Antibacterial films obtained by *sputtering* and method for conferring antibacterial properties to a substrate

This invention relates to a method for conferring antibacterial properties to a substrate. The substrate is coated with a vitreous material, ceramic or glass-ceramic containing in its interior a metal having antibacterial characteristics. The coating takes place by means of radio-frequency (RF) sputtering technique.

IPC Codes

C23C-014/10

C23C-014/14

Keywords

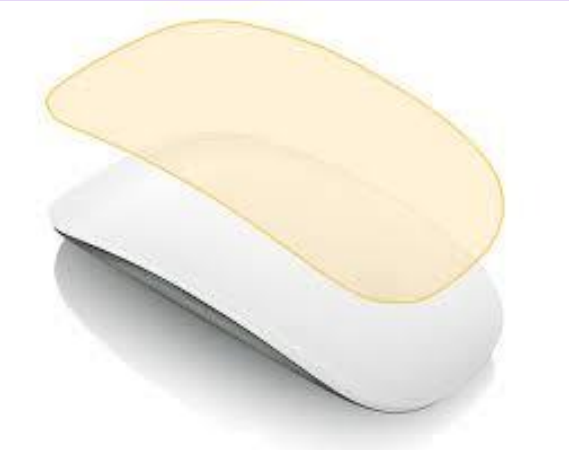
- Antibacterial coatings
- Sputtering
- Radiofrequency
- Silver
- High temperature

Priority Number: ITTO20080098

Technology Transfer and Industrial Liaisons Area
telephone: +39 011 090 6317 - email: innovazione@polito.it

POLITECNICO DI TORINO

Antibacterial films obtained by *sputtering* and method for conferring antibacterial properties to a substrate



Description

Many applications for healthcare, requiring surgical devices, or simply regarding to daily activities need antibacterial properties.

A number of antibacterial materials have been identified, such as natural and inorganic substances. Among them silver or silver ions are well known due to their powerful antibacterial activities.

The main drawback of several techniques used for the deposition of antibacterial films consists in the lack of a mechanical as well thermal stability. Moreover the time-related antibacterial properties decrease or worst vanish.

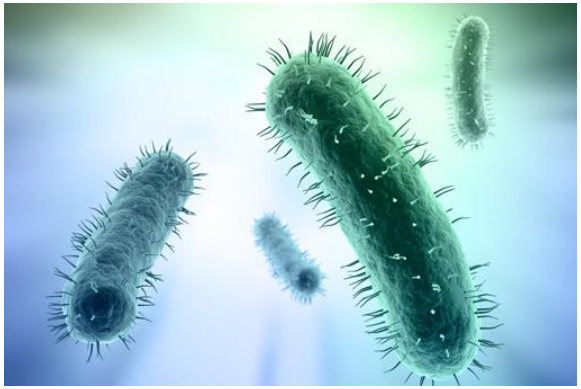
The novelty of this approach is to provide a method allowing to obtain a coating suitable to any substrates, with high wear, mechanical and thermal resistance.
As well it allows to ensure active antibacterial properties for an extended period of time.

Applications

- Antibacterial coatings for several substrates
- Coatings for medical/surgical devices
- Air filters
- Food industry: food packaging and food handling.

Advantages

- Demonstrated antibacterial effect
- Higher thermal and mechanical resistance for extended periods of time
- Suitable for several substrates (polymers, glasses, metal and alloys)
- Reliable process ready for a scale-up.



innovazione@polito.it

Priority Number: ITTO20080098