn from us:

- Purification methods for polymers
- Chemical characterization techniques
- Assessment of polymer impurities
- Structure-property relationships

After the completion of your master's thesis project, you will have built a strong knowledge of liquid chromatography techniques (highly relevant for jobs in the chemical industry)

Skills to bring:

- Being curious and motivated
- Open for learning
- Training your colleagues
- Supporting others

This is a characterization project - the majority of your time will be spent working within the chemistry and characterization labs.

Curious about the project? Reach out to Alexander or apply here:

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www.gio-research.com