



## ***Bioinspired Nanotechnology***

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Over the years, many different species in nature have adapted to their habitats by evolving suitable surface functionalities. For example the water-walking ability of water striders, the bright colors of butterfly wings or the ability to walk up the walls by geckoes. All these surface functions are due to the specific structures these species have on their skin in combination with the inherent materials properties.

Indeed, the surface topography can influence the material properties and as a result, the interaction with or response to such material. Wetting, friction, adhesion or color properties of a specific surface can be altered depending on the specific topographical features present on that surface.

Micro and nanofabrication technologies offer to us the opportunity to mimic natural surfaces to impart additional properties or functions to artificial materials. However, the processes are not always straightforward as the natural topographies have an implicit complexity and oftentimes are comprised of convoluted hierarchical micro and nano structures.

In this seminar, I will explain the specific surface engineering processes we have developed to replicate artificially these complex natural structures. The performance and application of bioinspired topographic surfaces in the fields of biomaterials, optics and solar technology will be also discussed.