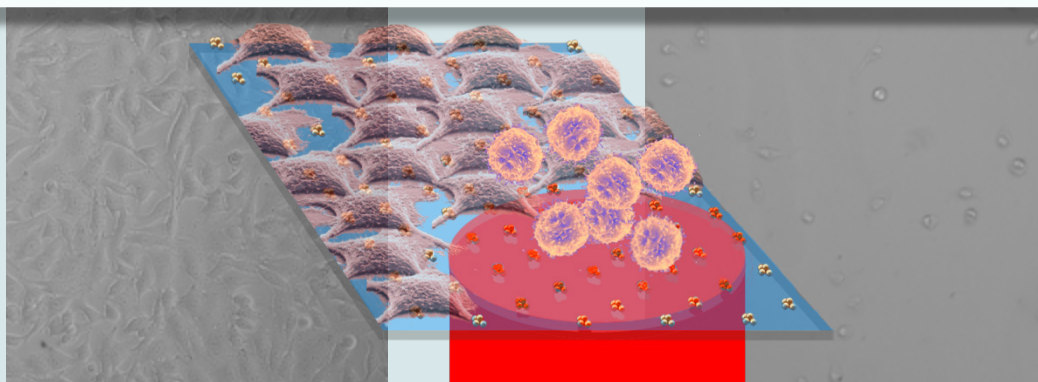


## Non-invasive detachment of adhered cells

### Plasmonic interaction-based detachment of cells and biofilms

Patent pending - priority September 23, 2015

Biocompatible surfaces with Near Infrared (NIR) light responsive properties for the non-contact detachment of cells and biofilms in biomedical applications.



#### Background:

Culture of adherent cells is a fundamental biotechnology tool employed in the development and production of biopharmaceuticals. A major deterrent in the spread of this fundamental tool is related to productivity issues associated to the cell detachment step from culture surfaces.

Currently available invasive cell detachment technologies based on chemical attack or mechanical scraping, and non-invasive methods based on external stimuli such as heat or electrical current, provide sub-optimal solutions to the cell detachment issue.

An efficient, automated cell detachment system will translate into improved biopharmaceutical treatments.

#### Technology:

The present invention provides surfaces and surface modification methods that result in Near Infrared (NIR) responsive substrates that promote cell detachment upon excitation with NIR light, an innocuous radiation that shows deep penetration in human tissues and other materials.

Surface modification is achieved via an inexpensive treatment of different types of materials.

#### Example applications:

Non-invasive cell detachment of adherent cells during cell culture in biopharmaceutical processes.  
Prophylactic prevention of biofilm formation in implanted catheters.

#### References:

•Plasmonic Surfaces for Cell Growth and Near-Infrared Light Triggered Retrieval. J. J. Giner-Casares, M. Henriksen-Lacey, I. García, L. M. Liz-Marzán, *Angew. Chem. Int. Ed.* 2016, 55, 974.