

A PATENT FOR SAFER DRUGS: THE POLITECNICO DI MILANO PATENTS AN INNOVATIVE TOOL FOR THE CHEMICAL CHARACTERIZATION OF DRUGS AND PROTEINS

PHARMA HORIZON



POLITECNICO MILANO 1863

Chemical characterization of drugs and proteins in an unambiguous and quantitative manner. This is the goal of the CHIMERA project that has resulted in the researchers from Politecnico di Milano's Department of Physics patenting an innovative tool capable of measuring the chirality of drugs and proteins.

A molecule is chiral if in nature it exists under two forms that, notwithstanding the same chemical formulation, are arranged in symmetrically opposite geometrical structures as if they were mirror images. In a drug, the two chiralities (mirror forms) of the same molecule might produce different effects on the body. That is the tragic case, for instance, of *thalidomide*: extensively used in the 50's, it was then discovered that if taken by pregnant women, one of the two chiral forms had the desired anxiolytic and sedative effects, whereas the other one provoked serious foetal malformations. The characterization of the chirality of molecules is also of fundamental importance in the study of the structure of some proteins, on the behaviour of which such degenerative diseases as Alzheimer and Parkinson depend.

The **CHIMERA ("Chiral Measurements by Heterodyne Amplification")** project will result in the production, engineering and marketing of a chirality-measuring tool with several advantages in terms of compactness, simplicity of operation, measuring speed and quantity of measurable information, compared to the commercial products available on the market. **The new device will additionally help cut down production costs and selling price, thereby enabling a growth in market size.**

This tool, still in its development phase at the Politecnico labs, has already yielded excellent results, and in the long term it might become part of the quality control processes of pharmaceutical companies, or even become part of a clinical diagnostic tool.

For this reason, it has already earned for itself the *Research Ideas for the Market* Award, the prize-giving ceremony of which was held in Catania during the *Materials 2016* conference.

The Principal Investigator (Professor Dario Polli) has additionally secured a prestigious funding from the European Research Council called "ERC-Proof of Concept", worth 150.000 Euros in 1 year, to take the idea outside the labs and place it on the market.

<http://www.teknoscienze.com/a-patent-for-safer-drugs-the-politecnico-di-milano-patents-an-innovative-tool-for-the-chemical-characterization-of-drugs-and-proteins/>