



UNIVERSITÀ DEGLI STUDI DI NAPOLI "FEDERICO II"

Dipartimento di Scienze Chimiche

*Dottorato in Scienze Chimiche - XXXIV Ciclo*

---

**Research Doctorate (Ph.D.) in Chemical Sciences**

**34<sup>rd</sup> Cycle – Academic Year 2018/2019**

**Tutor:** Luigi Paduano

### ***Project Information***

#### **1 - Title**

Nanosystems and their interaction with proteins and model membranes.

#### **2 - Key words**

Theranostics, nanovectors, delivery, imaging, biological context

#### **3 - Abstract**

Aims of the project are the design, development and characterization of different nano-systems (including metal-oxide and lipid nanoparticles) as devices for biomedical applications, in terms of both therapy and diagnosis. Besides their intrinsic physico-chemical properties, inorganic nanoparticles are valuable platforms able, when suitably functionalized, to deliver imaging and/or therapeutic agents in a selective way to a cellular target. On the other hand, lipid nanosystems are characterized by a very high versatility and by the possibility to be made stimuli-responsive. Based on the final goal of using these nanosystems for biomedical applications, one of the key tasks of the research project is the study of their interaction with and effects on components of biological systems, particularly proteins and model membranes.