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**Supervisor:**

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**PhD project title:**

Nanostructured drug delivery systems for topical administration

**Research summary:**

In recent years, Nanostructured Drug Delivery Systems (NDDS) attracted a great deal of attention for topical administration of drugs. In fact, NDDS by encapsulating drugs into systems with nanometric size, may increase solubility, bioavailability, effectiveness of the therapeutic agents, may facilitate selectivity for a specific site/target and may control drug release based on their physicochemical characteristics.

My doctoral project is divided into two main fields of research, cutaneous and ophthalmic. The research activities include the development of new NDDS and their technological/biopharmaceutical characterization. In detail, aim of the project is to provide reproducible and reliable methods for the evaluation of different properties of these NDDS, which will help in a phase of formulation development to reduce in vivo experimental tests and therefore research costs. As regards the cutaneous field, these methods are devoted to the study and the prediction of the interaction of a formulation with the skin, while for the ophthalmic field they concern the evaluation of different properties of formulations on cell cultures such as the protective activity against damage caused by a light source.

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