



TECHNOLOGY OFFER

Chiral monomer obtained from furfural (biomass) for applications in polymers.



A process allowing for the obtention of a chiral 1,2-diol derived from furfural has been developed. The process is highly selective and high yielding. An industrial (SME or large company) or academic partner is sought for the joint development of polymers based on this monomer (polyurethanes, polyesters or polycarbonates). Technology is available for licensing and/or joint development.

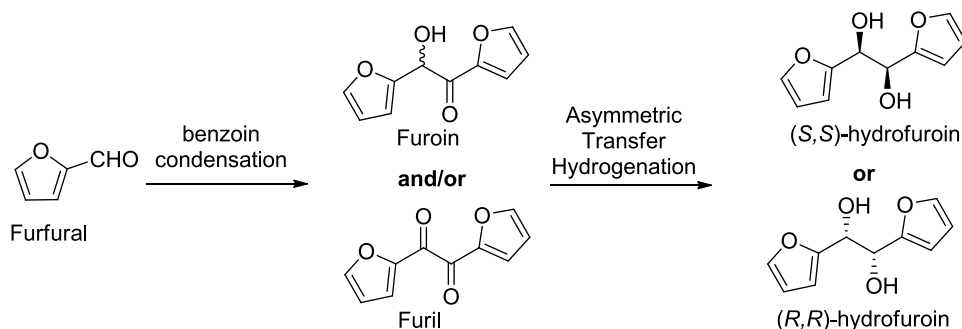
Give your projects a strong starting IP position:

At ICIQ, we consider that patents are safe and solid tools to provide protection from competitors. This is why we file patents for our developed technologies: to give our co-development projects with industry a **strong starting IP position**. As a research centre our goal is always to co-develop our technology **adapting it to the industrial partner's specific needs** and ultimately transfer the technology to this company, with a **flexible licensing strategy** adapted to each case.

We believe these elements are essential to a **healthy open innovation framework** and to a growing knowledge-based economy.

Furfural is readily available from biomass and is widely produced at the large scale. This compound and its derivatives are regarded as a promising alternative to oil-based monomers in the manufacture of polymers.

We recently developed a scalable route that allows for the preparation in high yield (up to 97%) of a chiral 1,2-diol from furfural, following a solvent-free reaction based on asymmetric transfer hydrogenation. The thus obtained 1,2-diol or hydrofuroin presents high enantiomeric and diastereomeric excesses. The synthesis scheme can be summarized as follows:



This is the first process to date that allows for the preparation of chiral hydrofuroin with such high yields and selectivities, and employing a low amount of catalyst, which makes it reliable for large scale applications, such as polymer synthesis. We are looking for an industrial (SME or large company) or academic partner for the joint development of polymers (polyurethanes, polyesters and/or polycarbonates) using the hydrofuroin obtained by this process. Such chiral polymers may find applications in performance materials such as liquid crystals, optical materials, medical goods, fibers and chiral resolution agents. The technology is also available for out-licensing.

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